

# Multirooming: generating e-satisfaction throughout omnichannel consumer journey design and online customer experience

Multirooming

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Miguel Angel Moliner<sup>ORCID</sup> and Vicent Tortosa-Edo<sup>ORCID</sup>  
*Department of Business Administration and Marketing, University Jaume I,  
Castellón de la Plana, Spain*

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## Abstract

**Purpose** – The objective of this research is to analyze how omnichannel consumer journey design (OCJD) influences the online customer experience (OCE) and e-satisfaction in consumers' multirooming behavior (searching for information in online and offline channels and purchasing the product online).

**Design/methodology/approach** – The problem-solving theory and experiential marketing perspective are the theoretical background that enables the establishment of five hypotheses. A survey is conducted on multiroomers who had purchased a product online, following an online and offline research journey.

**Findings** – The results showed that OCJD directly and indirectly (through online consumer experience) influences e-satisfaction. Females and younger individuals exhibited higher levels of e-satisfaction.

**Originality/value** – First, this research analyzes consumers' multichannel search strategies. Second, the consumer journey is incorporated into the study of multichannel retailing. Third, an emergent typology of cross-channel free-riding behavior is analyzed: multirooming.

**Keywords** e-Satisfaction, Online experience, Omnichannel journey design, Multirooming, Showrooming, Webrooming

**Paper type** Research paper

## 1. Introduction

Online sales have experienced an exponential increase in recent years. Statista (2023) establishes that retail e-commerce sales worldwide in 2022 were 5,717 billion US dollars. Since 2014, online sales have increased fourfold and are expected to reach more than 8,000 billion US dollars by 2026. e-Commerce as a percentage of total worldwide sales stood at 19.7 per cent in 2022 and is expected to reach 24 per cent in 2026. The leading sources of inspiration for online shoppers worldwide in 2022 are marketplaces (34 per cent), search engines (31 per cent), social media (28 per cent), YouTube (25 per cent) and retailer sites (18 per cent). Meanwhile, the main sources of information about products are search engines (53 per cent), online stores (45 per cent) and physical stores (33 per cent).

Therefore, e-commerce is gaining global relevance, and many consumers have a multichannel search strategy. The key question for a brand is how to encourage consumers to make an online purchase after a multichannel search behavior (Lee and Ma, 2022). Some authors have addressed this question by analyzing the factors that influence customer engagement (Kemp *et al.*, 2021; Puligadda *et al.*, 2021; Lee and Ma, 2022; Bilro and Loureiro, 2023). Other authors have examined some consumers' search strategies, such as webrooming and showrooming, under a cost-benefit perspective (Daunt and Harris, 2017; Gensler *et al.*, 2017; Viejo *et al.*, 2023; Flavian *et al.*, 2019; Mishra *et al.*, 2021; Guo *et al.*, 2022;



Sharma and Dutta, 2023). However, this research focuses on a multichannel search behavior that has not been analyzed so far: multirooming. In addition, the consumer journey perspective is incorporated to explain consumer shopping behavior.

Literature introduced by Van Baal and Dach (2005) define cross-channel free riding as shopping behavior in which the consumer initially searches for information in offline and/or online channels and then makes the purchase in a different channel (Gensler *et al.*, 2017; Viejo *et al.*, 2023; Basak *et al.*, 2020). We define multirooming as the cross-channel free-riding behavior in which the consumer searches for information in a combination of multiple online and offline channels and ultimately purchases the product online.

This behavior has its origin in the emergence of digital, mobile and social media marketing (Wang, 2021, 2023). The consumer journey is becoming increasingly complicated as barriers between the online and offline worlds are erased (Lemon and Verhoef, 2016; Wang, 2021, 2023; Ratchford *et al.*, 2022; Yin *et al.*, 2022b). As a result, the consumer shopping journey has become more iterative, dynamic, customized and multichannel and a key aspect of retailing strategy (Hoyer *et al.*, 2020; Chang and Zhang, 2022; Wang, 2021, 2023). Analyzing the online customer experience (OCE) within the context of multirooming is a crucial aspect of comprehending the realm of e-commerce (Le and Ma, 2022).

The objective of this research is to analyze how omnichannel consumer journey design (OCJD) influences the online shopping experience (OCE) and e-satisfaction in a multirooming context. To this end, we carry out a literature review whose theoretical framework is based on problem-solving theory and an experiential marketing perspective, thereby enabling four hypotheses to be put forward. To test the model, we designed a survey based on a questionnaire with scales validated by the literature. An online questionnaire was administered to a sample of multiroomers who had combined multiple online and offline channels in their search for information and had made an online purchase. Structural equation modeling (SEM) is used to test the hypotheses. Finally, we present the discussion, contributions, managerial recommendations and future directions.

This paper makes three contributions to the literature. First, it delves into an important research area in interactive marketing, such as consumers' multichannel search strategies when making online purchases (Kemp *et al.*, 2021; Yin *et al.*, 2022b; Bilro and Loureiro, 2023). For brands or firms to effectively compete in e-commerce, understanding consumer information-seeking behavior within the current context of blurred boundaries between the online and offline worlds is crucial. This research focuses on examining the impact of the design of both online and offline touchpoints that consumers interact with during the process of making an online purchase (Kemp *et al.*, 2021; Puligadda *et al.*, 2021; Yin *et al.*, 2022b; Lee and Ma, 2022; Bilro and Loureiro, 2023).

Second, we incorporate the consumer journey in the study of omnichannel retailing, which, thanks to the problem-solving theory and experiential marketing perspective, allows us to relate it to the OCE and e-satisfaction. This perspective of studying omnichannel retailing is novel, as previous studies mainly focused on identifying the determinants of consumer cross-channel behavior under the cost-benefit approach, such as price, quality and convenience (Gensler *et al.*, 2017; Mishra *et al.*, 2021; Shi *et al.*, 2020; Sharma and Dutta, 2023), or analyzing the elements that impact customer engagement (Kemp *et al.*, 2021; Puligadda *et al.*, 2021; Lee and Ma, 2022; Bilro and Loureiro, 2023). Wang (2021) and Lim *et al.* (2023) state that customer experience in online, multichannel and omnichannel activities is a relevant interactive marketing area that needs more research.

Third, we study an emergent typology of cross-channel free-riding behavior that has yet to be analyzed. As opposed to showrooming and webrooming, multiroomers' searches for information combine multiple online and offline sources, resulting in the purchase of the product online (Gensler *et al.*, 2017; Viejo *et al.*, 2023; Basak *et al.*, 2020). Multirooming is

a research shopping behavior that emerges because of the exponential increase in e-commerce since the COVID-19 pandemic (Statista, 2023) and the blurring of the boundaries between offline and online channels (Wang, 2021, 2023). No studies have yet addressed multirooming, and it is interesting to know how firms' OCJD influences the complex context of multichannel consumer information-seeking. Quach *et al.* (2022) and Sharma and Dutta (2023) consider that, although omnichannel retailing has received considerable attention in recent years, its impact on customer experience and e-satisfaction is still unclear.

## 2. Theoretical background

### 2.1 Problem-solving theory

According to Lemon and Verhoef (2016), the theoretical framework of consumer journeys is rooted in consumer behavior theory (Herhausen *et al.*, 2019; Mishra *et al.*, 2021; Neslin, 2022; Asmare and Zewdie, 2022). Mishra *et al.* (2021) consider that consumer behavior is at the core of retailing literature, but there is a lack of papers linking multichannel consumer decision-making with behavioral theories. The problem-solving theory states that when consumers face a problem, they follow a series of steps or cognitive processes to identify, define and solve it (Hoyer *et al.*, 2020). The classic Howard and Sheth (1969) model explains product choice by taking into account the constraints of consumers' limited individual capacities and incomplete information.

Academics are unanimous in their consideration that consumers go through a series of stages during the cognitive problem-solving process: search, purchase and aftersales (Verhoef *et al.*, 2015; Shankar *et al.*, 2016; Barwitz and Mass 2018; Rahman *et al.*, 2022; Alexander and Kent, 2022; Yin *et al.*, 2022b; Neslin, 2022). Howard and Sheth's (1969) model applied to the multichannel buying process shows that, when a need is awakened, consumers begin a journey on which they check different sources of information to form an attitude. Before the Information and Communication Technology revolution, consumers visited several physical stores to reduce the risk and uncertainty associated with shopping, but the internet has created an open window with no physical limits (Viejo *et al.*, 2023). The relevance of interactive marketing has accelerated since the COVID-19 pandemic, when consumers needed to easily connect and interact with firms due to lockdown and the closure of physical stores (Kannan and Kulkarni, 2022; Sharma and Dutta, 2023). Interactive marketing has also been enhanced by the intense technological revolution, internet users' culture of participation and the proliferation of social media (Wang, 2021).

Research shopping has been defined as "the propensity of customers to research the product in one channel, and then purchase it through another channel" (Verhoef *et al.*, 2015; Viejo *et al.*, 2023). There are different combinations of channels that consumers can check on the shopping journey when seeking inspiration and product information. Although webrooming and showrooming stand out as the most studied in the literature (Viejo *et al.*, 2023), multirooming is a cross-channel free-riding behavior that has emerged from the rise of interactive marketing and the blurring of the barriers between online and offline channels (Wang, 2021, 2023).

During a shopping journey, multiroomers may go through multiple expected and unexpected events, spend little or considerable time, have a clear or bumpy path and interact with multiple touchpoints (Hamilton and Price, 2019; Akaka and Schau, 2019; Rahman *et al.*, 2022). Therefore, multichannel consumer journeys can involve a complex process, requiring firms to examine potential touchpoints across multiple channels that shape the multiroomer experience (Hamilton and Price, 2019; Yin *et al.*, 2022b; Rahman *et al.*, 2022).

## 2.2 Experiential marketing

Experiential marketing perspective is also a relevant conceptual framework for an omnichannel context. Customer experience is a key aspect of the omnichannel perspective because the interaction and experience with consumer journey touchpoints lead to value co-creation (Japutra *et al.*, 2021). In recent years, interactive marketing has enhanced multisided network interactions such that the roles of sellers, buyers and producers are blurring (Wang, 2021). Consumers' shopping journeys have become less planned because consumers are shopping while being entertained on their mobiles (Wang, 2021). As they walk or entertain themselves with their devices, they find inspiration and can activate a search for product information. The e-commerce marketplace is extending to social media where consumers share their interests and experiences through social selling and user-generated marketing activities (Wang, 2021).

Customer online experience is becoming more immersive as social media platforms enable organic marketing, understood as the integration of marketing activities into consumers' daily lives, thanks to the use of mobile apps for expressing opinions, reading news, gaming and browsing the internet. Rodríguez *et al.* (2023) consider that consumers have a positive omnichannel experience when they are fully immersed in a state of flow during the purchase process. This implies that firms' channels integrate with each other, synchronizing the physical and digital worlds (Wang, 2021; Guo *et al.*, 2022).

In this theoretical framework, omnichannel design is directly related to the level of integration of the online and offline touchpoints with which the multiroomer interacts in the different phases of the purchase decision process (Shankar *et al.*, 2016; Neslin, 2022). Online consumer experience is the result of evaluations of multiroomer interactions with the touchpoints on the online consumer journey (Lemon and Verhoef, 2016; Kuehnl *et al.*, 2019; Herhausen *et al.*, 2019; Rahman *et al.*, 2022). Meanwhile, e-satisfaction is a post-purchase evaluation in which the customer compares perceptions with expectations after the online purchase experience (Oliver, 1999; Evanschitzky *et al.*, 2004).

## 3. Hypotheses development

### 3.1 *The relationship between omnichannel consumer journey design and online customer experience*

Firms' omnichannel strategies are a response to consumers' cross-channel free riding. Omnichannel retailing is "the synergetic management of the numerous available channels and customer touchpoints, in such a way that the customer experience across channels and the performance over channels are optimized" (Verhoef *et al.*, 2015). Implementing an effective omnichannel strategy is a major challenge for firms, as successful execution requires clear guidelines and framework (Shi *et al.*, 2020; Mishra *et al.*, 2021; Wang, 2021; Neslin, 2022; Asmare and Zewdie, 2022; Sharma and Dutta, 2023).

Firms' omnichannel strategies have become highly relevant, as they involve coordinating and synchronizing e-commerce, m-commerce and brick-and-mortar establishments (Guo *et al.*, 2022). Unlike multichannel retail, omnichannel retail is integrated, customized and interactive (Shi *et al.*, 2020; Yin *et al.*, 2022b). Kuehnl *et al.* (2019) define effective consumer journey design as "the extent to which consumers perceived multiple brand-owned touchpoints as designed in a thematic, cohesive, consistent and context-sensitive way".

OCJD emphasizes the mix of online and offline touchpoints and the degree of integration between them (Rahman *et al.*, 2022; Yin *et al.*, 2022b). Kuehnl *et al.* (2019) identify three dimensions of effective consumer journey design: (1) touchpoint thematic cohesion (the degree to which consumers perceive that a common theme is shared across channels), (2) touchpoint consistency (the degree to which consumers perceive that a uniform design is

maintained across channels) and (3) touchpoint context sensitivity (the degree to which consumers perceive that channels are responsive and tailored to their goals and needs). For their part, Quach *et al.* (2022) reduce the dimensions to two: (1) consistency (the coherence of services, information and experiences across channels) and (2) transparency (how additional information is communicated to consumers across channels). In a meta-analysis study, Neslin (2022) concludes that there is no consensus on the dimensions of OCJD.

OCE is the cognitive, emotional, social and sensory response that emerges from consumer interaction with online journey touchpoints (Lemon and Verhoef, 2016; Bleier *et al.*, 2019; Stein and Ramaseshan, 2020; Molinillo *et al.*, 2021; Chen *et al.*, 2021). Customer experience refers to what customers think, feel and do along customer's journey, encompassing a variety of activities across multiple channels (Gao *et al.*, 2019). At a practical level, cognitive (informativeness) and affective (entertainment) dimensions have been established as the most relevant (Molinillo *et al.*, 2021), although the social dimension (social presence) also exerts a significant influence, whereas sensory dimension (sensory appeal) is the least relevant factor (Bleier *et al.*, 2019).

Regarding the relationship between OCJD and OCE in a multirooming context, consumer problem-solving theory and experiential marketing perspective establish that there is a very close relationship between both constructs in each phase of the purchase journey (Cheah *et al.*, 2022). Touchpoint thematic cohesion and consistency across channels provide a consistent image that influences affective and sensory OCE (Kuehnl *et al.*, 2019). Moreover, touchpoint context sensitivity influences OCE by adapting the channels to customer needs and goals (Kuehnl *et al.*, 2019).

Thus, OCJD directly influences OCE by integrating different online and offline touchpoints, channels and devices to create a seamless and consistent OCE (Li *et al.*, 2018; Barwitz and Maas, 2018; Gao *et al.*, 2019; Kuehnl *et al.*, 2019; Alexander and Kent, 2022; Yin *et al.*, 2022b; Quach *et al.*, 2022). If channel integration is done in a consistent, coherent and context-sensitive way, OCJD can shape OCE (Kuehnl *et al.*, 2019; Gao *et al.*, 2019).

In addition, OCJD influences the availability and accessibility of information and resources that multiroomers may need during the online shopping process (Gao *et al.*, 2019; Yin *et al.*, 2022b). Good touchpoint design reduces the time and cost of multiroomers search, which is related to informativeness, a key dimension of OCE (Kuehnl *et al.*, 2019; Quach *et al.*, 2022; Ratchford *et al.*, 2022). For example, customers' need to access product information, reviews or sales support during the online purchase process (Statista, 2023) and a well-designed omnichannel journey can facilitate access to these resources, which can improve OCE. Therefore, effective omnichannel journey design can directly impact the quality of the OCE because it is an integral part of the overall journey.

*H1.* OCJD positively influences OCE in a multirooming context.

### 3.2 Customer e-satisfaction

e-Satisfaction is the consumer's psychological or emotional state resulting from comparing expectations with e-commerce performance after the shopping experience (Szymanski and Hise, 2000; Herhausen *et al.*, 2019; Rodriguez *et al.*, 2020; Luceri *et al.*, 2022). e-Satisfaction is based on the expectancy–disconfirmation paradigm. Not only is it a critical performance outcome, it is also a key predictor of customer loyalty (Evanschitzky *et al.*, 2004; Chen *et al.*, 2008; Hult *et al.*, 2019; Rodriguez *et al.*, 2020; Alalwan, 2020).

There are reasons to believe that OCJD directly influences e-satisfaction in a multirooming context (Yin *et al.*, 2022b). Multiroomers expect a well-designed journey, where channels are integrated through consistent, coherent and context-sensitive touchpoint design (Kuehnl *et al.*, 2019). Consumers seek convenience and want to access products and services through their preferred device or medium (Neslin, 2022). This can lead to increased e-satisfaction, as multiroomers feel their needs and preferences are being catered to.

A well-designed omnichannel consumer journey can help reduce friction points, provide transparency and inform the purchase process (Pagani *et al.*, 2019; Quach *et al.*, 2022). For example, multiroomers can easily check product availability across different channels or access their cart across different devices (Pagani *et al.*, 2019). By integrating different data sources, consumers can access product information, pricing, reviews and more, all in one place. In brief, integrating channels makes life easier for multiroomers (Neslin, 2022).

Moreover, a well-designed omnichannel journey can help provide multiroomers with more flexibility and control over their online purchase (Quach *et al.*, 2022). For example, consumers can choose to purchase online and pick up in-store or have their order delivered to their preferred address (Ratchford *et al.*, 2022). OCJD can help multiroomers' ability to resolve any issues or concerns they may have during and after the purchase. If OCJD provides easy access to consumer support and clear information on returns or refunds, the customer is more likely to feel satisfied. Furthermore, offline channels mean products can be examined physically, an aspect that consumers see as a drawback of the online channel (Ratchford *et al.*, 2022; Wang, 2021; Kannan and Kulkarni, 2022; Statista, 2023). This can lead to increased e-satisfaction as multiroomers feel they have more options and control over their shopping experience.

## H2. OCJD positively influences customer e-satisfaction in a multirooming context.

Consumers expect a quality online experience; hence, expectancy disconfirmation leads to e-dissatisfaction (Lemon and Verhoef, 2016). Seminal studies about e-satisfaction state that online shopping convenience, product information, product offerings, site design and financial security are antecedents of e-satisfaction (Szymanski and Hise, 2000; Evanschitzky *et al.*, 2004). Therefore, a high-quality cognitive (informativeness), affective (entertainment), social (social presence), and/or sensory (sensory appeal) online experience can lead to improved consumer e-satisfaction (Kuehnl *et al.*, 2019; Japutra *et al.*, 2021; Chen *et al.*, 2021).

Satisfaction is a state that arises when expectations and experiences are balanced (Molinillo *et al.*, 2021). The consumer expects a quality experience in all phases of the online buying process. If the online experience in the search, purchase and aftersales' phases is positive, e-satisfaction will also be positive. The internet has reduced consumer search costs and price dispersion and provides user-generated content (online reviews and social media communication), which benefits multiroomers (Chang and Zhang, 2022; Ratchford *et al.*, 2022). According to Statista (2023), flexibility, no need to go to a store, variety of products, no crowding, easy to find and no geographical limitation are mentioned by global consumers as benefits of e-commerce related to OCE that generate e-satisfaction. In contrast, a poor online shopping experience is mentioned by global consumers as a drawback of e-commerce that leads to dissatisfaction (Statista, 2023). If the online experience does not generate positive cognitive, affective, social and/or sensory responses in any phase of the problem-solving process, it will condition e-satisfaction (Molinillo *et al.*, 2021; Japutra *et al.*, 2021).

## H3. OCE positively influences customer e-satisfaction in a multirooming context.

OCE mediates the relationship between OCJD and e-satisfaction in a multirooming context. A well-designed omnichannel consumer journey may provide multiroomers with a variety of touchpoints and channels to interact with e-commerce, but the quality of the online experience may determine whether multiroomers complete their purchase or not. For example, a main drawback of e-commerce is the impossibility of touching or feeling the product, an aspect that can be compensated by good omnichannel design (Ratchford *et al.*, 2022; Statista, 2023). Product search, customer reviews and price comparison are touchpoints mentioned by consumers as generating positive OCE and, therefore, e-satisfaction (Statista, 2023). If the online experience is poor, multiroomers may be less likely to complete their purchase, regardless of the quality of the other touchpoints.

Furthermore, a well-designed omnichannel consumer journey can help provide customers with a seamless experience (Lemon and Verhoef, 2016). By integrating different channels, such as customer support and returns, multiroomers can easily resolve any issues or concerns they may have. This can lead to increased e-satisfaction, as multiroomers feel that e-commerce is committed to providing a high level of service and support.

Multiroomers expect to fulfill their expectations of a well-designed omnichannel journey, leading to a seamless online experience. Moreover, a well-designed omnichannel consumer journey may provoke higher expectations for the online experience in a multirooming context. By providing multiroomers with a customized, convenient, transparent, flexible and seamless experience, in line with expectations, brands can thus increase e-satisfaction, while omnichannel design can provide customers with a more customized and convenient shopping experience.

H4. OCJD indirectly influences multiroomers' e-satisfaction through OCE.

The hypotheses are summarized in Figure 1.

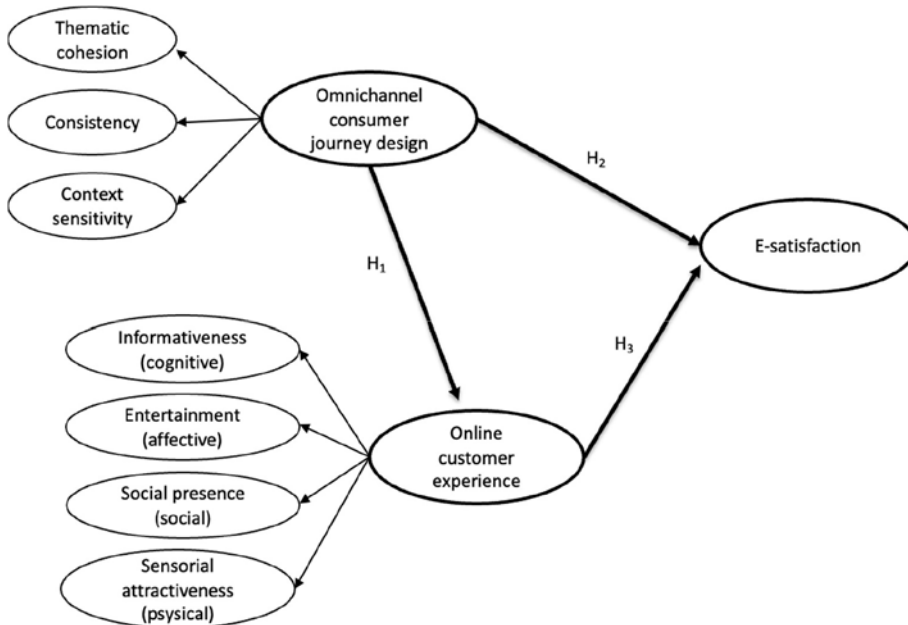


Figure 1.  
Causal model

Source: Authors' own work

**4. Research methodology**

*4.1 Sample selection and scales of measurement*

Questionnaire design was based on the adaptation of measurement scales validated by the literature (Table I). All the scales were scored on a 5-point Likert scale (1 = totally disagree and 5 = totally agree). Before the field work, a pilot test was conducted to improve questionnaire clarity.

The control variables in the model were individual characteristics, namely customers' gender (male/female), age and level of education, considered as antecedent factors in previous contributions focusing on satisfaction with e-commerce (Lightner, 2003; Gao et al., 2019; Nguyen, 2020).

An electronic version of the questionnaire was implemented and distributed on social media (Instagram and Facebook) in August–December 2021, receiving 1,458 responses from Spanish consumers that had recently made an online purchase. We consider the users of these two social media, the most used by online users in Spain (WeareSocial, 2022), to be the most suitable universe to study multiroomers, as they are likely to use e-commerce, m-commerce and brick-and-mortar channels. The literature has also argued that the use of social media has become an increasingly common recruitment method given the advantages of reaching larger, potentially more diverse populations, with evidence suggesting it may be more efficient and effectively than offline methods (Benedict et al., 2019; Christensen et al., 2017).

In order to identify multiroomers, a filter question was included: "I visited several websites/apps and physical stores to get information about the product" (the other two options were, "I only visited the website/app where I made the purchase" and "I visited several websites/apps before deciding to buy the service from this website/app"). Only those who chose the first option were selected for this study because they had used both online and offline channels (multiple channel journey) and had made an online purchase. Incomplete questionnaires were deleted, thereby eliminating the problem of missing values. The sample size was 205 valid and complete responses (there were only four incomplete responses that were not considered in the analyses as we used the Listwise option of the EQS program (SEM) to treat the missing data). The sample covered several localities of 43 provinces, belonging to 16 regions in Spain. Most respondents were university-educated women, aged between 30 and 49 years (Table II).

*4.2 Complementary data analysis*

We focused on research design and data analysis to prevent and assess the effect of common method variance. At the research design stage, following MacKenzie and Podsakoff (2012), all participants were guaranteed that their responses would be anonymous and confidential. Additionally, questions on independent and dependent constructs were

Construct	Dimensions	Number of items	References
Omnichannel consumer journey design	Thematic cohesion	4	Kuehnl et al. (2019)
	Consistency	4	
	Context sensitivity	4	
Online customer experience	Informativeness (cognitive)	3	Bleier et al. (2019)
	Social presence (social)	3	
	Sensory appeal (sensory)	3	
	Entertainment (affective)	3	
E-satisfaction		3	Hult et al. (2019) Monferrer et al. (2019)

**Table I.** Scales of measurement **Source:** Authors' own work



	Percentage (%)
Gender	
Men	23.9%
Women	76.1%
Age (mean: 40.6)	
18–29	16.1%
30–49	63.4%
50–69	19.5%
70 or more	0.1%
Level of education	
Without primary education	0.5%
Primary education	7.3%
Secondary education	19.5%
High school education	30.3%
University education	42.4%

Source: Authors' own work

**Table II.**  
Customer  
classification data

separated (Podsakoff and Organ, 1986), as the questionnaire considered other variables not used for this research. Furthermore, to statistically explore the extent to which the measures were influenced by common method bias, we conducted a Harman's single factor test (Podsakoff and Organ, 1986). The results of the confirmatory factor analysis with the 30 indicators loading onto a single factor showed a poor fit (Satorra–Bentler  $\chi^2 = 1823.16$ ,  $df = 405$ ;  $p$ -value = 0.00; Satorra–Bentler  $\chi^2/df = 4.50$ ; comparative fit index (CFI) = 0.63; Bentler–Bonett normalized fit index (BBNFI) = 0.57; Bentler Bonnet nonnormed fit index BBNFI = 0.60; Incremental Fit Index (IFI) = 0.63; root mean square error of approximation (RMSEA) = 0.13). Finally, following MacKenzie and Podsakoff (2012), we performed a factorial analysis on the indicators of the model using principal component analysis, in which the unrotated factor solution was examined. The results of the factorial analysis revealed several factors with eigenvalues greater than 1. These factors explain 69.92 per cent of the variance among the 30 items; the first factor accumulates 42.12 per cent. Accordingly, we consider that the common method bias is unlikely to be a concern in this study.

Further tests were also carried out. First, the variance inflation factor among the indicators in the proposed model verified the absence of signs of multicollinearity. The results, with values between 1.994 and 6.758 (lower than the maximum value of 10), suggested that multicollinearity was not a problem in the research (Kock, 2015). Second, we performed a  $t$ -test of independent means on the dimensions of the variables in the model. In the first group, responses for the first quarterly respondents (early respondents) were included, while the second group contained the characteristics of the last quarterly respondents (Armstrong and Overton, 1977). The independent sample  $t$ -test, by means of SPSS, showed that none of the dimensions had significant differences for each group ( $p > 0.05$ ), except for the dimension entertainment ( $p = 0.042$ ). We decided to maintain this dimension in the model as its content validity, convergent and discriminant validity and reliability satisfied the statistical criteria.

## 5. Results

We used SEM (EQS 6.4 statistical software package) to empirically validate the model, along with the maximum likelihood estimation method with robust estimators. Analysis consisted of two stages: a confirmatory factor analysis test and a structural model or causal test.

### 5.1 Confirmatory factor analysis test

A confirmatory factor analysis was carried out to assess scale dimensionality. First, the two second-order variables in the research model were checked to support the proposed multidimensional structure of both concepts (Chiva and Alegre, 2009). In the case of the OCJD construct, the results showed a good model fit (Satorra–Bentler  $\chi^2 = 61.94$ ,  $df = 51$ ;  $p$ -value = 0.14; Satorra–Bentler  $\chi^2/df = 1.21$ ; CFI = 0.99; BBNFI = 0.94; BBNNFI = 0.99; IFI = 0.99; RMSEA = 0.03). For OCE, the Lagrange multiplier test showed a modification to improve the fit indices. This was the error correlation between items P2.9 and P2.7, from the dimension sensory appeal, with similar content for the members of the sample. The final measurement model showed an acceptable fit (Satorra–Bentler  $\chi^2 = 126.344$ ;  $df = 49$ ;  $p$ -value = 0.00; Satorra–Bentler  $\chi^2/df = 2.57$ ; CFI = 0.96; BBNFI = 0.93; BBNNFI = 0.94; IFI = 0.95; RMSEA = 0.08), with all the indices satisfying their cut-off values, except for the RMSEA result, which was close to its close fit (Smith and McMillan, 2001).

Once the results supported the proposed second-order variables, a full measurement model that included the three constructs was examined. The final measurement model (see Table III) resulted in an acceptable fit (Satorra–Bentler  $\chi^2 = 552.089$ ;  $df = 385$ ,  $p$ -value < 0.05; Satorra–Bentler  $\chi^2/df = 1.43$ ; CFI = 0.96; BBNFI = 0.87; BBNNFI = 0.95; IFI = 0.96; RMSEA = 0.05), with all the indices satisfying their cut-off value, except for the BBNFI value, which was close to its threshold (0.90). Composite reliability and Cronbach's alpha were used to assess the reliability of the scales; in all cases, the result was above the 0.7 threshold (Nunnally, 1979) (Table III).

The convergent validity of the latent variables and first- and second-order variables was tested with the average variance explained (AVE), which showed a value higher than the recommended minimum of 0.5 (Table IV). The  $t$ -test was significant for all items ( $t > 1.96$ ). Finally, discriminant validity was supported, and the square root of the average variance extracted (AVE<sup>1/2</sup>) from each latent variable was higher than the correlations between the latent variables (Table IV).

### 5.2 Structural model test: hypothesis testing

In the second step of our SEM analysis, the structural model was estimated (Table V). An acceptable model fit was corroborated by several statistics (Satorra–Bentler  $\chi^2 = 580.915$ ;  $df = 388$ ;  $p$ -value < 0.05; Satorra–Bentler  $\chi^2/df = 1.49$ ; CFI = 0.95; BBNFI = 0.87; BBNNFI = 0.95; IFI = 0.95; RMSEA = 0.05).

Analysis of the results confirms the first hypothesis because there is a positive and significant relationship between OCJD and OCE (0.385,  $t = 3.87$ ). The results also support the second hypothesis because there is a positive and significant relationship between OCJD and e-satisfaction (0.215,  $t = 3.87$ ). Furthermore, the results confirm the third hypothesis because there is a positive and significant relationship between OCE and e-satisfaction (0.657,  $t = 9.60$ ). Finally, the results confirm the fourth hypothesis because there is an indirect relationship (0.253,  $t = 3.40$ ), through OCE, between OCJD and e-satisfaction. The total relationship between OCJD and e-satisfaction was 0.468 ( $t = 4.79$ ), after the sum of the direct (0.215) and indirect relationship (0.253) was taken into account. Regarding the antecedent role of the control variables in the model, there is a significant relationship between customer age ( $-0.172$ ,  $t = -2.90$ ) and gender (0.179,  $t = 3.41$ ) with e-satisfaction. More specifically, younger and female customers participating in the study granted greater e-satisfaction.

## 6. Discussion and conclusions

The objective of this research is to study how OCJD influences the online shopping experience (OCE) and e-satisfaction in a multirooming context.

Items	Mean	SD	Factor loading (standardized)	t-test
<i>Omni-channel consumer journey design (AVE = 0.86, composite reliability = 0.95, Cronbach's alpha = 0.93)</i>				
Thematic cohesion of touchpoints (AVE = 0.56, composite reliability = 0.83, Cronbach's alpha = 0.84)				
P.1.1. The touchpoints of this brand/retailer are thematically rooted	3.93	0.94	0.999	Fixed
P.1.2. The touchpoints of this brand/retailer have a clear thematic philosophy	3.66	1.06	0.746	Fixed
P.1.3. This brand/retailer pursues a thematic concept	3.73	1.05	0.726*	11.49
P.1.4. This brand/retailer stands for a specific theme and campaigns for it	3.75	1.04	0.729*	9.97
Consistency of touchpoints (AVE = 0.59, composite reliability = 0.85, Cronbach's alpha = 0.85)				
P.1.5. This brand/retailer conveys a uniform impression across different touchpoints	3.80	1.04	0.783*	12.09
P.1.6. This brand/retailer is consistent across different touchpoints	3.92	0.97	0.956*	12.59
P.1.7. The presentation of the brand/retailer's various touchpoints emits a homogeneous image	3.94	0.92	0.768*	Fixed
P.1.8. Different touchpoints of this brand/retailer are designed in a concerted way	3.71	1.03	0.794*	12.95
Context sensitivity of touchpoints (AVE = 0.63, composite reliability = 0.87, Cronbach's alpha = 0.88)				
P.1.9. When I encounter this brand/retailer, it takes my specific activities, interests or needs into account	3.58	1.06	0.791*	11.31
P.1.10. Different touchpoints of this brand/retailer are well aligned to my personal circumstances	3.60	1.07	0.720*	11.51
P.1.11. I have the impression that different touchpoints of this brand/retailer fit my daily routines well	3.54	1.09	0.826*	11.19
P.1.12. The connection between different touchpoints of this brand/retailer allows me simple and fast activities	3.67	0.99	0.835	Fixed
<i>Online customer experience (AVE = 0.87, composite reliability = 0.90, Cronbach's alpha = 0.94)</i>				
Informativeness (AVE = 0.74, composite reliability = 0.90, Cronbach's alpha = 0.89)				
P.2.1. Information obtained from the website is useful	4.02	0.94	0.843	Fixed
P.2.2. I learned a lot from using the website	3.72	1.12	0.848	Fixed
P.2.3. I think the information obtained from the website is helpful	3.98	0.94	0.858*	11.75
Social presence (AVE = 0.85, composite reliability = 0.94, Cronbach's alpha = 0.94)				
P.2.4. There is a sense of human contact in the website	3.34	1.26	0.877*	17.17
P.2.5. There is a sense of human warmth in the website	3.19	1.26	0.860*	10.68
P.2.6. There is an impression of human sensitivity in the website	3.05	1.30	0.882	Fixed
Sensory appeal (AVE = 0.70, composite reliability = 0.87, Cronbach's alpha = 0.84)				
P.2.7. The product presentation on this website is lively	3.71	1.08	0.950*	25.41
P.2.8. I can acquire product information on this website from different sensory channels	3.19	1.34	0.927*	23.02
P.2.9. This website contains product information that excites the senses	3.06	1.34	0.928*	13.16
Entertainment (AVE = 0.75, composite reliability = 0.90, Cronbach's alpha = 0.90)				
P.2.10. Not fun/fun	3.47	1.33	0.854*	Fixed
P.2.11. Not enjoyable/enjoyable	3.66	1.26	0.785*	14.28
P.2.12. Not at all entertaining/very entertaining	3.57	1.28	0.861*	14.75
			0.757*	9.02
			0.852	Fixed
			0.888*	16.63
			0.864*	17.43

(continued)

**Table III.**  
Dimensionality,  
reliability and  
convergent validity of  
the scales of the model

Table III.

Items	Mean	SD	Factor loading (standardized)	t-test
<i>e-Satisfaction (AVE = 0.80, composite reliability = 0.92, Cronbach's alpha = 0.92)</i>				
P.3.1. My expectations of the website have been met	3.95	1.03	0.860	Fixed
P.3.2. I am satisfied with the service I have received from this website	3.96	1.02	0.937*	19.69
P.3.3. I am satisfied with this website	4.03	0.95	0.882*	14.88
<i>Control variables</i>				
P.4. Customer's age	40.60	11.53		
P.5. Customer's gender (male and female)	1.76	0.43		
P.6. Customer's level of education	4.08	0.97		
<b>Notes:</b> Fit of the model: Satorra-Bentler chi-squared = 526.706; df = 387; p-value = 0.000; Satorra-Bentler $\chi^2/df = 1.36$ ; CFI = 0.96; BBNNFI = 0.96; IFI = 0.96; RMSEA = 0.04; * Significant at $p \leq 0.05$				
<b>Source:</b> Authors' own work				

6.1 Theoretical contributions

This research confirms Kuehnl et al.'s (2019) proposal regarding the dimensionality of OCJD. Multiroomers consider thematic cohesion and consistency of online and offline touchpoints and sensitivity to customer needs to be the main dimensions of OCJD. Thematic cohesion and consistency of the touchpoints are the two most relevant dimensions in the formation of

Factors	(1)	(2)	(3)	(4)	(5)	(6)
(1) Omnichannel consumer journey design	0.930					
(2) Online customer experience	0.392*	0.849				
(3) e-Satisfaction	0.448*	0.790*	0.894			
(4) Customer's age	0.105+	0.019+	-0.138+	-		
(5) Customer's gender (male/female)	0.086+	0.399*	0.428*	-0.052+	-	
(6) Customer's level of education	-0.145*	0.144*	0.117+	-0.155*	0.271*	-

**Notes:** Diagonal values: square root of AVE of a latent factor Values below the diagonal values: Pearson correlation coefficients between variables; \* Significant at  $p \leq 0.05$ ; + Non-significant at  $p \leq 0.05$

**Source:** Authors' own work

**Table IV.** Discriminant validity of the scales

	Parameter estimates (standardized values)	SE	t-test
<i>Direct relationship</i>			
H1: Omnichannel consumer journey design → Online consumer experience	0.385*	0.094	3.87
H2: Omnichannel Consumer Journey Design → e-Satisfaction	0.215*	0.068	3.87
H3: Online consumer experience → e-Satisfaction	0.657*	0.089	9.60
<i>Indirect relationship</i>			
H4: Omnichannel consumer journey design → e-Satisfaction	0.253*	0.091	3.40
<i>Relationship between control variables and e-Satisfaction:</i>			
Customer's age → e-Satisfaction	-0.172*	0.004	-2.90
Customer's gender → e-Satisfaction	0.179*	0.106	3.41
Customer's level of education → e-Satisfaction	-0.003 <sup>a</sup>	0.049	-0.052
<i>Measurement model</i>			
Omnichannel consumer journey design → Thematic cohesion	1	-	Fixed
Omnichannel consumer journey design → Consistency	0.954*	0.087	12.55
Omnichannel consumer journey design → Context sensitivity	0.826*	0.095	11.07
Online consumer experience → Informativeness	0.823	-	Fixed
Online consumer experience → Social presence	0.874*	0.138	10.62
Online consumer experience → Sensory appeal	0.935*	0.102	12.85
Online consumer experience → Entertainment	0.746*	0.145	8.84
<i>Dependent factor</i>			
Online consumer experience	$R^2$		
e-Satisfaction	0.148		
	0.651		
Goodness-of-fit indices for the structural model			
Satorra-Bentler chi-squared = 580.915; df = 388; p-value = 0.000; Satorra-Bentler $\chi^2/df$ = 1.49; CFI = 0.95; BBNFI = 0.86; BBNNFI = 0.94; IFI = 0.95; RMSEA = 0.05			

**Notes:** \*Significant at  $p \leq 0.05$ ; <sup>a</sup> Non-significant

**Source:** Authors' own work

**Table V.** Hypotheses testing

OCJD. This finding complements the conclusion of [Kemp et al. \(2021\)](#) when they emphasize the relevance of storytelling, with emotional connection, in interactive marketing.

As for OCE, sensory appeal (sensory) is the most significant dimension, although social presence (social) and informativeness (cognitive) are also relevant. Entertainment (affective) is significant, though not as important as the other three. These results are in line with [Japutra et al. \(2021\)](#), who found that sensory experience is a key element of customer experience with apps but do not concur with those of [Bleier et al. \(2019\)](#), because they highlight informativeness and entertainment as the main dimensions of OCE. [Mishra et al. \(2021\)](#) also found that the cognitive aspect is the key dimension of omnichannel consumer experience. The relevance of sensory appeal seems to highlight the relevance of organic marketing for multiroomers ([Wang, 2021](#)), which is less intrusive than traditional tools and which transforms marketing activities into consumers' daily life events. Experiential marketing supports this view when it considers that immersion in a state of flow during online shopping generates positive customer experiences ([Rodríguez et al., 2023](#)).

Regarding the relationship between the variables, a direct and indirect relationship between OCJD and e-satisfaction is observed ([Chang and Zhang, 2022](#); [Ratchford et al., 2022](#); [Yin et al., 2022b](#); [Neslin, 2022](#)). The results concur with [Kannan and Kulkarni's \(2022\)](#) statement that, while technology is a key aspect of interactive marketing, effective customer journey design is critical in today's marketplace. The main antecedent of multiroomers' e-satisfaction is OCE. The strong relationship between OCE and e-satisfaction identified in this research is in line with other papers about the online context ([Japutra et al., 2021](#); [Molinillo et al. 2021](#)). This is logical as it is a specific evaluation of the online context in which the consumer makes the purchase. Integrating online and offline channels is, then, a priority of omnichannel retailing strategy because it leads to a seamless customer experience that improves OCE and e-satisfaction ([Quach et al., 2022](#)).

In addition, e-satisfaction is influenced by the control variables ([Gao et al., 2019](#); [Alexander and Kent, 2022](#)). Females have higher levels of e-satisfaction. Therefore, according to [Ameen et al. \(2021\)](#), the gender perspective should be taken into account in e-commerce. As for age, the results show that the higher the age, the lower the rating of e-satisfaction, which has to do with the difficulties with e-commerce older people face.

The influence of OCJD on OCE is noteworthy ([Alexander and Kent, 2022](#); [Yin et al., 2022b](#); [Quach et al., 2022](#)). Although multirooming includes online and offline channels, it is evident that consumer perceptions of integrated online and offline touchpoints and the attention to their needs, regardless of the channel, have a significant impact on OCE. These findings align with [Yin et al. \(2022b\)](#) as they suggest that, in interactive marketing, customers' evaluation of the user experience is influenced not only by technology but also by the value they attribute to location information. Furthermore, the consumer's predisposition to process information based to a brand schema (brand schematicity) is an aspect that could potentially moderate the relationships between the variables ([Puligadda et al., 2021](#)). Besides webrooming and showrooming, a broader view of research shopping that includes free riders who check multiple online and offline information sources needs to be taken into account ([Viejo et al., 2023](#)).

In short, multiroomers find inspiration by surfing different channels as a normal part of their daily lives. When inspired, they initiate an active search for product information across multiple online and offline channels. E-commerce, m-commerce and social media then interact with the brick-and-mortar channel on multiroomers' shopping journey. Firms must design an omnichannel strategy that coordinates both online and offline touchpoints. Thematic cohesion and consistency are key elements to generate positive OCE and e-satisfaction, and OCE is essential to generating e-satisfaction.

This research makes some contributions to the literature. First, it delves into consumers' multichannel search strategies ([Kemp et al., 2021](#); [Yin et al., 2022b](#); [Bilro and Loureiro, 2023](#)).

This represents an important area of research in interactive marketing, aiming to discover the mechanisms that influence a consumer's brand choice in the e-commerce environment (Lee and Ma, 2022). This paper emphasizes the significant role of OCJD and OCE for a brand, as they have a direct and indirect effects on e-satisfaction. OCJD and OCE complement the list of key variables identified in the interactive marketing literature, such as storytelling (Kemp *et al.*, 2021), personal connection (Kemp *et al.*, 2021; Yin *et al.*, 2022b) and user experience (Yin *et al.*, 2022b).

Second, we incorporate the consumer journey into the study of omnichannel retailing. Most research on omnichannel strategy has focused on the study of the determinants of channel choice through cost-benefit analysis and through the identification of buyer characteristics (Mishra *et al.*, 2021; Shi *et al.*, 2020; Sharma and Dutta, 2023) or analyzing the factors that influence customer engagement (Kemp *et al.*, 2021; Puligadda *et al.*, 2021; Lee and Ma, 2022; Bilro and Loureiro, 2023). We provide evidence of the influence of omnichannel journey design on OCE and e-satisfaction. The theoretical background of this paper is behavioral theories, which lie at the core of retailing literature themes, but are not yet applied to explain omnichannel consumer decision-making (Mishra *et al.*, 2021). At a theoretical level, OCE has been established as deriving from interaction with consumer journey touchpoints, which has been tested in this research.

Third, an emergent typology of cross-channel free riding has been identified: multirooming. Online shoppers not only search for information in online or offline channels but can combine both channels, depending on the type of product and/or their personal characteristics (Viejo *et al.*, 2023). The influence of offline channels on the online environment has been identified empirically in this research. In the context of the multiroomer journey, the integration of firms' online and offline channels has been shown to have a significant impact on e-satisfaction and experience.

### 6.2 Managerial implications

The main recommendation is that companies design and implement an omnichannel strategy. This paper shows that good design and integrating touchpoints into the consumer journey contribute to a better customer online experience and increase e-satisfaction. To achieve this, a homogeneous image that gives consumers the impression of consistency and continuity between all touchpoints must be established. It is also important that multiroomer needs are taken into account, not only in terms of the information or services needed in purchase problem-solving but also in terms of channel flexibility to adapt to unexpected issues.

These results suggest that for multiroomers to connect, engage, participate and interact, thematic cohesion and consistency of touchpoints must be enhanced (Wang, 2021, 2023). This research shows that multiroomers are especially sensitive to online retailers able to design a consistent and coherent narrative of the touchpoints they interact with on the shopping journey. Thus, OCJD helps to fight against the phenomenon of value co-destruction, where online and offline retailers see their value chain broken by showroomers, webroomers and multiroomers, who take advantage of them for research shopping (Daunt and Harris, 2017).

Statista (2023) identifies a list of online drawbacks that concern consumers and that can be solved with an omnichannel strategy: no opportunity to touch or feel products, returns, shipping and no sales support. The OCE can be improved by incorporating immersive technologies such as augmented reality and virtual reality, which allow bringing the online sensory experience closer to the brick-and-mortar environment (Wang, 2023). Another interesting aspect to connect and engage multiroomers is AI, which can help online retailers in sales support. AI tools are a breakthrough in facilitating real-time bi-directional communication with the customer, and in personalizing the experience at any of the touchpoints multiroomers interact with.

Sensory appeal is the dimension that contributes most to the formation of OCE, which requires careful product presentation on the website/app/social media. In order to improve OCE, organic marketing must also be promoted, as the multiroomers' buying process becomes less planned and merges with consumers' daily lives (Wang, 2021). Creating virtual environments, where multiroomers can find inspiration and have vivid experiences with the product, or a two-way personalized support on the different devices and (digital, mobile and social) media they interact with are aspects that should be incorporated into interactive marketing strategy. Shoppable videos (product showcases and other video content while allowing people to buy), personalized content, high-quality images of the product and allowing users to express themselves through user-generated content, posted in marketplaces, search engines, social media, YouTube and/or websites, are inspirational actions that increase customer engagement and connection.

However, this new technological environment must not overlook the fact that informativeness is a particularly relevant dimension of OCE in research shopping. First, search engine marketing should be a priority in omnichannel strategy, paying special attention to search engine optimization and search engine marketing campaigns. Second, verbal and visual website/app/social media design elements contribute to improving OCE (Bleier *et al.*, 2019). Aspects such as linguistic style, product descriptions, photos/videos, ratings and filters on the webpage will contribute positively to OCE. Consumers must be able to find the information they need to make a purchase decision quickly and transparently. This information must also be perfectly integrated across all channels and technologies to avoid contradiction that creates doubt in the consumer's mind. The goal should be a seamless OCE that makes life easier for consumers (Neslin, 2022).

Firms must then adopt consumer orientation in their omnichannel strategy, along with the marketing strategies of segmentation and customization. For all these reasons, a new position is required within the organization: a chief omnichannel officer (COO), whose function is responsible for designing the omnichannel consumer journey and monitoring its implementation. The environment is evolving swiftly, and technology is a key variable in this evolution. A COO profile should include responsibility for analyzing and integrating multichannel consumer journey touchpoints and customer technologies, and coordinating companies' departments and external providers, to create a seamless omnichannel customer experience.

### *6.3 Limitations and future agenda*

Sample size is the main limitation of this research. Identifying consumers who meet the condition of multichannel online and offline journey and an online purchase proved more difficult than we had anticipated. Despite a large initial sample size (1,458 responses), only 205 met the requirement. This sample size means that the results of this paper are exploratory in nature, and further research is needed to extrapolate them. Another limitation is that sampling was undertaken on social media (Facebook and Instagram), and this decision may lead to biased results (Benedict *et al.*, 2019; Kuhne and Zindel, 2020; Faelens *et al.*, 2021). Although these networks are deeply embedded in our society and the multiroomer profile can be quite matched to social media users, some sectors of the population are not users, whether through personal choice or technological limitations.

We believe this study opens up new lines of research. On the one hand, it is appropriate to call for more research on the interaction between multiple online and offline channels. This paper has pinpointed the significant influence of omnichannel journey design on online purchase experience and e-satisfaction. The impact on the offline purchase experience and satisfaction could also be explored. Another line of research would be to



further examine the control variables, analyzing gender and age differences in greater detail. Moderating variables, such as level of involvement with the product or culture, or personal characteristics, also need identifying if the omnichannel strategy is to be improved. Multiroomers outcomes other than e-satisfaction, such as trust, loyalty, Word-of-Mouth or engagement, could also be investigated. Finally, replicating this study in other countries, with the inclusion of cultural values, could shed light on adapting the omnichannel strategy to multicultural consumer needs.

### ORCID iDs

Miguel Angel Moliner  <https://orcid.org/0000-0001-9274-4151>

Vicent Tortosa-Edo  <https://orcid.org/0000-0002-7412-3818>

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**About the authors**

Miguel A. Moliner Tena, Ph.D., is Professor of Marketing at the Jaume I University (Castelló, Spain). He has published 81 academic papers in journals *Tourism Management*, *Journal of Retailing and Consumer Services*, *Journal of Business Research*, *Journal of Travel Research*, *Annals of Tourism Research*, *Corporate Social Responsibility and Environmental Management*, *Service Industries Journal*, *Journal of Services Marketing*, *International Journal of Bank Marketing*, *Journal of Sustainable Tourism*, *Review of Managerial Science* or *International Journal of Consumer Studies*, among others. He has a H-index of 22 in Journal Citation Research and 23 in Scopus. Miguel Angel Moliner is the corresponding author and can be contacted at: [amoliner@uji.es](mailto:amoliner@uji.es)

Vicente Tortosa-Edo, Ph.D., is Associate Professor of Marketing at the Jaume I University (Castelló, Spain). He has published seven academic papers in journals as *Journal of Cleaner Production*, *Journal of Risk Research*, *The Service Industries Journal*, *International Journal of Environmental Research and Public Health* and *Business Strategy and the Environment*.

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