The impact of consumers' positive online recommendations on the omnichannel webrooming experience

El impacto de las recomendaciones online positivas de los consumidores en la experiencia webrooming omnicanal

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Abstract

Purpose – This purpose of this paper is to analyze how consumers' online recommendations affect the omnichannel webrooming experience based on the internet, physical and mobile channels.

Design/methodology/approach – Two experimental studies are implemented. Study 1 analyzes the impact of an online review on the physical interaction with the product. Study 2 modifies the moment of receiving the online recommendation and its social tie.

Findings – Webrooming improves the shopping experience. Online recommendations from anonymous customers increase confidence in the product's adequacy, although this effect depends on the moment of receiving the recommendation and the level of confidence before interacting physically with the product. Friend recommendations reinforce preferences regardless of previous online experiences.

Research limitations/implications – This research examines the effects of different types of online recommendations on offline shopping experiences, choice and confidence. Confidence is stressed as a key variable in omnichannel behavior.

Practical implications – The findings offer practical value for electronic word-of-mouth marketing, omnichannel marketing, as well as online and physical channel management.

Originality/value – This is one of the first studies that examine the impact of online consumer recommendations on shopping experiences combining online, mobile and physical channels. The results reveal the importance of recommendations' source and moment of reception for determining consumers' preferences, choice and confidence.

Keywords Retail, Omnichannel, Webrooming, Confidence, e-WOM, Social tie

Paper type Research paper

Resumen

Propósito – La presente investigación analiza cómo las recomendaciones online afectan a la experiencia webrooming omnicanal, basada en el canal físico, online, y móvil.

Diseño/metodología/enfoque – Se llevaron a cabo dos experimentos. El Estudio 1 analiza el impacto de una revisión online positiva en la interacción posterior con el producto. El Estudio 2 modifica el momento de recibir la recomendación y el vínculo social entre emisor y receptor.

Hallazgos – El proceso webrooming mejora la experiencia de compra. Las recomendaciones online de clientes anónimos incrementan la auto-confianza sobre la adecuación del producto, aunque este efecto depende del momento de recibir la recomendación y del nivel de auto-confianza previo a la interacción física con el producto. Las recomendaciones de amigos refuerzan las preferencias, independientemente de la experiencia online previa.

Limitaciones/implicaciones – Esta investigación examina los efectos de diferentes tipos de recomendaciones online en experiencias offline, le elección y la auto-confianza. La auto-confianza se revela como una variable clave del comportamiento omnicanal.

Implicaciones prácticas – Los resultados ofrecen implicaciones para la gestión del marketing boca-oído y omnicanal, así como la gestión de la experiencia en el canal físico y el online.

Originalidad/valor – Este es uno de los primeros estudios que analizan el impacto de recomendaciones online en experiencias de compra que combinan canales online, offline y móvil. Los resultados revelan que la importancia de la fuente y del momento de recibir la recomendación determinan las preferencias, elección, y auto-confianza de los consumidores.

Palabras clave – Comercio minorista, Omnicanal, Webrooming, Auto-confianza, Boca-oído electrónico, Vínculo social

Tipo de artículo – Trabajo de investigación

1. Introduction

The proliferation of new channels with which consumers interact with retailers is affecting the shopping environment. Consumers can easily combine different channels to search for information about products, corroborate it and/or make the purchase. The most extended behavior among online users consists of webrooming, that is, an online information search and a visit to the physical store to purchase the product. In fact, nearly half of the offline sales are influenced by Web searches (Forrester Research, 2018).

Moreover, the arrival of digital, and specifically mobile technologies, has meant a revolution in the consumer purchase process because the borders of all channels have fade away (Verhoef *et al.*, 2015). Consumers have thus moved from sequential purchase processes to purchase journeys where all channels are interchangeably and seamlessly used. Specifically, mobile technologies affect all the stages of the purchase journey (Pantano and Priporas, 2016). A recent report shows that 82 per cent of Spanish consumers use their smartphone to search for product information (Ditrendia, 2017). In the context of webrooming, this means that consumers may use online sources *not only before* going to the store *but also while* they are having the physical experience. Webrooming thus evolves to more dynamic, borderless, omnichannel experiences (e.g. Research, Testing and Buying –RTB-, Fernández *et al.*, 2018; Social, Local, Mobile –SoLoMo-, Kang, 2018).

In this context, new technologies allow consumers to access other users' opinions and evaluations (becoming one essential source of knowledge) anytime and anywhere, which are used to form attitudes and make decisions (Hennig-Thurau *et al.*, 2010). However, despite the great body of research analyzing the effects of traditional word of mouth in conventional shopping environments and of electronic Word of Mouth (e-Wom) in e-commerce, research is scarce on how e-Wom influences the consumer's purchase behavior in a webrooming omnichannel experience.

This research analyzes the impact of online social recommendations on the webrooming omnichannel experience and purchase outcomes. Specifically, this paper analyzes:

- how consumers combine the online and offline channels to make purchase decisions with a high degree of confidence;
- how online users' recommendations help the consumer to improve their omnichannel experience; and
- how different types of recommendations (anonymous customer versus friend), received before and during the physical interaction, affect the consumer' preferences for the product, choice, and choice confidence.

2. Research background

Webrooming has been referred to as a form of multichannel shopping (Burke, 2002), cross-channel shopping (Heitz-Spahn, 2013) and research shopping (Verhoef *et al.*, 2007). Following Flavián *et al.* (2019), webrooming involves a purchase process with a choice phase divided into two parts. In the first stage, the consumer finds on the internet an alternative that probably best matches her or his needs or shopping goals, but a lack of confidence prevents the online purchase. In the second stage, the consumer confirms the information at the physical store and makes the purchase. This specific sequence mimics previous conceptualizations of two-stage decision processes (Peterson *et al.*, 1997) but differs from other webrooming behaviors (e.g. "click and collect"; Fernández *et al.*, 2018).

Recently, the boundaries between channels have blurred and customers use them seamlessly and simultaneously during their purchase experiences (Verhoef *et al.*, 2015). The concept of webrooming can thus be extended as a form of omnichannel shopping where the consumer searches for information online before going to the physical store to make the purchase and also access the internet with their smartphones while in store to search for information (Rippé *et al.*, 2017).

Webrooming allows consumers to reduce the uncertainty associated with the purchase and to make the decision with a high degree of confidence (Flavián *et al.*, 2016, 2019). Choice confidence is related to the certainty with which consumers' attitude toward the decision is held (Rucker *et al.*, 2014). For this research, achieving confidence is an approaching goal (Heitmann *et al.*, 2007) that motivates webrooming. According to uncertainty reduction theories (Lee, 2001; Stafford and Grimes, 2012), feeling uncertain has a powerful motivational effect. Consumers strive to reduce such uncertainty and feel confident. In the omnichannel context, consumers combine channels according to their informational needs, creating individuated information that increases their perceived control over the process (Zhang *et al.*, 2010). This research analyzes how consumers combine channels to increase their choice confidence.

In addition, this study examines the influence of online social recommendations which are received during webrooming experiences. With the advent of new technologies, the ways consumers gather and exchange information about products have changed dramatically

(Hennig-Thurau *et al.*, 2010). In purchase decisions involving uncertainty, consumers may seek for reassurance in their judgments by relying on other consumers' opinions and recommendations (Brown and Reingen, 1987; Duhan *et al.*, 1997). Therefore, this paper investigates the impact of the ubiquitous access to e-Wom through different channels (i.e. internet, mobile applications), and from different types of consumers (i.e. tie strength; Steffes and Burgee, 2009) on the consumer's purchase behavior.

3. Hypotheses

3.1 Effects of the online–offline combination

This research follows Dholakia *et al.*'s (2010) framework for studying the omnichannel webrooming behavior. Consumers bring several particularities with them that affect their interaction with the physical store. In this channel, consumers encounter new elements that influence their final evaluations and decision. In this research, consumers bring an initial impression of a product (target hereinafter) formed in a previous online interaction. Moreover, they encounter a new alternative (rival hereinafter) which can be also considered for the purchase. If the consumer carries out webrooming experiences to be confident in the product's adequacy (Flavián *et al.*, 2019), it seems interesting to include a new alternative to test the stability of the consumer's initial preferences.

Past research supports the benefits derived from the combination of online–offline sequences in consumer's knowledge, attitude and purchase intentions toward the product, (Daugherty *et al.*, 2008; Keng *et al.*, 2012). The online experience may have a significant influence in the offline experience (Castañeda *et al.*, 2018). If the consumer forms a favorable initial impression of the product with a virtual experience, this evaluation may be enhanced after a direct experience. Repeated exposure to the target product can increase awareness and recognition of the product, which ultimately results in a higher preference (Lee, 2001; Stafford and Grimes, 2012).

> *H1.* Purchase intention toward the target will be higher when the consumer searches for information online and then confirms the information offline than when the consumer has only an online interaction with the product.

Consumers' preference for a product previously considered online (target) are expected to be higher than for a new product (rival) found at the store. Consumers repeatedly exposed to a stimulus become familiar with it, which leads to a higher confidence in their judgment and ultimately determines their preference (Stafford and Grimes, 2012). Furthermore, consumers should choose this product more probably than the rival because they combine the online and offline channels to reinforce the idea that the product considered is the best alternative (Keng *et al.*, 2012). Finally, information processing literature establishes that consumers carry out exhaustive information searches and analyze every piece of available information to gain confidence in their judgments (Li *et al.*, 2016). Previous studies state that, compared to one-stop shoppers (i.e. those who use only the offline or the online channel to carry out the purchase) (Viejo-Fernández *et al.*, 2019), and to other kinds of research shoppers (Fernández *et al.*, 2018), webroomers are more likely to follow a central route of processing where they analytically search, obtain, compare and evaluate information about products, brands and/or retailers before purchasing. Therefore, consumers will be more confident when they choose a product which has been researched through a webrooming experience than when they choose a product which is only evaluated at the physical store:

> *H2.* After a physical interaction, (a) purchase intention, (b) the likelihood of choosing and choice confidence will be higher for the target product than for the rival product.

3.2 Effects of consumers' online recommendations

This paper examines the impact of online social recommendations on the omnichannel webrooming process. Specifically, the analysis focuses on online product reviews as a particular form of e-Wom. Consumers who have acquired and used the product generate online reviews and communicate their experiences, evaluations, and opinions about it in online stores, review sites or social networks (Casaló *et al.*, 2009; Park *et al.*, 2007). This paper focuses on the impact of positive online product reviews, which intend to favor and reinforce individuals' preferences. In this way, any persuasive attempt may have assimilation or contrast effects. According to Janssen and Jager (2001), assimilation effects occur when the consumer's goal is to form an accurate judgment of the object. If webroomers combine channels to gain confidence and make the best purchase possible, the positive information of an online product review will be more consistent with this tendency than negative information (Khare *et al.*, 2011).

The information generated by other consumers is regarded as more reliable and relevant than that from the company (Berger, 2014; Park *et al.*, 2007). Consumer recommendations may not only help consumers at the initial stages of the purchase journey by inspiring them and showing new ideas to form initial preferences (Aragoncillo and Orus, 2018), but can also favor the purchase intentions and the choice of the initially considered product. Moreover, the consumer recommendation may help to reinforce the consumer's impression of the target product's adequacy:

H3. For the target product, the presence (vs. absence) of a positive consumer recommendation will have a positive influence on (a) purchase intention, (b) the likelihood of choosing it and (cchoice confidence.

Finally, this research considers the possible differential effects of the consumer recommendation depending on the tie strength between the sender and the receiver (Duhan *et al.*, 1997; Steffes and Burgee, 2009). Tie strength is related to the existing closeness among two individuals (Luarn and Chiu, 2015). In an omnichannel shopping experience, the consumer can receive recommendations coming from complete strangers (e.g. anonymous reviews on a review site) to close friends and relatives (e.g. social networks and chat applications). Previous research shows different e-Wom effects depending on social tie. Koo (2015) finds that positive reviews from people with both strong and weak ties are more influential on attitudes and purchase intentions than those coming from total strangers (no tie). Consumers have also higher purchase intentions when receiving e-Wom from strong ties if they are interdependent consumers, whereas the effect is higher for weak ties when consumers are independent from each other (Wu *et al.*, 2016). Online recommendations from strong ties are rated higher in terms of message credibility and purchasing intention compared to the ones from weak or no ties (Koo, 2016). Thus, it is expected that recommendations coming from friends will have a stronger influence than those coming from anonymous customers:

H4. The effects of the positive consumer recommendation will be stronger when it comes from a strong-tie source than when it comes from a weak-tie source.

4. Study 1

The Study 1 analyzes how the presence of a positive review coming from an online customer influences the subsequent physical interaction with the target product. At the physical store, the differences with respect to a rival alternative are examined.

The study was carried out in one major city in Spain[1]. The sample consisted of 82 undergraduate and graduate students in business studies. Previous studies on omnichannel consumer behavior have used students as a valid sample population (Laroche *et al.*, 2005; Lee and Kim, 2008; Cho and Workman, 2011; Keng *et al.*, 2012). As a consumer segment, students belong to the Millennial generation (Deloitte, 2016), who are highly familiarized with new technologies and use them more frequently in their purchase processes than other segments (Keng *et al.*, 2012). From a methodological point of view, students are relatively homogeneous, specifically in terms of education level and age (Laroche *et al.*, 2005). Thus, controlling for these variables helps to ensure internal validity of the experiment. Analysis of sociodemographic information suggested that the sample had a representative profile of the student population in terms of gender (46 per cent male), age (60 per cent between 18 and 23 years old; 23 per cent between 24 and 29 years old; 17 per cent between 30 and 35 years old), internet use experience (89 per cent had more than five years of use experience) and online purchase experience (73.2 per cent had purchased at least once in the previous 12 months) (MECD, 2016; ONTSI, 2018).

The context of the study was the purchase of a smartphone. Besides the attractiveness of this product category for the demographic sample, both search and experience attributes are important for the evaluation of this kind of products (Gupta and Harris, 2010). Although consumers can obtain information about some product characteristics without physically interacting with it (e.g. memory capacity), a physical experience is required to truly assess its quality (e.g. size, weight, screen resolution) (Ekelund *et al.*, 1995; Viejo-Fernández *et al.*, 2019). The combination of the online and the offline channels seems to be the ideal for consumers to obtain complete information about the product. In fact, smartphones, within the electronics category, are highly purchased by means of webrooming (Google Consumer Barometer, 2015).

The lab experiment consisted of two parts. In the first part (t_1), participants had an online interaction with a pre-selected product. The online product presentation consisted of a list of characteristics and several pictures (Flavián *et al.*, 2016). At this point, the participants in the review condition (between-subjects factorial design) additionally read a positive online review of the product (Appendix). After interacting with the online product presentation for a few minutes, the participants reported the first set of measures. Specifically, on a seven-point Likert basis, participants indicated the likelihood of buying the product (being 1 = not likely at all to 7 = extremely likely). They also reported their level of confidence in the product as the most suitable for the purchase (four items adapted from Petty *et al.*, 2002; Heitmann *et al.*, 2007; $\alpha = 0.93$, 81.90 per cent of explained variance).

In the second part (t_2), participants interacted physically with the product. Besides the product previously considered (target), the participants interacted with a new product (rival) with similar characteristics and appearance. After the physical interaction, the participants indicated their purchase intentions for both products and read that the smartphones would be raffled at the end of the study. The final questions asked participants to choose which one they would take in case of being a winner. Finally, they indicated their degree of choice confidence (4 items adapted from Petty *et al.*, 2002; Heitmann *et al.*, 2007; $\alpha = 0.90$, 76.43 per cent per cent of explained variance).

4.1 Results

Table I shows the means and standard deviations according to the experimental treatments. First, repeated-measures ANOVAs examined changes occurred in purchase intentions from the online interaction to the physical inspection of the target product ($t_2 - t_1$), as well as on the differences between the target and the rival products. The online product review was

included as the between-subjects factor. Supporting *H1*, purchase intention toward the target increased significantly from t_1 to t_2 ($F_{(1, 80)} = 24.256$, $p < 0.001$). However, the effect of the online customer review was not significant ($p = 0.54$), thus rejecting *H3a*. Similarly, the difference in purchase intentions between the products was significant ($F_{(1, 80)} = 4.330$, $p < 0.05$; Table I), supporting *H2a*, but the online review had no effect ($p = 0.65$).

Participants' choice of the target was higher than of the rival (Table I), and the results of a non-parametric binomial test assuming equal distribution among the two options ($p = q = 0.5$) was significant ($p < 0.05$), thus supporting *H2b*. Contrary to *H3b*, participants' choice did not depend on reading a customer review in the previous online interaction ($\chi^2_{(1)} = 0.455$, $p = 0.50$). Finally, the results of a univariate ANOVA showed that choice confidence was higher for the target ($M = 6.16$, SD = 0.77) than for the rival ($M = 5.85$, SD = 1.03); however, *H2c* must be rejected, as this difference was not significant ($p = 0.16$). Moreover, choice confidence was higher if the participants read previously a review than if they did not ($F_{(1, 81)} = 9.000$, $p < 0.01$), regardless of the product chosen ($p = 0.92$). This result supports *H3c*.

The participants' confidence after the online interaction (t_1) was measured to control for the stability of their impression before the physical encounter. The online review had a positive impact on this confidence(t_1) ($t_{(80)} = 2.276$, $p < 0.05$; Table I). We tested the possibility that the online review had an indirect effect on the dependent variables through confidence(t_1). The SPSS macro PROCESS v3.3 was used for the analyses (Hayes, 2018).

Confidence(t_1) had a significant positive effect on purchase intentions toward the target product ($b = 0.657$, SE = 0.17; $t_{(79)} = 3.915$, $p < 0.01$), and the results of a bootstrapping test with 5,000 subsamples for the indirect effect of the online review on purchase intentions through confidence(t_1) was significant, as the zero value was not included in the 95 per cent confidence interval (*effect* = 0.343, *BootSE* = 0.18; 95 per cent CI: [0.046, 0.759]). The same pattern occurred for the participants' choice: confidence(t_1) had a significant effect (*coeff.* = 0.756, SE = 0.27; $z = 2.836$, $p < 0.01$), and the indirect effect of the online review was also significant (*effect* = 0.395, *BootSE* = 0.25; 95 per cent CI: [0.044, 1.019]). Similarly, confidence(t_1) had a significant direct effect on choice confidence ($b = 0.594$, SE = 0.19; $t_{(79)} = 3.190$, $p < 0.01$), and partially mediated the impact of the online review (*effect* = 0.395, *BootSE* = 0.25; 95 per cent CI: [0.044, 1.019]), because the direct effect of the online review remained significant ($b = 0.404$, SE = 0.17; $t_{(79)} = 2.337$, $p < 0.05$).

| Dependent variable | Online Review | | | | | |
| | No | | Yes | | TOTAL | |
	M	SD	M	SD	M	SD
Online interaction (t_1)						
Confidence	5.32	1.14	5.84	0.93	5.60	1.06
Purchase intentions	3.89	1.56	3.84	1.69	3.87	1.62
Physical interaction (t_2)						
Purchase intentions (target)	4.57	1.41	4.71	1.88	4.65	1.67
Purchase intentions (rival)	4.27	1.43	4.24	1.50	4.26	1.46
Choice confidence	5.72	0.95	6.32	0.74	6.05	0.88
Choice (% target)	59.5		66.7		63.4	

Table I.
Descriptive data
(Study 1)

4.2 Discussion

Overall, the results supported *H1* and *H2* regarding the positive effects of webrooming. Purchase intention toward the target product increased after a physical interaction and was higher than for the rival alternative. Also, participants chose the target product more than the rival and held their choice with a higher degree of confidence, although the difference was not statistically significant thus *H2c* is rejected.

However, reading an online review influenced these effects. Although the online review did not directly affect offline purchase intentions and decision, it had a positive influence indirectly through enhancing confidence during the online interaction. This increased level of confidence was carried over to the physical store and affected purchase intentions, choice and choice confidence. Thus, *H3* did not obtain a direct support, but the analyses suggest an indirect effect through confidence(t_1).

The next study seeks to extend and clarify these findings. First, the lack of direct effects of the online review may be because of the fact that consumers discount its value at the physical store. Thus, participants in Study 2 received the recommendation during the physical encounter with the products. As previously stated, the development of mobile technologies allows consumers to reach (and be reached by) other consumers almost anywhere at any time (Okazaki, 2008). They can access user-generated content online when shopping in a retail store via different channels. Thus, webrooming turns into an omnichannel shopping behavior where channels and purchase stages occur simultaneously (Rippé *et al.*, 2017).

Second, the absence of direct effects of the recommendation may also be related to the tie strength between sender and receiver (Duhan *et al.*, 1997). Previous research shows that strong-tie sources can be more influential than weak-tie sources (Koo, 2015; Wu *et al.*, 2016). Taking into account that consumers can receive in-store mobile recommendations from multiple sources, the Study 2 manipulates the tie strength of the consumer recommendation: weak-tie source (anonymous online customer) versus strong-tie source (friend recommendation) (Berger, 2014). Measures about the credibility of the recommendation's source are included with the aim of offering a better understanding of the different recommendations (Ohanian, 1990; Park *et al.*, 2007).

5. Study 2

Participants of Study 2 belonged to the same population as in the Study 1 (n = 88; 47 per cent male, 69 per cent between 18 and 23 years old; 24 per cent between 24 and 29 years old; 7 per cent between 30 and 35 years old; 88 per cent had more than five years of use experience; 78.4 per cent had purchased at least once in the previous 12 months). They were instructed to imagine that they had to buy a gift (i.e. strap bag) for a person important to them. Participants received this instruction to increase their involvement with the task (Darke *et al.*, 2016)[2]. The design of the study consisted of one between-subjects factor with three levels (recommendation: no, customer, friend).

The procedure was similar as in Study 1. All the participants who received the treatment read the online recommendation at the physical encounter with the products (t_2). They were told that the retailer was testing a new mobile app to access additional information about their products (Appendix). Participants in the customer recommendation went to the *customer reviews* option of the app and read a positive review of the target. Participants in the friend recommendation accessed the chat functionality where they saw a simulated conversation with their *best friend*. In this conversation, the participant read that her or his best friend recommended the target product. Measures of confidence in t_1 (α = 0.88, 73.87

per cent of explained variance), purchase intentions, choice and choice confidence ($\alpha = 0.92$, 79.92 per cent of explained variance) were collected in the same way as in Study 1.

The participants who received any of the recommendations answered several questions about it. On a seven-point Likert scale, they reported their perceived trustworthiness (5 items from Ohanian, 1990; $\alpha = 0.90$, 71.59 per cent of explained variance), familiarity with the product type (4 items from Gefen, 2000; $\alpha = 0.92$, 80.93 per cent of explained variance) and the expertise (4 items from Ohanian, 1990; $\alpha = 0.90$, 76.32 per cent of explained variance) of the person who made the recommendation. Independent samples T-tests revealed that participants perceived higher trustworthiness in the friend recommendation ($M = 5.95$, SD = 0.63) than in the customer review ($M = 5.30$, SD = 0.86; $t_{(55)} = 3.255$, $p < 0.01$). On the contrary, they perceived the anonymous customer as more familiarized with the product ($M = 6.16$, SD = 0.67) and more expert in the product category ($M = 5.12$, SD = 1.20) than the friend (familiarity: $M = 4.51$, SD = 1.18; $t_{(55)} = 6.557$, $p < 0.001$; expertise: $M = 3.87$, SD = 1.34; $t_{(55)} = 3.712$, $p < 0.001$). These results ensure that participants perceived the recommendations differently and may help us to explain the effects of each recommendation.

5.1 Results

Table II shows the descriptive data for each condition. Repeated-measures ANCOVAs were carried out for the increase in purchase intentions toward the target product and the difference in purchase intentions between the target and the rival. The experimental treatment was the independent factor, and confidence(t_1) was included as a covariate. Purchase intention toward the target in t_2 was significantly higher than in t_1 ($F_{(1, 84)} = 8.100$, $p < 0.01$), supporting $H1$, and the interaction with the presence recommendation condition was significant ($F_{(2, 84)} = 3.153$, $p < 0.05$). Specifically, the increase for participants who did not receive the recommendation ($\Delta = 0.70$) was lower than for those who read the online customer recommendation ($\Delta = 1.11$); the friend recommendation produced the highest increase ($\Delta = 1.36$). In support of $H2a$, purchase intention toward the target was higher than for the rival ($F_{(1, 84)} = 3.215$, $p < 0.1$), and this effect was qualified by the experimental treatment ($F_{(2, 84)} = 8.959$, $p < 0.01$). Again, the difference was the highest for the participants who received the friend recommendation ($diff. = 2.46$), followed by those who read the customer review ($diff. = 0.78$) and those who received no recommendation ($diff. = 0.64$). Altogether, these results offer support for $H3a$ and $H4$.

Choice of the target was significantly higher than the rival (Table II; non-parametric binomial test $p < 0.001$). $H2b$ is supported. The results of a chi-square test revealed association between choice and the experimental treatment ($\chi^2_{(2)} = 7.057$, $p < 0.05$). The

| | | | Recommendation | | | | | |
| | No | | Customer | | Friend | | TOTAL | |
Dependent variable	M	SD	M	SD	M	SD	M	SD
Online interaction (t_1)								
Confidence	5.40	0.84	5.60	0.85	5.43	0.97	5.47	0.86
Purchase intention	3.65	1.14	3.93	1.57	4.37	1.19	3.98	1.32
Physical interaction (t_2)								
Purchase intention (target)	4.35	1.38	5.04	1.60	5.73	1.23	5.03	1.50
Purchase intention (rival)	3.71	1.42	4.26	1.81	3.27	1.39	3.73	1.57
Choice confidence	5.65	0.82	6.32	0.68	6.53	0.59	6.16	0.80
Choice (% target)	61.3		66.7		90.0		72.7	

Table II.
Descriptive data
(Study 2)

adjusted standardized residuals indicated that only the friend recommendation had significant effect on the participants' choice. Thus, *H3b* is partially supported and *H4* is supported.

Choice confidence for participants who chose the target ($M = 6.42$, SD $= 0.62$) was higher than for those who preferred the rival ($M = 5.47$, SD $= 0.82$; $t_{(86)} = 5.848$, $p < 0.001$). This result supports *H2c*. In addition, participants who received the recommendation were more confident in their choices than those in the control group ($F_{(2, 87)} = 12.899$, $p < 0.001$; Table II). The post-hoc Tukey test showed that the difference between the two recommendations and the control conditions was significant ($ps < 0.01$), whereas the difference between the customer and the friend recommendation was non-significant ($p = 0.506$). Therefore, *H3c* is supported, but data failed to support *H4* for choice confidence.

In Study 1, it was found that confidence(t_1) significantly influenced the dependent variables in t_2. Thus, moderation models were conducted to analyze whether the effects of the recommendations on the dependent variables were contingent on the level of confidence acquired in the previous online interaction (t_1). For the sake of simplicity, the Table III shows the direct effects of confidence(t_1) and the interaction between confidence(t_1) and the online recommendations. Parallel to the findings of Study 1, confidence(t_1) had a significant impact in the offline experience. Moreover, the effect of the presence and type of recommendation on purchase intentions was moderated by the level of confidence(t_1) (Table III). As shown in Figure 1, the effect of the recommendations decreased as the level of confidence(t_1) increased; the customer recommendation had a marginal effect for participants with medium levels of confidence(t_1) ($ps > 0.07$) and for those with high levels of confidence(t_1), this recommendation had no effect ($ps > 0.51$). The effect of the friend recommendation was weaker but remained significant.

Predictor	Coeff	SE	Statistic*	p
Confidence $t_1 \rightarrow$ Purchase intentions toward the target	0.76	0.30	2.543	0.013
Confidence $t_1 \rightarrow$ Increase in purchase intentions	0.70	0.20	3.396	0.001
Confidence $t_1 \rightarrow$ Difference in purchase intentions	0.60	0.40	1.529	0.130
Confidence $t_1 \rightarrow$ Choice	1.58	0.66	2.414	0.016
Confidence $t_1 \rightarrow$ Choice Confidence	0.34	0.15	2.337	0.022
Interaction Effects				
Purchase Intentions toward the target				
Customer recommendation $\times$ Confidence in t_1	−1.28	0.44	−2.919	0.005
Friend recommendation $\times$ Confidence in t_1	−0.93	0.40	−2.321	0.023
Increase in Purchase Intentions				
Customer recommendation $\times$ Confidence in t_1	−1.36	0.30	−4.506	0.000
Friend recommendation $\times$ Confidence in t_1	−0.95	0.27	−3.481	0.001
Difference in Purchase Intentions				
Customer recommendation $\times$ Confidence in t_1	−1.01	0.58	−1.748	0.084
Friend recommendation $\times$ Confidence in t_1	−0.81	0.53	−1.530	0.130
Choice				
Customer recommendation $\times$ Confidence in t_1	−1.19	0.82	−1.451	0.147
Friend recommendation $\times$ Confidence in t_1	−1.18	0.90	−1.305	0.192
Choice Confidence				
Customer recommendation $\times$ Confidence in t_1	0.04	0.21	0.176	0.863
Friend recommendation $\times$ Confidence in t_1	−0.31	0.19	−1.589	0.116

Table III.
Results of
moderation effects
of confidence(t_1)
(Study 2)

Note: *t-statistic is reported for all the variables except for choice (z-statistic calculated in a logistic regression)
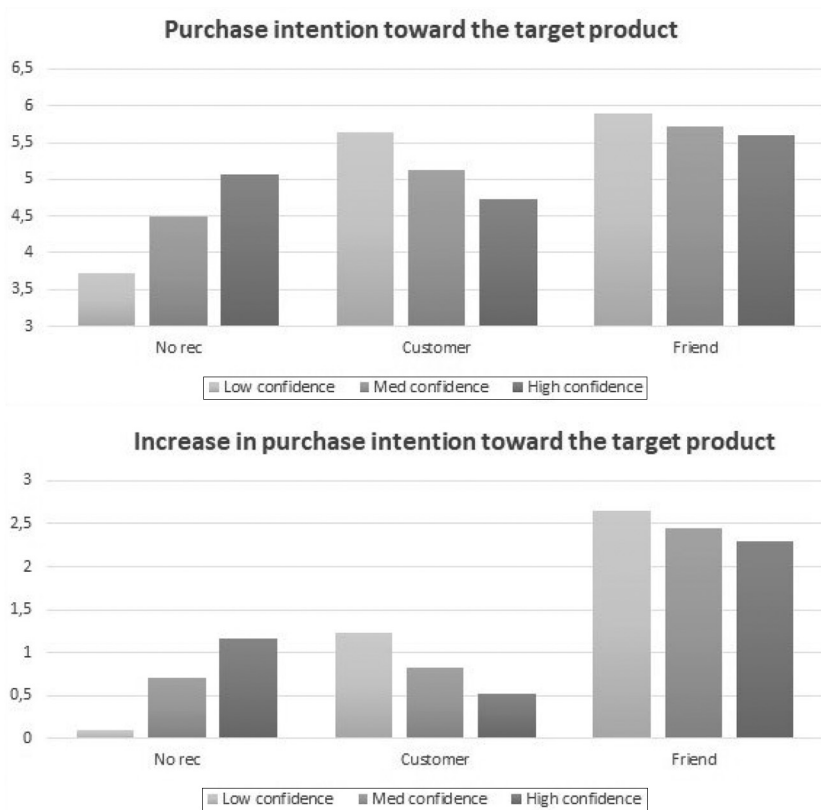
Figure 1.
Interaction effects on
purchase intentions
(Study 2)

5.2 Discussion
The results of Study 2 further support the benefits of webrooming to help consumers form a stable impression of the product and make choices with a high degree of confidence. Purchase intentions, the likelihood of choosing and choice confidence increased for a product acquired through webrooming (support for *H1* and *H2*).

However, online social recommendations and the level of confidence obtained after the online interaction influenced these effects. The recommendation coming from a customer (perceived with a high degree of familiarity and expertise) had a positive influence on purchase intentions toward the target product. However, this effect occurred only for participants with a low confidence acquired previously online. The effect of the friend recommendation was strong and consistent, regardless of the confidence that the participant brought to the store. Thus, support for *H3a H3b* depends on confidence(t_1) and on the social tie of the recommendation source (*H4*). Nevertheless, both recommendations had positive effects on choice confidence (support for *H3c*).

6. Summary and implications
The incorporation of new technologies to the retailing landscape has radically changed the consumers' purchase process, turning it into an omnichannel experience where the borders

between channels fade away and they are used interchangeably during the different stages of the purchase process (Verhoef *et al.*, 2015). Consumers combine virtual and physical channels to gain control and power over the purchase process, and this combination leads them to believe that they are making the right decision (Schul and Mayo, 2003). New technologies also offer ubiquitous access to opinions and recommendations from other consumers (Okazaki, 2008), which may help the consumer to accomplish the task of making the right choice. However, few studies investigate the impact of e-wom on offline purchase decisions of tangible goods in an omnichannel context.

The results of the analysis offer several implications. First, this research replicates previous studies in information processing by showing that the sequential combination of the virtual and physical channels has positive effects on the consumer's behavioral intentions (Daugherty *et al.*, 2008; Keng *et al.*, 2012). This research extends previous findings by analyzing the consumer's actual choice and choice confidence.

The findings show that the preference for a product may be favored when consumers webroom. Consumers form an initial impression of the product online and bring it to the physical store. The online experience gives them a certain degree of confidence for the product considered as the best to satisfy their needs/goals. At the physical store, consumers confirm the information to improve their preferences and the likelihood of choosing this product. Moreover, if that product is eventually chosen, this choice is hold with a high degree of confidence. Retailers can take these findings into account to manage and drive the customers' traffic toward physical stores, offering information that empowers them during the shopping journey. In this way, website design has been acknowledged as an effective tool to provide consumers with useful and diagnostic information by means of timely and accurate information and ease of navigation (Flavián *et al.*, 2009). The outcomes of the online search experience will be incorporated into the physical store experience and may help consumers to improve their decision-making (Dholakia *et al.*, 2010).

Importantly, social recommendations may exert great influences on the omnichannel webrooming behavior. The opinions of other customers of the company, who are unfamiliar to the consumer but familiar with the product, can have different influences depending on the moment of receiving such recommendation. Reading online reviews before the physical interaction can help the consumer to reinforce the confidence in the product. Consumers then carry over this confidence to the physical store which influences their preferences and choice. If consumers read online reviews at the physical store, these recommendations can influence their preferences, especially when they arrive at the physical interaction with a less stable impression of the product.

If the omnichannel company wants to use customer reviews to covertly manage their potential customers, it may embed them in the online product presentation. The review would help the consumers to create individuated information that lead them to believe that they are making the right decision (Zhang *et al.*, 2010). Companies can use several strategies to encourage their customers to post-product reviews on their online channels, such as appealing to their emotional experiences (Serra-Cantallops *et al.*, 2018), offering opportunities for social interactions or giving economic incentives (Hennig-Thurau *et al.*, 2004).

If the company wants to overtly use customer reviews because they can be valuable for consumers, mobile applications can help to improve the potential customers' in-store experience. In fact, companies such as Decathlon (www.decathlon.es/es/) are using other customers' ratings and opinions in their physical stores, together with the technical product information. Recent advances in in-store technology allow retailers to use technological innovations such as virtual fitting rooms, digital signals, tablets or retail apps that may affect

the consumers' satisfaction and improve their shopping experience (Mosquera *et al.*, 2018). Although omnichannel consumers are able to use their mobile phones during the in-store experience, omnichannel retailers may use in-store technologies to incorporate e-Wom information about their products, thus providing more valuable customer experiences. Nevertheless, customer reviews can affect the level of choice confidence. If the omnichannel consumer combines the online and physical channels to make decisions with a high degree of confidence (Flavián *et al.*, 2019), the use of customer reviews reveals as an effective strategy.

In addition, social tie reveals as a powerful element to influence the omnichannel experience. The recommendations from a strong-tie source, such as a friend, help the consumers to reinforce their preferences regardless of the previous online experience. Unless the consumer arrives at the physical store with a strong and stable preference for the product, recommendations from a trustworthy friend can be greatly influential, even though this friend is not physically present at the point of purchase. In sum, the findings show that e-Wom received at the physical store through mobile devices has a positive effect on the consumers' choice confidence. Both omnichannel and traditional retailers could benefit from innovations in mobile technologies to incorporate applications which offer in situ recommendations from other customers, which may influence the consumer's purchase decision process.

7. Limitations and future research

Regarding the limitations of this research, the artificiality of the two lab experiments, in which participants had just one preselected alternative and had to choose between two similar products, needs to be mentioned. In addition, convenience samples of students were used. Future research could test these relationships in a field study, with a wider set of more dissimilar options. Although the use of a homogeneous group of participants guarantees internal validity, it would be interesting to validate these findings with other consumer profiles.

Second, with the aim of keeping the scenarios as realistic as possible, this research has used only positive customer recommendations. In a typical purchase journey, the consumer may consider the visit to the physical store to purchase a product which receives positive feedback, rather than negative, from other customers online. In this way, future studies could directly manipulate the valence of the recommendations in more complex designs, to examine the relative impact of each recommendation in the consumers' omnichannel purchase process. Moreover, future research may include the need for assistance to account for the consumers' desire to receive external recommendations and gather the assimilative or contrastive response toward them.

Third, this research has assumed that consumers carry out webrooming shopping as a risk reduction strategy, and that the consumer exerts cognitive and/or physical effort to make a decision with a high degree of confidence. However, this research has not tested this assumption. In this way, involvement in a decision process is an important moderator in the customer experience management (Puccinelli *et al.*, 2009). Future research could analyze how the combination of the online and offline channels, and the influence of online recommendations, is affected by the degree of consumers' involvement.

Notes

1 Note that all the instructions, materials and questionnaires used in the empirical studies were in Spanish. All the information has been translated into English for the purpose of this paper.

2 At the end of the experiment, participants reported on a seven-point Likert basis their involvement with the task (5 items adapted from Daugherty *et al.*, 2008; $\alpha = 0.84$, 61.36 per cent of explained variance). The mean value ($M = 5.25$, SD $= 0.79$) was significantly higher than the midpoint of the scale ($t_{(87)} = 14.716$, $p < 0.001$), ensuring a certain degree of involvement.

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Appendix

Customer review (Study 1)

Suggestions from the specialized literature were followed to compensate for the lack of volume and to create an adequate online product review (Park *et al.*, 2007).

Our customers' rating of this product is 4/5 stars.

This review has been rated as **very useful** by our customers.

The XXX phone is a good smartphone. It works fine. It has a simple and elegant design. It has a wide screen of 3.2 inches which allows me to easily natigate the phone and responds well to touch. It has full Qwerty keyboard that is easy to use, although somewhat complicated sliding the screen. I would stress the high-quality camera with 5 megapixels, with an image resolution of 2584 × 1938, which also records movies with a considerable quality. It also has a GPS with maps application integrated, which is very useful. As for the battery, the duration is reasonable, much like other smartphones, 3 days with normal use

Published by **Anonymous** 22 days ago.

Information mobile app (Study 2)

Welcome to our shopping app!!

Besides of shopping, here you can search and share information about our products.

Scan the QR code of the product. Push the code to scan!

Customer recommnedation (Study 2)

Our customers' reviews!

Product: BOLSA RETRO BOWLING (Code: C100BRB).

User: Anonymous.

Review: This bolsa bowling is very convenient. Besides of using it for going to class, I also use for going to the gym or to carry some luggage for a short trip. I strongly recommend it!

Friend recommendation (Study 2)

Simulation of a WhatsApp conversation with the participant (P) and his/her Best Friend (BF): (the participants sends a link to the product information)

- *P*: What do you think of this bag for (this person important to you)?
- *BF*: Hey!! This app is very cool! Let me see [. . .] I'll tell you now.
- *BF*: For what I see, this bolsa bowling is really nice for a gift.
- *BF*: It seems good to go to class, the gym, even for a short trip.
- *BF*: I like this one more than the other [. . .] But it's up to you!; -)

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