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Understanding Mobile Showrooming Based on a Technology Acceptance and Use Model

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Abstract: Showrooming is an increasingly popular behaviour in the omnichannel era. The purpose of this paper is to understand the consumer intention to showroom through a technology acceptance and use model based on UTAUT2 that includes value consciousness and purchase involvement as drivers of showrooming intention and mobile dependency as a moderator. Data collected via a survey answered by 659 showroomers were analysed using Partial Least Squares (PLS). Results show that value consciousness, purchase involvement, hedonic motivation and social influence explain mobile showrooming intention and mobile dependency moderates the impact of value consciousness on mobile showrooming intention. Our results offer suggestions for multichannel retailers to deal with showroomers visiting their stores to try to turn them into buyers.

Keywords: showrooming; smartphone; UTAUT2; value consciousness; purchase involvement; mobile dependence



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1. Introduction

The transition to omnichannel has contributed to blurring the frontiers between channels [1], allowing shoppers to interact with sellers through several channels and touchpoints during their shopping journey [2]. Retailers have increased channel integration, facilitating consumer cross-channel behaviours such as webrooming and showrooming [3,4]. Webrooming, i.e., search online and then purchase in-store, is the most common behaviour [5]; however, as channel synergies build up, showrooming, i.e., examine products in-store and then purchase online, is growing steadily [6]. According to iVend Retail [7] 91.4% of consumers globally exhibit the behaviour of webrooming, while 83.8% engage in showrooming.

The increasing possession of smartphones contributes to showrooming growth as customers search on their mobile for the best offer while they are in the store [8,9]. Of shoppers, 60.1% use their smartphones when visiting physical stores, mostly to search for the best prices [7]. As a result, showrooming has become a severe threat to store-based retailers that see their financial performance impacted negatively by this behaviour [10]. This is because most showroomers use a high-service retailer to get information about a product that they end up buying online from a competing retailer offering lower prices [11].

Due to the strong impact of showrooming, research interest is quickly developing. Initial research concern focused on retailer tactics to combat the adverse effects of showrooming on sales and salesperson motivation [9,10,12]. A growing research line investigates showrooming from the consumer perspective (e.g., [13–15]). Despite the increased use of smartphones to engage in showrooming, research focusing on mobile showrooming's specific drivers is particularly scarce. By addressing this research gap, this paper contributes to fill the need for further knowledge of the drivers of mobile-assisted showrooming [2,11].

Mobile devices have significant implications for consumer behaviour that have not been investigated. To this end, technology acceptance and use models that integrate

users' perceptions about a new technological system seem to be relevant [16,17]. As reported by Sahu et al. (2021) [18], a few studies have analysed showrooming using models such as TAM (Technology Acceptance Model), TPB (Theory of Planned Behaviour) or UTAUT (Unified Theory of Acceptance and Use of Technology); however, to the best of our knowledge, mobile showrooming has not been studied applying a UTAUT2 model. This model seems appropriate since it includes utilitarian and hedonic motivations for the use of smartphones, however, it needs to be further adapted to the context of shopping and mobile showrooming.

This paper aims to explain mobile showrooming intention using an extended UTAUT2 model that integrates purchase involvement and consumer value consciousness as drivers and mobile dependency as a moderating factor. This contributes to understanding mobile showrooming by including two types of drivers, those related to the mobile device and those related to the purchase context.

This paper is structured as follows. The following section revises the relevant literature on showrooming and then the theoretical framework and hypotheses are presented. The methodology section details the procedure of data collection, which is followed by the analysis of results. The last part includes the conclusions, implications, the study's limitations and future research lines.

2. Literature Review

The transition from multi- to omni-channel management implies offering customers a higher number of channels—where mobile plays a key role—that are coordinated and integrated to provide customers with a seamless shopping experience [16,19]. Goraya et al. (2020) [4] demonstrate that increased channel integration in the omnichannel context drives cross-shopping behaviours such as webrooming and showrooming. The challenge for researchers is to understand how consumers combine offline and online channels across different purchase stages [19,20].

Webrooming and showrooming are two manifestations of “research shopping”, a term coined by Verhoef et al. (2007) [21] that refers to searching channel A and purchasing in channel B. Despite this common base, showrooming and webrooming build on different consumer motivations [14,22] and impact retailers in quite different ways, suggesting the need to analyse these two behaviours separately.

Online channels have advantages to get information quickly and conveniently, allowing to compare several competing offers instantly; however, they could present some drawbacks in the purchase stage related to online shopping perceived risks and not allowing immediate possession. As a result, webrooming grew very quickly [21], being yet the most frequent behaviour [5]; it combines the benefits of online channels to gather and compare information and those of offline channels to reduce purchase risks and obtain immediate possession. Like a mirror of webrooming, showrooming involves searching for product information in offline channels and purchasing online [19]. For the showroomer, offline channels in the search stage offer the benefits of examining the product physically and getting customer service from sales personnel [23], while online channels would be chosen to purchase because of price advantages or wider assortments [14].

As drivers of showrooming, the literature has contemplated several variables. Those related to the individual are the most frequently analysed. Price consciousness and the goal of saving money have been confirmed to drive showrooming [11,13,24]. Some papers take the perspective of analysing the perceived benefits and costs of showrooming [8,23]. Besides price benefits, the search for convenience in the shopping process is a relevant consumer motivation for showrooming [14,23]. More recent papers analyse the relationship of showrooming with smart shopping perceptions [5], sensory stimulation in the stores [15], or retailer loyalty [11].

Smartphones are increasingly used in the shopping process, contributing to the complexity of customer journeys [20]. The mobile channel has specific attributes that set it apart from the PC channel [25]. Ubiquity is a central property of the smartphone that

strongly affects the shopping process as it gives the consumer unrestricted access to the Internet. Moreover, connectivity, which is further enhanced by 4G networks and in-store free-wifi, allows customers to control the shopping process by accessing other information sources [26]. Furthermore, geo-localisation technologies involving smartphones provide a local dimension to shopping [15]. Due to these properties, mobile channels contribute to the convergence of online and offline channels as they allow unique synergies between the physical store and the online channel [27].

3. Research Model and Hypotheses

Our research model is based on UTAUT2 [28], which is an evolution from the original UTAUT model [29] that integrates seven variables as predictors of technology acceptance and use: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price/value, and habit. As Venkatesh et al. (2012) [28] suggest, UTAUT2 needs to be tested in different technologies, identifying the factors that make it applicable to a different consumer technology context. Accordingly, our model aims to tailor UTAUT2 to a consumer shopping technology use context, as the original model was designed for workplace technology. Bearing in mind that we do not seek to explain the mere use of the smartphone but showrooming behaviour using a smartphone, we add three new variables to UTAUT2 to use it in the mobile showrooming context: purchase involvement, value-consciousness, and mobile dependency (see Figure 1).

By adding purchase involvement, we integrate a situational factor that refers to the specific context of using mobile technology for showrooming. Verhoef et al. (2007) [21] also suggested that the level of involvement and task requirements could affect research shopping mechanisms for specific purchases. The contextual adaptation suggested by Venkatesh et al. (2012) [28] is further accomplished by the consideration of value-consciousness and mobile dependency. In contrast to the price/value factor in the original UTUAT2, which refers to the monetary costs of using the technology related to its perceived benefits. This variable was not included in our model since we are trying to explain mobile-assisted showrooming, whose monetary cost is not explicit, but it is included in the costs of owning a smartphone for other purposes. In contrast, we include a construct with a similar meaning but related to shopping behaviour. Value-consciousness is a consumer trait related to finding a good trade-off between price and quality. Price consciousness has been tested as a driver of showrooming by quite a few papers [30], but value-consciousness, to the best of our knowledge, has not been assessed. Analysing value consciousness seems relevant as the qualitative study of Kokho Sit et al. (2018) [31] suggested that both price and non-price factors could drive showrooming behaviour. The original UTAUT2 included the habit of using the technology as a direct driver; keeping this same variable would mean to measure the habit of mobile showrooming, which could be misleading in the context of non-routine purchases. We believe a more intense use of the mobile would not drive more purchases but would affect the relationships of other variables in the model, that is, it would be a moderator. Considering that dependency is a psychological state that develops from habit but becomes a soft addiction [32], mobile dependency is added into the model as a moderator of the relationship between value-consciousness and mobile showrooming intention. The increased use of smartphones and the possibility of using them in-store is believed to have fostered showrooming [9]. Our model attempts to analyse the role of being more dependent on the mobile device in the relevance of value consciousness on showrooming intention.

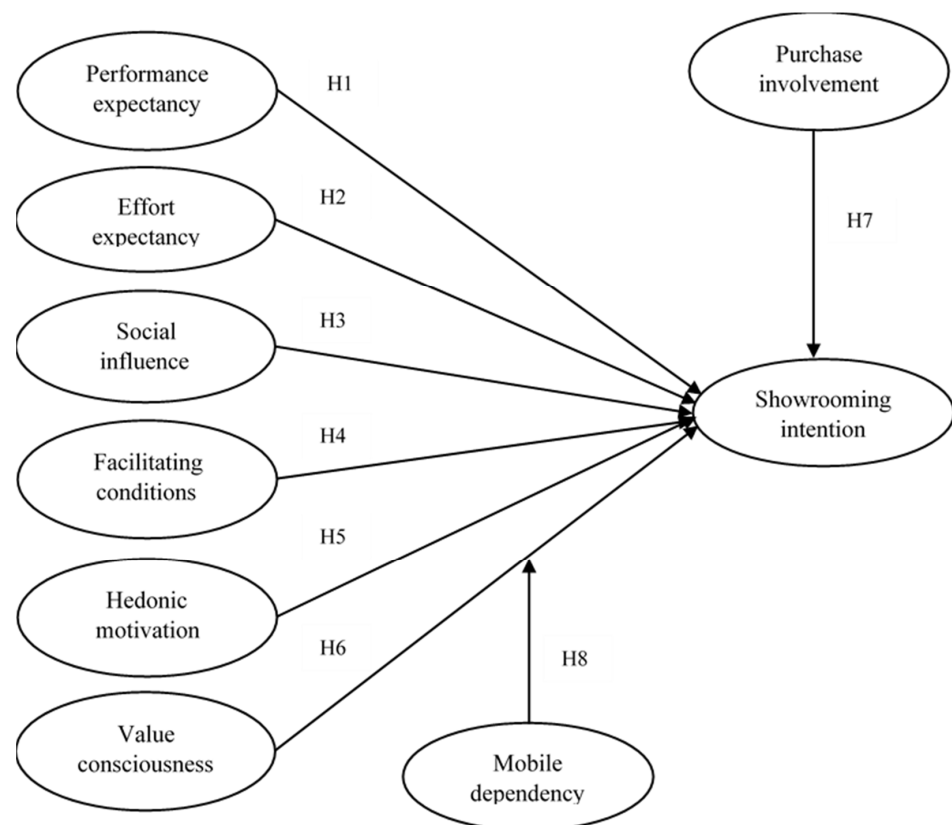


Figure 1. Research model on mobile showroaming.

3.1. Performance Expectancy

The UTAUT model suggested by Venkatesh et al. (2003) [29] included performance expectancy as a variable that captures the functionality of technology to achieve the desired outcomes of the task in which it is used. This construct has its roots in the usefulness variable of TAM [33], in the concept of extrinsic motivation [34], and the comparative advantage considered in the innovation diffusion theory [35]. It has consistently been shown to strongly influence the intention to adopt or use a technology [28]. The studies trying to explain the use of mobile devices for shopping have confirmed the predictor power of performance expectancy [36].

Performance expectancy in the mobile showroaming context would capture the perceived usefulness of the smartphone in a shopping process that includes a visit to a physical retailer. As a shopping process is typically initiated to obtain specific outcomes, the usefulness of the technological device employed to shop would play an important role [37]. Furthermore, compared to e-commerce, m-commerce allows users to complete their tasks using a wireless connection, acting as an external reward to use smartphones for shopping [38]. The role of performance expectancy in predicting behavioural intentions has been confirmed as a driver of purchase intentions in omnichannel stores [16]. Thus, mobile showroaming intention would increase as the shopper perceives that using the smartphone contributes to achieving the goals of the shopping journey easily. Thus, we formulate our first hypothesis.

Hypothesis 1 (H1). Performance expectancy positively influences mobile showroaming intention.

3.2. Effort Expectancy

Effort expectancy is defined as the extent to which consumers believe technology is easy to use [29], in close similarity with the perceived ease of use in TAM [33]. Research

revealed that perceived ease of use is not only a strong predictor of mobile technology adoption but it also affects its usage continuance [37]. As customers typically use the smartphone without assistance, ease of use would influence the intention to showroom using the mobile device. Furthermore, Verhoef et al. (2007) [21] found that perceived attributes of the channels related to search and purchase efforts explain the combined use of online and offline channels for search and purchase. Effort expectancy has been demonstrated to be a strong predictor of purchasing intentions in an omnichannel context [16]. Moreover, there is evidence that mobile shopping's ease of use positively influences mobile shopping intention [39]. Based on the above arguments, we state the following hypothesis.

Hypothesis 2 (H2). Effort expectancy positively influences mobile showrooming intention.

3.3. Social Influence

Social influence captures the extent to which a user is influenced by social norms to use a technological system [29,40]. Social influence in the context of m-commerce was identified as a key variable for predicting m-commerce intention [41,42]. The usage and adoption of mobile devices are very sensitive to social influence, since they are present in interactions in social environments with friends and family [43]. Shoppers receive social influence as they observe, perceive or anticipate the decisions made by others using the smartphone [44]. Furthermore, when using a smartphone for shopping, users are significantly exposed to peer influence when interacting in digital social networks [45]. Based on the theory of planned behaviour, some studies have proved the social influence of subjective norms in channel switching intentions [46] and showrooming [47]. Thus, when a consumer is affected by his/her social network to use the smartphone for shopping, his mobile showrooming intention would be higher.

Hypothesis 3 (H3). Social influence positively influences mobile showrooming intention.

3.4. Facilitating Conditions

Facilitating conditions refer to "the degree to which an individual believes that an organisational and technical infrastructure exists to support use of the system" [29] (p. 453). They provide the external resources required to easily achieve the performance of a particular behaviour [40], thus in showrooming behaviours the use of the smartphone can add convenience to the shopping process. Consumers may perceive different levels of facilitating conditions to use a smartphone depending on technology generations, mobile devices' features and network carriers, which, in turn, will affect the intentions to use the device [29]. Facilitating conditions have a positive influence on the intention to use a smartphone for shopping [43,48,49]. Extending these findings to a showrooming context, we believe that facilitating conditions related to the use of the smartphone for shopping will influence mobile showrooming intention. Thus, we posit:

Hypothesis 4 (H4). Facilitating conditions positively influence mobile showrooming intention.

3.5. Hedonic Motivation

Literature on shopper behaviour holds that shopping provides both utilitarian and hedonic shopping value [50]. These motivations are still valid in online and mobile shopping environments [51]. In these contexts, hedonic motivation captures the fun, enjoyment and entertainment derived from technology use [28]. In a study focused on explaining mobile user engagement, Kim et al. (2013) [52] found that hedonic motivation, integrating the fun and excitement of using the mobile, explained consumer engagement with smartphone use. Extending this argument to the shopping context, it could be expected that a consumer who enjoys using a smartphone will be more engaged in using this device and, therefore, more likely to use the mobile for shopping. Applying the

UTAUT2 model to explain mobile commerce intention, Madan and Yadav (2018) and Shaw and Sergueeva (2019) [53,54] concluded that hedonic motivation was a strong determinant of consumers' m-commerce intentions. Shoppers with high hedonic motivation tend to like shopping and are willing to invest more time searching and purchasing across channels [55]. Those consumers who enjoy shopping through the smartphone will be more likely to use the device throughout the shopping process and are more likely to engage in mobile showrooming. Accordingly:

Hypothesis 5 (H5). Hedonic motivation positively influences mobile showrooming intention.

3.6. Value Consciousness

Showrooming has consistently been related to the motivation of finding lower prices online [5]. The literature has confirmed that price-consciousness is an individual psychographic factor that positively affects the attitude and intentions of showrooming [30,56]. In a qualitative study, Fiestas and Tuzovic (2021) [2] argued that getting the best value is a benefit sought by showroomers. Value-consciousness refers to a concern for paying a reduced price, subject to some level of quality [57]. A value-conscious consumer would tend to be a smart shopper that pays attention not only to price but also to quality [58]. The deep concern with the benefit–cost ratio would take value-conscious individuals to put more effort into the search stage to obtain the best value [39]. Likewise, it can also be expected that value-conscious shoppers would be more likely to visit a physical store to gather product information before making the decision to purchase online finally. Although the influence of value consciousness on showrooming has not been analysed, we find additional support to our hypothesis in the findings of Gensler et al. (2017) [23] related to the effects of perceived gains in quality and price perceptions by showrooming behaviour.

Hypothesis 6 (H6). Value consciousness positively influences mobile showrooming intention.

3.7. Purchase Involvement

Involvement refers to an individual's motivation to process information about an issue [59]. In turn, a highly involved individual would not bother to put more mental and physical effort into the purchasing process [60]. Consumer involvement may refer to the products or the purchase decision. A higher product involvement will lead the consumer to analyse in more detail product attributes and brand differences, whereas a higher purchase involvement would lead the consumer to search for more information and visit more shops [61]. Thus, purchase involvement captures the relevance of the purchase decision based on the consumer's inherent needs, values, and interests [61]. In a high involvement purchase, the shopper would undertake a careful decision process where greater attention is put on information search before buying [62]. Flavián et al. (2020) [5] argue that combining channels during the purchase process (webrooming and showrooming) leads consumers to smart shopping perceptions. To achieve the right outcome of the shopping process, showroomers may visit a store to collect additional information before buying online [13,63].

Hypothesis 7 (H7). Purchase involvement positively influences mobile showrooming intention.

3.8. Mobile Dependency as a Moderator of the Relationship between Value Consciousness and Mobile Showrooming Intention

Consumers become dependent on their smartphones when they regard them as a necessity, being constantly engaged in their use and unwilling to part from them [64]. Mobile dependency would be related to the consumer desire to be connected continuously [65]. Internet dependency has been shown to affect purchase intentions [66]. Consumers in-

creasingly use smartphones in the information search phase to compare prices in online stores and physical stores when using, for example, mobile apps that allow barcode or QR code scanning [67]. The smartphone enables not only price comparison but also access to detailed product information and user-generated reviews [68]. The findings of Daurer et al. (2015) [67] show that smartphones are used to compare price and product quality, suggesting the importance of the mobile search for value-conscious consumers. Thus, we expect that when consumers are more mobile dependent, the effect of value consciousness on mobile showrooming intention is higher as they will be more likely to access price and product information online.

Hypothesis 8 (H8). Mobile dependency strengthens the relationship between value consciousness and mobile showrooming intention.

4. Methodology

To test the research model depicted in Figure 1, data were collected via an online survey managed by a professional market research firm in Spain. Respondents had to be over eighteen and had to have bought a product through a smartphone after visiting a physical store to get information about the product; that is, our population was defined as mobile showroomers. The final valid sample was comprised of 659 individuals, and it had a balanced composition regarding age, gender and education. This sample already excludes responses with missing data or unfinished questionnaires. Only six outliers were identified and eliminated from the original sample. The final sample size is considered appropriate given its balanced composition and the quality controls applied by the professional market research firm. Thus, the sample can be considered representative of the population to be analysed. Thus, 49.6% of the sample were women, and 50.4% were men; regarding age, 31% were between 23 and 35 years old, 48.6% between 36 and 55 and 13.1% between 56 and 65; finally, 58.1% of the respondents had a university degree.

The scales to measure the constructs of the research model were taken from literature and, if necessary, adapted to the current topic (see Appendix A). All the scales were 7-point multi-item scales and were measured as reflective constructs, as the original authors suggest. A pretest checked that they were adequately adapted and understood. Appendix A shows the mean values and standard deviations for each item.

Partial Least Squares Modelling (PLS-SEM) through Smart PLS 3.3.3 software was chosen to test the research model. This approach is suitable considering the predictive nature of the study [69]. Furthermore, it can simultaneously test the measurement model (i.e., assess the psychometric properties of the scales) and the structural model (i.e., test the hypotheses).

5. Results

The first step was the evaluation of the measurement model (see Table 1). The confirmatory factor analysis showed that, for all the items, the standardised loading on its respective factor was significant and higher than 0.7 [70]. For each construct, the Cronbach's alpha value surpassed the threshold of 0.7, which is considered acceptable [71]. Composite reliability (CR) and average variance extracted (AVE) reached the values that the literature suggests as the minimum threshold (0.8 and 0.6, respectively) [72].

Table 1. Construct reliability and validity.

Construct	Loading	<i>t</i>	Cronbach's Alpha	Composite Reliability	AVE
Performance expectancy			0.871	0.921	0.795
PE1	0.861	51.444			
PE2	0.899	74.559			
PE3	0.914	93.209			
Effort expectancy			0.875	0.923	0.800
EE1	0.858	38.407			
EE2	0.923	87.642			
EE3	0.901	67.400			
Social influence			0.892	0.931	0.818
SI1	0.881	12.099			
SI2	0.947	15.455			
SI3	0.884	12.852			
Facilitating conditions			0.834	0.889	0.667
FC1	0.796	36.655			
FC2	0.831	50.560			
FC3	0.851	45.189			
FC4	0.787	33.278			
Hedonic motivation			0.917	0.947	0.857
HM1	0.910	81.327			
HM2	0.941	152.866			
HM3	0.925	68.908			
Value consciousness			0.861	0.905	0.705
VC1	0.840	37.613			
VC2	0.815	32.490			
VC3	0.836	39.487			
VC4	0.867	66.090			
Purchase involvement			0.876	0.923	0.801
PI1	0.880	58.805			
PI2	0.898	59.262			
PI3	0.906	100.833			
Mobile show-rooming intention			0.860	0.915	0.782
MSI1	0.848	34.548			
MSI2	0.891	82.858			
MSI3	0.912	121.304			
Mobile dependency			0.851	0.899	0.691
MD1	0.757	30.147			
MD2	0.853	48.329			
MD3	0.885	79.859			
MD4	0.825	44.197			

AVE = Average variance extracted.

Discriminant validity was evidenced using two criteria. First, we observed that the square root of AVE for every construct exceeded the correlation among other constructs [70]. On the other hand, we checked that the Heterotrait–Monotrait (HTMT) ratios between constructs were lower than 0.90 [73] (see Table 2).

Table 2. Discriminant validity.

	PE	EE	SI	FC	HM	VC	PI	MD	MSI
PE	0.892	0.540	0.227	0.704	0.717	0.417	0.347	0.631	0.432
EE	0.618	0.894	0.093	0.567	0.534	0.517	0.316	0.435	0.351
SI	0.248	0.096	0.904	0.185	0.337	−0.117	0.051	0.224	0.102
FC	0.828	0.658	0.245	0.817	0.668	0.524	0.386	0.646	0.499
HM	0.803	0.594	0.371	0.768	0.926	0.295	0.374	0.585	0.398
VC	0.478	0.595	0.142	0.605	0.329	0.840	0.442	0.393	0.618
PI	0.395	0.360	0.067	0.446	0.413	0.507	0.895	0.321	0.427
MD	0.727	0.489	0.280	0.756	0.660	0.435	0.361	0.831	0.434
MSI	0.498	0.404	0.107	0.584	0.445	0.718	0.490	0.498	0.884

Note: FC = facilitating conditions, SI = Social influence, HM = Hedonic motivation, PI = Purchase involvement, EE = Effort expectancy, PE = Performance expectancy, VC = Value consciousness, MSI = Mobile showrooming intention. The diagonal values in bold indicate the square root of the average variance extracted (AVE). The scores below the diagonal indicate the heterotrait–monotrait (HTMT) ratio. The scores above the diagonal indicate inter-construct correlations.

Additionally, Harman’s single-factor test was applied to check common method bias [74]. With that purpose, exploratory factor analysis was performed and the unrotated factor solution examined; five factors with an eigenvalue greater than 1 emerged, accounting altogether for 69.37% of the variance, and the first factor for just 39.70%. Those results suggested that the common method variance, if existed, was not a prevalent issue.

The second step was the assessment of the structural model (see Table 3) for hypothesis testing. At this stage, collinearity was initially examined to make sure that it would not influence the results. In all cases, the variance inflation factor (VIF) values were lower than 3 (ranging between 1.213 and 2.841), which is considered an ideal threshold and suggests no collinearity issues [75]. Following Hair et al.’s (2017) [73] suggestion, we performed bootstrapping with 5000 random samples using the replacement method to generate standard errors and t-statistic values. The R2 value shows the power of the model to explain showrooming intention. It was 0.473, surpassing the minimum threshold of 0.10 [76]. Additionally, using blindfolding, Q2 was calculated to be 0.362, which being higher than 0, supported the model predictive capability [75]. In fact, it can be considered to have high predictive relevance, as the Q2 value is higher than 0.35 [77].

Table 3. Hypotheses testing.

		Main Effects Only		Main and Moderating Effects	
		β	t-Value	β	t-Value
H1	Performance expectancy -> Mobile showrooming intention	0.027	0.454 ^{ns}	0.011	0.171 ^{ns}
H2	Effort expectancy -> Mobile showrooming intention	−0.121	2.560 *	−0.105	2.399 *
H3	Social influence -> Mobile showrooming intention	0.089	2.908 **	0.094	2.611 **
H4	Facilitating conditions -> Showrooming intention	0.085	1.522 ^{ns}	0.086	1.540 ^{ns}
H5	Hedonic motivation -> Mobile showrooming intention	0.104	2.017 *	0.106	2.094 *
H6	Value consciousness -> Mobile showrooming intention	0.514	10.587 ***	0.498	9.497 ***
H7	Purchase involvement -> Mobile showrooming intention	0.123	3.133 **	0.132	3.480 ***
H7	Mobile dependency-> Mobile showrooming intention	0.091	1.820 ^{ns}	0.090	1.946 ^{ns}
H8	Value consciousness * Mobile dependency -> Mobile showrooming intention			−0.074	2.024 *
Mobile showrooming intention			R ² : 0.473 Q ² : 0.362		R ² : 0.480 Q ² : 0.364

^{ns} not significant; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

For testing the hypotheses regarding the drivers of mobile showrooming intention, the significance of each path coefficient was considered. Results presented in Table 3 reveal that, initially, five hypotheses are supported. Value consciousness (H6) appears to be the most influential antecedent of showrooming intention ($\beta = 0.514$), followed by purchase involvement (H7, $\beta = 0.123$), hedonic motivation (H5, $\beta = 0.104$), and social influence

(H3, $\beta = 0.089$). The analysis shows that performance expectancy (H1) and facilitating conditions (H4) do not significantly influence mobile showrooming intention. In contrast, effort expectancy (H2) affects mobile showrooming in the opposite direction to the one hypothesised ($\beta = -0.121$). It was surprising that the relationship between effort expectancy and mobile showrooming intention was negative, whereas the correlation between both constructs was positive (see Table 2). That could suggest a suppression effect, e.g., value consciousness increased the regression coefficient between effort expectancy and mobile showrooming intention when included in the equation [78]. Following MacKinnon et al.'s (2000) [79] procedure, value consciousness was identified as a suppressor variable. When value consciousness is eliminated from the model, the predictive capacity of the model is reduced ($Q^2 = 0.246$), and the influence of effort expectancy on mobile showrooming intention becomes positive although not significant ($\beta = 0.041$; t -value = 0.755, sig. >0.05). Accordingly, we reject H2 as effort expectancy does not influence the dependent variable.

Finally, we tested the moderating effect of mobile dependency on the relationship between value consciousness and mobile showrooming intention. Following Hair et al.'s (2019) [80] suggestion to moderator analysis, the two-stage approach was used, as it outperforms all other methods. We first calculated the main effects of the PLS path model to obtain construct scores of value consciousness (independent variable) and mobile dependency (moderator variable), and then run the interaction terms and the latent variable scores for value consciousness and mobile dependency on the latent variable scores.

Table 3 shows that mobile dependency attenuates the relationship between value consciousness and mobile showrooming intention (H8, $\beta = -0.074$), which does not allow to accept H8, as the effect is in the opposite direction to the one expected. Although we only hypothesised a moderating effect of mobile dependency and not a direct effect, the two-stage approach results also allow observing that such direct effect is non-significant.

6. Discussion and Conclusions

The current omnichannel context provides customers with multiple channels and touchpoints that increase the complexity of the customer journey. Cross-channel behaviours such as webrooming and showrooming have become popular. Specifically, showrooming appears as a threat to store-based retailers, as showroomers visit the physical store to gather information on the product they will buy online, probably from a competing retailer [10,11]. Considering the relevant role smartphones play in showrooming [2,5,9], this paper focused on identifying mobile showrooming intention's specific drivers. With that purpose, a modified UTAUT2 model is employed to capture the importance of smartphones as technology in mobile showrooming intention; the model is extended by adding purchase involvement and consumer value consciousness to offer a broader understanding of the phenomenon with the addition of situational and individual drivers. Finally, mobile dependency is analysed as a moderating factor.

From a theoretical perspective, our research contributes to the existing omnichannel literature in three ways. First, by applying UTAUT2 to explain showrooming intention; second, by focusing on mobile showrooming, as most of the existing research does not refer to the specific implications of mobile devices. Third, by expanding UTAUT2 with situational variables (purchase involvement) and personality traits and characteristics (value consciousness and mobile dependency), giving a fuller picture of the variables influencing mobile showrooming intention.

Four main conclusions are derived from our study. First, the relevant role of smartphones as a device to perform showrooming behaviours. From the five variables analysed of the UTAUT2 model, our results do not support the role of three of them, appearing as non-significant drivers. According to our data, performance expectancy, effort expectancy and facilitating conditions of the smartphone as a shopping device do not play any role in mobile showrooming intention. These results could suggest that mobile showroomers are familiar with using the device. Therefore, the utilitarian variables related to ease of use, usefulness and convenience of the smartphone are not driving them to participate in

mobile showrooming. These results are consistent with Verkijika (2018) [81] in the mobile commerce applications context, who did not find a significant effect of effort expectancy or performance expectancy. Several recent studies have also supported the lack of relevance of effort expectancy in the intention to adopt specific technologies such as mobile payment [82], social networks [83], or Big Data services [84]. Our results suggest that the only drivers of the original UTAUT2 model that influence mobile showrooming intention are hedonic motivation followed by social influence. These results align with those in the m-commerce context [41,42,53,54,81].

The second conclusion refers to the role that value consciousness plays in mobile showrooming intention. Among the seven variables analysed, value consciousness is the one that exerts the most substantial influence. Value-conscious individuals are smart shoppers [58] that put great effort into the search stage looking for the best value [39] and take less risk in their decision making [85]. Consistently, they tend to visit the store and purchase online to achieve the best benefit–cost ratio. This reasoning leads to the third conclusion, which shows the relevance of the purchase involvement in the intention of carrying out mobile showrooming. A high purchase involvement pushes the individual to put extra effort in the search stage [62] and combine channels to feel like a smarter shopper [5], resulting in higher mobile showrooming intention.

The last conclusion applies to the relationship of the individual with the smartphone. Although mobile dependency moderates the relationship between value consciousness and mobile showrooming intention, the moderation effect is contrary to what it was expected. The stronger the mobile dependency, the weaker the relationship between value consciousness and mobile showrooming intention, i.e., it does not strengthen but attenuates the relationship. This unexpected influence of mobile dependency is in line with the results of other studies that also expected a positive impact of this moderating variable [86]. Although more research is needed to understand and justify the sign of this moderating effect, a possible explanation suggests that those individuals who are highly dependent on their smartphones are predisposed to use them for many different tasks [64]; thus, it could be the habit or dependence on the device what motivates its use for purchasing online, and not the interest of looking for the best benefit–cost ratio once visited the store.

6.1. Practical Implications

The findings of this study suggest actions that multichannel retailers can implement to deal with mobile showroomers visiting their physical stores. First of all, showrooming is strongly linked to the increased use of smartphones that allow hyper-connectivity and facilitate cross-shopping behaviours. To address the challenges of mobile showrooming, retailers should embrace omnichannel practices and prioritise the mobile channel and smartphones applications. Instead of rejecting showroomers in the stores, retailers should implement tactics to persuade them to buy in the physical store, or drive those customers with a clear preference towards online purchase to do it from their online store instead of the competitor's.

More specifically, to take advantage of the impact of hedonic motivation on mobile showrooming intention, retailers should promote mobile marketing actions that engage store patrons through fun and entertainment. Retailers should improve the in-store shopping experience through an engaging environment where the smartphone plays a relevant role. Through QR codes, location-based technologies such as i-beacons, or virtual reality headsets, the retailer could offer a richer experience to those who enjoy mobile shopping. Based on the type of product, extra valuable information on the product, cross-selling and up-selling proposals, or customised communications, could be activated in the store to drive mobile showroomers to buy from the retailer, either at the store or through their online channels. These actions could also be particularly effective for mobile dependent showroomers, as those shoppers are always ready to use their smartphones and would easily engage with these retailer's actions.

Retailers should also take advantage of the effect that social influence has on mobile showrooming intention. For example, digital screens providing information about how many people bought specific items, how they rated the purchase, or their product reviews on social media, could encourage mobile showroomers to buy from the retailer. Additionally, loyalty actions could be implemented with those sharing information through social media after making a purchase in the physical store; consumers could be given a reward (i.e., points to be exchanged for discounts, gifts, or participation in raffles or special events) when sharing in social media a picture showing the store's shopping bag.

Salespeople play a key role to influence showroomers in the physical store. Considering how much an individual's value consciousness affects mobile showrooming intention, salespeople should be trained to correctly identify showroomers and effectively present them with an attractive offer. Salespeople should not only have a perfect knowledge of the retailer's prices and promotions in offline and online channels, but also be aware of competitors' offers available online in order to offer a richer experience to the value-conscious showroomer. In addition, retail managers should train salespeople to view interactions with showroomers as opportunities to build profitable relationships even if they do not purchase from them on a specific occasion. This would decrease the feelings of failure and frustration that could damage the salespeople's overall performance.

Furthermore, salespeople should be trained specifically to interact with shoppers highly involved with the purchase. The salesperson has to prove to showroomers that the retailer's offer is the best option by providing valuable information about product attributes, performance or warranties. The high service quality provided by the salesperson could influence the individual's decision to buy at the physical store, even using the individual's smartphone. Staff could also assist them in that process by inviting them to check the retailer's website or app. All the suggested actions may discourage mobile showroomers to leave the store without purchasing and encourage them to buy at the store or through the retailer's online channels.

6.2. Limitations and Further Research

This paper has some limitations that suggest future research avenues on the topic. We just considered mobile showrooming in two categories, fashion and electronics. Future research could also consider different product categories in two different approaches; on one hand, analysing whether the same results apply to different product categories, as not all products are equally easy to buy online as they involve different symbolic and experiential attributes; on the other hand, considering the moderating role of product characteristics on the analysed relationships. Moreover, the initial aim of the behaviour was not considered, i.e., if mobile showrooming was intentional or unintentional. Perhaps the lack of assortment in the physical store pushed the individual to purchase online, or maybe a crowded store, among others. Future research could analyse the proposed theoretical model considering the intentionality of the behaviour.

This study did not analyse the moderating effects of age, gender and experience suggested in the original UTAUT2 model. Although this omission could have a lesser impact on our study because our sample is drawn from a strictly defined population of mobile showroomers, future research could analyse the potential impact of those variables. Finally, the moderating effect of mobile dependency on the relationship between value consciousness and mobile showrooming intention needs further analysis, since the influence resulted to be in the opposite direction to the one expected.

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Appendix A

Table A1. Construct measures and descriptives.

Construct/Items	Authors	Mean	SD
Facilitating conditions			
The smartphone, compared to the PC, allows me to get access to what I want wherever I am.		5.96	1.11
For shopping purposes, having a smartphone is like having both a mobile phone and a PC together.	[28]	5.79	1.21
Buying through the smartphone, instead of doing it through the PC, saves me time.		5.38	1.40
Buying through the smartphone, instead of through the PC, requires less effort.		5.38	1.38
Social influence			
My family and friends influence my decision to use the smartphone for shopping.		4.16	1.88
The media (TV, radio, newspapers) influence my decision to use the smartphone for shopping.	[28]	4.05	1.79
I think I would use the smartphone more for shopping if people close to me did.		4.01	1.80
Hedonic motivation			
Shopping through the smartphone is fun.		5.36	1.36
Shopping through the smartphone is enjoyable.	[28]	5.11	1.40
Shopping through the smartphone is very entertaining.		5.25	1.39
Purchase involvement			
How would you rate the purchase you made?		5.60	1.17
Important Unimportant	[87]	5.52	1.18
Relevant Irrelevant		5.50	1.17
Means a lot to me Means nothing to me			
Effort expectancy			
It has been easy for me to develop the skills needed for shopping through the smartphone.		5.50	1.32
My interaction with online shopping sites through the smartphone is clear and understandable.	[28]	5.54	1.25
It is easy to become skillful at using online shopping websites through the smartphone.		5.64	1.19
Performance expectancy			
I find shopping through the smartphone is useful in my daily life.		5.58	1.19
Using the smartphone for shopping helps me to accomplish things more quickly.	[28]	5.46	1.29
Shopping through the smartphone increases my shopping efficiency.		5.46	1.27

Table A1. Cont.

Contract/Items	Authors	Mean	SD
Value consciousness			
When shopping, I am equally concerned about low prices and product quality.		6.05	1.10
When shopping, I compare the prices to be sure I get the best value for my money.	[58]	5.93	1.18
When shopping, I try to maximise the quality I get for the money I can spend.		5.94	1.24
When I buy products, I like to be sure that I am getting my money's worth.		5.98	1.14
Mobile dependency			
In my day to day, usage of the smartphone is high.		6.16	1.10
I feel lost when my smartphone is not with me.	[32]	5.22	1.45
I use the smartphone for everything.		5.40	1.39
I am totally dependent on my smartphone.		5.09	1.52
Showrooming intention			
It is likely that in the future I will shop again in this way.		5.89	1.13
When I have to purchase this kind of product again, I will do it in the same way.	[47]	5.57	1.12
I have the intention to continue shopping this way.		5.68	1.13

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