VARIETY OF SHOPPING MODES: THEORETICAL FRAMEWORK, PIVOTAL FACTORS, AND MANAGERIAL IMPLICATIONS

Ignacio REDONDO [ID], Jean-Philippe CHARRON [ID]*

Departamento Financiación e Investigación Comercial,
Universidad Autónoma de Madrid, Madrid, Spain

Abstract. With the development of e-commerce and smartphones, consumers can use a variety of shopping modes (i.e., showrooming, webrooming, and completely offline/online shopping), each of which provides specific advantages in terms of price, assortment, service, etc. Using a great variety of these shopping modes can confer many benefits. However, previous studies have found evidence of sizable segments of consumers who typically avoid using a great variety of shopping modes. To understand the contrast in consumers' variety of shopping modes, we propose a theoretical framework and measure the effect of the desired variety in the information-seeking and purchase processes. Results – from a representative sample of the Spanish consumers – confirm that the variety of shopping modes pivots on the extent to which e-commerce use, smartphone use, offline and online interactivity, and online device interchangeability differ. Better understanding the variety of shopping modes may help marketers adjust their channel strategies to the actual preferences of different consumer segments and assess the economic viability of an omnichannel approach.

Keywords: shopping behaviour, consumer segmentation, e-commerce, showrooming, webrooming, channel management.

JEL Classification: M31, M10, L20.

Introduction

E-commerce and smartphones have multiplied shopping modes, defined here as the basic strategies that consumers use in their search and purchase behaviour. The newer shopping modes provide significant advantages compared to the traditional shopping mode in a physical store. For example, consumers (a) can save a lot of time by performing the entire purchasing process online (Colla & Lapoule, 2012); (b) can obtain significant price savings by showrooming, that is, exploring products in physical stores and then buying them online (Gensler et al., 2017); and (c) can reduce the uncertainty of their decisions by webrooming, that is,

---

exploring the widest assortment offered online before buying the product in a physical store (Flavián et al., 2016). Thus, it is reasonable to expect that consumers will progressively adopt newer shopping modes. It also seems reasonable that all consumers progressively enlarge their variety of shopping modes because the use of a wider variety helps choose the most advantageous mode for each shopping task. However, compelling evidence – from countries with notably high rates of Internet and smartphone usage – contradicts that all consumers are adopting the newer shopping modes and are enlarging their variety of shopping modes. Remarkably, a large majority of consumer segmentation studies have identified the presence of a substantial segment of shoppers who typically carry out the entire purchase process offline, regardless of the type of product purchased (Neslin, 2022). Other studies report substantial segments of consumers who carry out the entire information-seeking and purchase process either in physical stores or in online stores (Herhausen et al., 2019; Kondo & Okubo, 2022). Further research shows that multi-mode shopping arouses enthusiasm among the most innovative and involved consumers but also generates apathy among single-mode shoppers (De Keyser et al., 2015; Konuş et al., 2008). Besides, marketing campaigns to promote multi-mode shopping can provoke psychological reactance if they make suggestions that do not match consumer preferences (Montaguti et al., 2015). Even reversion has been observed from a popular supermarket banner, where one third of online grocery shoppers left reverted back to an offline purchase process after some time (Frasquet et al., 2021).

The observed variety of shopping modes is a somewhat counterintuitive phenomenon that remains largely unexplored. Mishra et al. (2021) called to examine what individual factors lead many consumers to avoid the newer shopping modes despite their considerable advantages. The same authors also highlighted the need for a theoretical framework that helps to better understand why consumers systematically differ in their variety of shopping modes. New insights into the variety of shopping modes may be of interest not only to scholars working in consumer behaviour but also to manufacturers and retailers selling to consumers. Indeed Ailawadi and Farris (2017) called to provide criteria for differentiating shopper groups and to implement segmentation strategies that reduce costs not justified by actual demand. In this regard, we argue that the presence of sufficient multi- and omni-mode shoppers should be assessed in the target market before implementing an integrated omnichannel approach. This ideal approach involves synergetic management of all services offered by both online and offline channels to give the consumer a seamless and consistent experience in any of the services used, at all stages of the purchase process (Verhoef et al., 2015). Omnichanneling is widely considered crucial for marketers to maintain and improve their profitability in an increasingly competitive and technology-driven business environment (e.g., Quach et al., 2022). But quite importantly, omnichanneling requires (a) making very large investments to integrate all business processes (Cui et al., 2021; Hajdas et al., 2022) and (b) taking non-negligible risks, such as channel cannibalization and rivalry with lower-cost non-omnichannel competitors (Mladenow et al., 2018; Saha & Bhattacharya, 2020).

As far as we know, this is the first study that defines the variety of shopping modes as how many of the four basic strategies (completely offline/online shopping, webrooming, and showrooming) consumers use in their search and purchase behaviour. In the next section we argue that such variety does not depend simply on the adoption of technologies that

enable newer shopping modes but depends primarily on the variety desired by consumers in their information-seeking and purchase processes. Consistent with optimal stimulation level theory, we hypothesize that a wide (narrow) variety of shopping modes is induced by high (low) levels of e-commerce use, smartphone use, offline-online interactivity, and online device interchangeability. The hypotheses were tested using a multinomial logistic regression model on data from a nationally representative cross-sectional survey in Spain (see the Methodology section). All the hypotheses were substantially confirmed, and the predictors explained approximately one third of the change in the variety of shopping modes (Results section). These findings suggest that consumers might be valuing their subjective benefits (performing purchasing processes in their preferred ways) more than the obtainable objective advantages (lower prices, wider assortment, etc.). The Managerial implications subsection discusses how the variety of shopping modes could be used by manufacturers and retailers to adjust their strategies to the different consumer segments observed. As limitations and future research avenues, we describe the restrictions of our data source (which did not differentiate between product types, did not provide dynamic insights, and did not allow for ad hoc questions) as well as the information that would be interesting to use in future studies to improve theoretical understanding and practical management of the variety of shopping modes.

This study makes a twofold contribution. At a theoretical level, it provides an insightful conceptual framework that helps understand why consumers systematically differ in their variety of shopping modes rather than directly opt for the advantageous higher levels of variety. From a practical standpoint, the here introduced variety of shopping modes is disclosed as a potential segmentation criterion, which easily allows for the identification of well-differentiated segments and may help marketers to (a) align their channels with the most attractive segments and (b) assess the economic viability of an omnichannel strategy.

1. Conceptual framework and hypothesis development

1.1. Variety of shopping modes

A variety of shopping modes may be understood as a four-component scheme in which *individuals* use a particular range of *strategies* to perform their shopping *tasks* in a specific *environment*. A shopping task basically consists of collecting information about the various offers, evaluating the viable options, and buying the chosen one. Two major technological innovations have changed the environment in which purchasing tasks were traditionally performed. First, e-commerce has empowered users to easily access a wider assortment of products, gather more information on product features, consult price comparisons, search discounts and bargains, and take advantage of other online shopping benefits. Second, smartphones have provided portability and mobility to access the Internet wherever and whenever users want to explore product features, compare prices (also online vs. in-store), participate in promotions, and complete the purchase with other convenient advantages. These two innovations have made it possible to carry out purchasing tasks by means of four basic strategies (Figure 1): exploring and buying the product in a physical store (completely offline shopping); exploring the product on the Internet but buying it in a physical store (webrooming); exploring the product in a physical store but buying it online (showrooming); and ex-

ploring and buying the product on the Internet (completely online shopping). In theory, this whole repertoire of strategies can be used by any individual who accesses the Internet and owns a smartphone. But in practice, there is great heterogeneity in the number of strategies used, which could be attributed to different levels of individual *adaptability* and *resistance* to environmental change. On the one hand, individuals vary in their ability to adaptively choose which of the possible strategies best suits the changing environment and allows the specified task to be performed more efficiently (Lovett & Schunn, 1999). On the other hand, individuals vary in their resistance to environmental change, which makes them persistent in using the same strategy to accomplish a specific task, despite being aware that there are better alternatives or incentives for change (Polites & Karahanna, 2012). However, these opposing trends provide only a partial understanding of the phenomenon under study.

EXPLORE A PRODUCT'S FEATURES AND PRICE...

	in a physical store	on the Internet
in a physical store	Completely offline shopping	Webrooming
on the Internet	Showrooming	Completely online shopping

AND BUY THE PRODUCT...

Figure 1. Classification of shopping modes

We suggest that a variety of shopping modes can be better understood under the umbrella of *optimum stimulation level* (OSL), a concept that was originally developed in psychology and then widely used to explain consumer variety-seeking behaviour. According to the OSL, individuals are satisfied when obtaining a perceived ideal level of stimulation from the environment, while they try to increase (reduce) environmental stimuli when perceiving a level of stimulation below (above) their ideal (Raju, 1980). For example, the OSL motivates each individual to visit a greater or lesser number of physical/online stores in their shopping tasks. The desire to satisfy the ideal level of stimulation is a primary motivational mechanism for individuals to engage in their preferred level of varied behaviour (Menon & Kahn, 1995; Steenkamp & Baumgartner, 1992). Not surprisingly, previous studies have found a strong relationship between OSL and variety-seeking behaviour (Kwon et al., 2023; Mohan et al., 2012) as well as some consistency in the levels of varied behaviour that individuals prefer in different fields of action (Trivedi, 1999). Motivation for varied behaviour arises both from factors indirectly derived from the context (e.g., availability of technological innovations) and from factors directly linked to the individual's dispositions (e.g., propensity for innovation, risk, and exploration) (Burns, 2006). We argue that the motivation to increase (reduce) the repertoire of shopping modes pivots primarily on the individual's desire for higher (lower) levels of variety in purchase-related behaviours. This study focuses on four pivotal factors for which information was available in our dataset. So, we next hypothesize that the variety of shopping modes pivots on the variety in the use of e-commerce and smartphones (two technological innovations that allow for increasing shopping modes) as well as by the variety in levels of offline/online interactivity and online device interchangeability (two personal dispositions that lead to engagement in more varied shopping strategies).

1.2. Variety of e-commerce use

Understood as the range of product categories (e.g., books, clothing, and food) purchased online, variety of e-commerce use indicates the extent to which consumers have adopted the Internet as a channel to perform their shopping tasks. Variety of e-commerce use is strongly influenced by the individual's degree of innovativeness (Blake et al., 2003), which in turn is strongly related to the variety-seeking tendency with respect to retail facilities (Mittelstaedt et al., 1976), retail types (Rohm & Swaminathan, 2004), and retail channels (Konuş et al., 2008).

Given that, in the traditional purchasing process, those who buy a greater number of product categories tend to use more shopping channels (Kumar & Venkatesan, 2005) and experts tend to use more strategies than do novices to perform the same tasks (Holyoak, 1991), consumers with experience in a greater variety of online purchases are expected to be more able and willing to use a greater variety of strategies in their Internet-based shopping. Recent evidence indeed suggests that individuals with more e-commerce experience tend to choose multi-mode strategies more regularly (Jiao & Hu, 2022). In the opposite situation, since performing complex activities on the Internet requires perceived self-efficacy and use experience (Eastin & LaRose, 2000), consumers with low variety of online purchases are expected to be less able and less willing to engage in the most complex online shopping behaviour. In this regard, consumers with less experience and lower self-efficacy in multichannel shopping behaviour tend to be reluctant to adopt the most innovative online shopping modes (Chiu et al., 2011; Mahatanankoon, 2007). From the above arguments, we propose the following hypothesis:

H1: The greater the variety of product categories that consumers buy online, the more likely they will use a greater variety of shopping modes.

1.3. Variety of smartphone use

The variety of smartphone use refers to the range of activities performed on smartphones and indicates the extent to which users have adopted this disruptive device which, compared to a traditional mobile phone, has made it possible to perform a much wider variety of activities, such as taking pictures, recording videos, and many online tasks. Though most of these activities are by no means new, performing them on smartphones reflects a certain propensity to innovate (Kamboj & Gupta, 2020). Therefore, executing a greater variety of smartphone activities suggests a higher degree of innovativeness. In addition, and consistent with the uses and gratifications theory (Stafford et al., 2004), performers of many smartphone activities seek and obtain a great variety of gratifications including those related to content (e.g., taking pictures of a special event), process (e.g., choosing the best picture), and socialization (e.g., sharing this picture on a social network). Furthermore, practicing many smartphone activities exposes users to greater security risks related to activity monitoring, location tracking, and non-consensual use of personal information (Sipior et al., 2014).

Engaged in more innovative, variety-seeking, and risk-taking behaviours, performers of more smartphone activities understandably seek higher levels of stimulation when using their smartphones. Interestingly, the consumers most likely to adopt mobile commerce

innovations are those who demand higher levels of stimulation (Avornyo et al., 2019). On these grounds we may expect that users performing more smartphone activities will use a greater variety of shopping strategies to obtain higher levels of stimulation in their shopping tasks. Therefore,

H2: The greater the variety of activities that consumers perform on smartphones, the more likely they will use a greater variety of shopping modes.

1.4. Variety of offline and online interactions

Offline (online) activities can be combined with other related online (offline) activities. For example, users can watch a sports game on TV and simultaneously use their smartphones to chat on WhatsApp about the game, track statistics on a specialised website, and gamble on the outcome. Variety of offline and online interactions refers to the extent to which consumers combine offline and online activities in their daily tasks. Certain consumers will be most satisfied when combining their offline (online) activities with related online (offline) activities, while in the opposite situation other consumers will be most satisfied when performing their activities exclusively either offline or online. The level of offline and online interactivity will be intentionally sought to satisfy the desired level of stimulation, which can be divided into two dimensions: (a) to what extent consumers wish to improve their offline (online) activity experiences with the hedonic/utilitarian rewards specific to the related online (offline) activities; and (b) to what extent consumers wish to be engaged in two or more activities during the same block of time ("polychronicity") rather than to be engaged in one activity at a time ("monochronicity"). Importantly, desire for rewards (Martenson, 2018) and tendency for polychronicity (Lindquist & Kaufman-Scarborough, 2007) are positively related to variety-seeking tendencies in the context of purchasing behaviour.

Understandably, individuals combining more online and offline activities will be more likely to act accordingly in their shopping tasks by practicing showrooming and webrooming, two strategies based on the combination of online and offline tasks. Conversely, the lack of offline and online interactivity may cause the entire purchasing process to be conducted exclusively either offline or online. In other words, performers of a greater (lesser) variety of online and offline interactions will likely develop more (less) online-offline shopping combinations, hence engaging in greater (lesser) levels of variety of shopping modes. Hence,

H3: The greater the variety of online and offline interactions performed by consumers, the more likely they will use a greater variety of shopping modes.

1.5. Variety of cross-device online information use

This variety captures the extent to which individuals use online information indistinctly through fully mobile devices (i.e., those typically used in mobility situations, such as when exploring a store or walking in the street) and through devices usually associated with a certain degree of stationarity. Thus, this variety is determined by the range of online information activities (e.g., reading digital newspapers, checking price comparison websites, and searching for others' opinions) that users perform through both handheld mobile devices (smartphones) and mostly stationary devices (desktops/laptops).

The level of this variety can be decomposed into two components. The first is the level of demand for online information activities, which, according to Raju (1980), is mainly motivated by the curiosity of users and is indeed associated with their desired levels of variety-seeking behaviour. The second is the level of cross-device information search, which, according to Steenkamp and Baumgartner (1992), indicates the so-called "diversive curiosity," that is, the tendency of users to explore using interchangeable methods, each of which provides specific benefits and advantages (e.g., by means of a smartphone to get information anywhere and enjoy personalised location services, and by means of a desktop/laptop to explore all the desired information with a large screen and an unlimited Internet connection).

Users who prefer a more (less) varied exploration when seeking general information will probably also prefer a more (less) varied exploration when seeking specific information for their purchases. Furthermore, performing the same task (getting information) through various strategies (via mobile and stationary devices) leads to the acquisition of adaptive skills (Hansberger et al., 2006). These adaptive skills will allow users to perform another task (shopping) more efficiently by using the same varied strategies (cross-device-assisted shopping modes). From all the above, a positive relationship may be expected between the variety of cross-device online information use and the variety of shopping modes. Therefore,

H4: The greater the variety of online information activities that consumers perform on both mobile and stationary devices, the more likely they will use a greater variety of shopping modes.

2. Methodology

2.1. Data

Information was extracted from *AIMC Marcas*, a secondary data source funded by mass media and advertising agencies in Spain and used for managing media content and advertising campaigns. Since its inception in 2003, *AIMC Marcas* has collected data from an annual survey in which approximately 10,000 individuals (aged 14 or older, living in Spain) express (a) their habits and opinions about online and offline media and (b) their behaviours and attitudes related to consumption, shopping, leisure, and holidays. Survey development (i.e., questionnaire design, fieldwork implementation, and data collection) is executed by *Kantar TNS* company, while the entire process is managed and controlled by *AIMC* (*Asociación para la Investigación de Medios de Comunicación*). The latter is an independent and non-profit organization representing stakeholders from the Spanish media and advertising industries. *AIMC Marcas* methodology largely meets the quality standards that are recommended for secondary sources used in academic research (Berry et al., 2022; Porter et al., 2019).

We used the data collected in 2018. Regarding that year's sample, 87% of the participants came from regular panellists from *Kantar TNS* surveys. Panellists were selected through a purposive sampling process designed to reflect the general population in terms of region, municipality, sex, age, socioeconomic status, family role, and household size.

Remaining participants were individuals that had previously partaken in another *AIMC* survey (*Estudio General de Medios*) after being chosen via a randomised selection process. The self-administered questionnaire could be completed either digitally via the Internet (option chosen by one third of the participants) or physically via a paper form delivered and returned by mail. To encourage participation, a reward (50 euros in cash or a similarly priced gift to be chosen from a catalogue) was offered to participants who adequately responded to the questionnaire. A total of 10,789 completed questionnaires were received, but 332 were invalidated for containing double responses or other inconsistencies. In turn, we excluded 2,531 valid participants who reported not accessing the Internet and/or not having a smartphone. Thus, our final sample consisted of 7,926 subjects, with the following demographic distribution: (a) 45% were male and 55% were female; (b) 21% were aged between 14 and 34 years, 44% were aged between 35 and 54 years, and 35% were aged 55 years or older; and (c) 6% had primary education or less, 52% had completed some form of secondary education, and 42% had completed some form of tertiary education.

2.2. Variable description

For all variables, variety was defined as the degree to which an individual exhibits behavioural diversity in the specific activity domain. As in many previous studies (e.g., Adomavicius et al., 2015; Gullo et al., 2019), all variety measures were operationalised by counting the number of different activities performed in the corresponding domain.

Regarding the dependent variable, Variety of shopping modes was calculated by counting the number of the four studied shopping modes reported by participants, who had been asked whether or not they had performed each of the following actions in the last 12 months: exploring a product's features and price in a physical store and buying it in a physical store (for measuring Completely offline shopping), exploring a product's features and price on the Internet and buying it in a physical store (Webrooming), exploring a product's features and price in a physical store and buying it online (Showrooming), and exploring a product's features and price on the Internet and buying it online (Completely online shopping).

Concerning the independent variables, Variety of e-commerce use was measured by counting how many of the 19 product categories suggested (e.g., books, cosmetics, and flowers) had been purchased online in the last 12 months. Variety of smartphone use was determined by counting how many of 21 smartphone-based activities (e.g., taking pictures, playing games, and reading QR codes) were usually conducted. Variety of offline and online interactions was measured with respect to TV-related activities as suggested by Srivastava et al. (2016) and was operationalised by counting how many of seven TV-related online activities (e.g., reading and commenting on social networks about programs watched) were performed while watching conventional TV programs. Finally, Variety of cross-device online information use was calculated by adding up how many of 21 online information activities (e.g., reading newspapers and checking price comparison websites) were conducted indistinctly with fully mobile devices (smartphones) and mostly stationary devices (desktops/laptops).

2.3. Statistical analyses

We preliminarily assessed (a) the interconnection between all variables through the corresponding Pearson correlation coefficients, (b) the multicollinearity among the independent variables through their values of tolerance and variance inflation factor (VIF), and (c) a visual comparison of means of the independent variables across the dependent variable.

To simultaneously test the formulated hypotheses and assess the effect sizes, we built a multinomial logistic regression model in which the four-level dependent variable was explained by the four continuous independent variables. Note that building a simple linear regression model would have been inappropriate due to the limited values of the dependent variable and the violations of the underlying assumptions (Gelman & Hill, 2006), whereas logistic regression models do not require strong parametric assumptions such as multivariate normality and homogeneity of variances (Hair et al., 2010). Multinomial logistic regression uses maximum likelihood estimation to evaluate the probability of categorical membership and measures the model estimation fit using -2 log of the likelihood value ($-2LL$) in which zero corresponds to a perfect fit. The contribution of each independent variable to the model fit is evaluated through the resulting change in $-2LL$, which is assessed by the chi-square test.

As multinomial logistic regression is an extension of binary logistic regression, the four levels of the dependent variable can be compared through a series of three binary logistic regressions (one vs. two shopping modes, two vs. three shopping modes, and three vs. four shopping modes). The coefficients of each binary logistic regression are very robust and easy to interpret (Hair et al., 2010): (a) the sign of the *B* coefficient indicates the direction of the relationship, so that a positive (negative) coefficient manifests that the first group scores higher (lower) on the independent variable than the second group; (b) the Wald statistic tests the significance of the *B* coefficient, so that a positive test implies that the independent variable contributes to explaining group differences more than chance; and (c) the value of the *Exp(B)* coefficient indicates the magnitude (in terms of odds) of the relationship, so that (*Exp(B)* – 1) x 100 equals the percentage change in odds between groups for each unit change in the independent variable.

Statistical analyses were conducted with SPSS for Windows (version 26, IBM SPSS, Armonk, NY, USA, 2019). The significance level was established at $p < 0.05$.

3. Results

To begin with, 81.6% of respondents reported having practiced Completely offline shopping, 49.7% Webrooming, 24% Showrooming, and 49.7% Completely online shopping. With respect to the number of shopping modes practiced, 38.5% performed only one of the modes, 31.8% two modes, 15.9% three modes, and 13.8% the four modes.

Concerning the correlations between variables (Table 1), the variety of shopping modes was strongly related to the four independent variables, which in turn were strongly related to each other. All the variety-related variables showed strong correlations with age (negative) and education (positive). The variety of shopping modes was slightly more associated with men than women.

Regarding multicollinearity assessment, the diagnostic values of Variety of e-commerce use (Tolerance = 0.80, VIF = 1.24), Variety of smartphone use (Tolerance = 0.85, VIF = 1.18), Variety of offline and online interactions (Tolerance = 0.88, VIF = 1.13), and Variety of cross-device online information use (Tolerance = 0.84, VIF = 1.19) were all substantially below the problematic thresholds, indicating that the four independent variables were not redundant predictors.

Figure 2 shows predictor means at each level of the dependent variable. A preliminary comparison of these means indicates the presence of an increase for the four predictors at each additional level of the dependent variable.
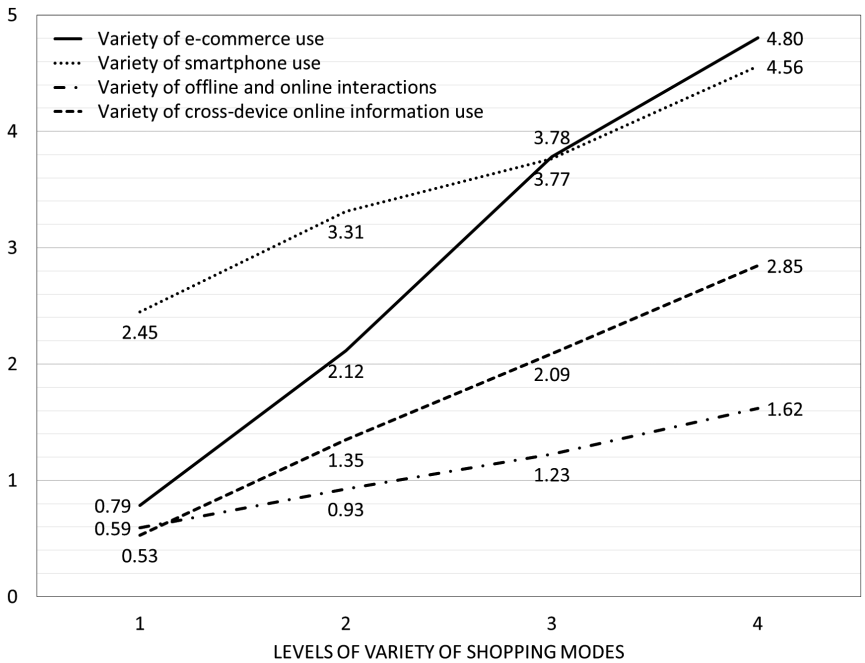

Figure 2. Means of predictors across levels of variety of shopping modes.

Concerning the model's results (Table 2), Likelihood ratio tests indicate that each predictor significantly contributed in explaining between-level differences, but the contribution sizes varied substantially: Variety of e-commerce use stood out with the highest chi-square value, and far behind, with decreasing values, were Variety of cross-device online information use, Variety of smartphone use, and Variety of offline and online interactions. Goodness-of-fit model indicators show that the four predictors explained approximately one third of the variation in the dependent variable.

Parameter estimates of the consecutive binary logistic regressions provide reliable tests of the hypotheses. With respect to H1, each increase in the number of shopping modes practiced was linked to a significant increase in Variety of e-commerce use, with large or medium effect sizes (46% increase in the odds ratio between one and two shopping modes, 29% increase between two and three shopping modes, and 9% increase between three and four shopping modes). Regarding H2, significant increases in Variety of smartphone use

Table 1. Pearson correlation coefficients between variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Variety of shopping modes							
(2) Variety of e-commerce use	0.55**						
(3) Variety of smartphone use	0.28**	0.30**					
(4) Variety of offline and online interactions	0.22**	0.22**	0.29**				
(5) Variety of cross-device online information use	0.32**	0.37**	0.21**	0.21**			
(6) Sex	−0.04**	−0.09**	0.04**	0.02	−0.13**		
(7) Age	−0.29**	−0.22**	−0.27**	−0.24**	−0.18**	0.00	
(8) Education	0.27**	0.27**	0.15**	0.09**	0.23**	−0.02*	−0.22**

*Note: * $p < 0.05$. ** $p < 0.01$.*

were found from one to two shopping modes (10% increase in odds) and from three to four shopping modes (6% increase in odds), but no significant difference was found between two and three shopping modes, so this hypothesis was only partially supported. Concerning H3, significant increases in Variety of offline and online interactions were consistently found in the consecutive binary logistic regressions with similar, moderate effect sizes (7%, 5%, and 6% increases in odds). Regarding H4, significant increases in Variety of cross-device online information use were also consistently observed, with a medium size effect in the first regression (17%) and small size effects in the following ones (3% and 4%).

4. Discussion

Initial results are worth highlighting: the higher the level of variety of shopping modes, the lower its frequency, and even more remarkably, single-mode shoppers almost triple the number of omni-mode shoppers. But this finding is certainly not new because other studies have already found substantial segments of consumers who typically avoid using multiple shopping modes (e.g., Kondo & Okubo, 2022; Neslin, 2022). In contrast, our other findings do provide new insights that may help better understand this surprising phenomenon.

Table 2. Multinomial logistic regression for variety of shopping modes

Likelihood ratio tests				
Effect	−2LL of reduced model	Chi-square	df	Sig.
Intercept	11 899.24	3271.42	3	$p < 0.01$
Variety of e-commerce use	10 393.32	1765.49	3	$p < 0.01$
Variety of smartphone use	8722.00	94.18	3	$p < 0.01$
Variety of offline and online interactions	8676.60	48.78	3	$p < 0.01$
Variety of cross-device online information use	8770.49	142.66	3	$p < 0.01$

End of Table 2

Overall model fit						
	Cox and Snell		Nagelkerke		McFadden	
Pseudo R-Square	0.33		0.36		0.16	
Parameter estimates						
One vs. two shopping modes	B	Std. Error	Wald	df	Sig.	Exp(B)
Intercept	−1.14	0.05	520.63	1	$p < 0.01$	
Variety of e-commerce use	0.38	0.02	436.54	1	$p < 0.01$	1.46
Variety of smartphone use	0.09	0.01	47.71	1	$p < 0.01$	1.10
Variety of offline-online interactions	0.07	0.02	9.51	1	$p < 0.01$	1.07
Variety of cross-device online inf. use	0.15	0.02	70.38	1	$p < 0.01$	1.17
Two vs. three shopping modes	B	Std. Error	Wald	df	Sig.	Exp(B)
Intercept	−1.55	0.07	477.18	1	$p < 0.01$	
Variety of e-commerce use	0.25	0.02	276.59	1	$p < 0.01$	1.29
Variety of smartphone use	0.01	0.01	0.16	1	0.69	1.01
Variety of offline-online interactions	0.05	0.02	5.68	1	$p < 0.05$	1.05
Variety of cross-device online inf. use	0.03	0.01	6.10	1	$p < 0.05$	1.03
Three vs. four shopping modes	B	Std. Error	Wald	df	Sig.	Exp(B)
Intercept	−0.92	0.09	102.78	1	$p < 0.01$	
Variety of e-commerce use	0.08	0.01	32.15	1	$p < 0.01$	1.09
Variety of smartphone use	0.06	0.02	15.78	1	$p < 0.01$	1.06
Variety of offline-online interactions	0.06	0.02	6.67	1	$p < 0.01$	1.06
Variety of cross-device online inf. use	0.04	0.01	7.09	1	$p < 0.01$	1.04

It is quite surprising that many consumers do not attempt to gain the objective advantages of using a wide repertoire of shopping modes: the more consumers adopt different shopping strategies, the more likely they are to find more competitive prices, more convenient services, wider product assortments, and other favourable purchase conditions. This study's results suggest that such consumers may be seeking the subjective advantages of using a narrow repertoire of shopping modes: users of few shopping strategies can satisfy their ideal desires for familiarity and simplicity by keeping low levels of variety in their purchase-related behaviours.

The model's results reveal that the variety of shopping modes pivots on the levels of variety of e-commerce use, smartphone use, offline and online interactivity, and online device interchangeability. Indeed, these four factors explained up to one third of the variation in variety of shopping modes. Factors were sufficiently different from each other to have non-redundant explanatory powers. The comparative analysis of the levels of the dependent variable provided full support for three out of the four hypotheses: the practice of each additional shopping mode was linked to significant increases in the number of product categories purchased online (H1), the number of offline and online interactions (H3), and the number of cross-device online information activities (H4). However, H2 was only partially supported

because the step from two to three shopping modes did not involve a significant change in the number of smartphone activities (although an increasing trend is apparent throughout the entire succession).

The substantial confirmation of the hypotheses is to our knowledge an original contribution to the growing literature on shopping behaviour. Remarkably, this study is the first to define the variety of shopping modes as the number of basic shopping strategies (showrooming, webrooming, and completely offline/online shopping) used by consumers. The explanatory factors are also originally defined as the levels of variety that consumers have with respect to the two key technological innovations (e-commerce and smartphones) and two relevant personal dispositions (offline/online interactivity and online device interchangeability). The confirmed hypotheses suggest that the variety of shopping modes is the result of a more general preference for variety that everyone seeks in their behaviours, which is consistent with the OSL. These findings can answer Mishra et al.'s (2021) questions on why some individuals do not adopt the newer shopping modes and why consumers systematically differ in their variety of shopping modes.

Based on the model's results, we can speculate on the future evolution of the variety of shopping modes. Understandably, the levels of the four predictors will increase over time because of the ongoing diffusion of digital technologies in all social strata and the generational replacement of digital immigrants by digital natives. Increases in predictors are then expected to produce an increase in the variety of shopping modes, which could gradually change from its current decreasing shape to an inverted U-shape. Note that, according to the OSL, consumers' responses to environmental stimuli typically follow an inverted U-shaped pattern (Raju, 1980; Steenkamp & Baumgartner, 1992).

4.1. Managerial implications

The variety of shopping modes surface as a potential segmentation criterion with which manufacturers and retailers could adapt more effectively to diverse shopping preferences. This segmentation criterion falls within those previously defined from observed purchase behaviour, such as shopping styles (Papatla & Bhatnagar, 2002) and channel choices (Wang et al., 2014). As these criteria, the variety of shopping modes meets the generally accepted requirements for effective segmentation, which are clear definition, easy measurement, sufficiently large size, differentiation in purchasing strategies, and sustainability over time.

The variety of shopping modes can be used by manufacturers and retailers in many ways which description exceeds the limits of this study. We will only discuss the general implications arising from the generic distinction between consumers using a greater variety of shopping modes (for brevity, "variety seekers") and consumers using a lesser variety of shopping modes ("variety avoiders"). As detailed below, future studies might examine the specific implications derived from comparing distinct levels of variety of shopping modes for different product categories.

Regarding segment attractiveness, variety avoiders were much more frequent than variety seekers at the data collection time, although it is reasonable to expect these segments' sizes to converge over time. In turn, variety seekers have been used to provide a higher average

profitability than variety avoiders, due to the positive relationship between the number of purchasing channels used and the level of profitability of shoppers (Kumar & Venkatesan, 2005; Montaguti et al., 2015). In relation to costs, implementing an omnichannel approach to satisfy variety seekers is known to imply substantial investments in interactive technology, logistics capacity, and integrated organizational structures (Mladenow et al., 2018). Concerning prices and margins, variety seekers will explore more purchase options and discover lower prices, which will reduce the margins of manufacturers and retailers. In turn, variety avoiders will find a narrower price range in their limited exploration and will have to pay at least the lowest price found, which will allow manufacturers and retailers to charge higher margins.

To counter the erosion of margins due to increased multichannel competition, manufacturers may produce goods to be sold exclusively by single retailers, either under retailers' private labels or exclusive branding. Both approaches, compared to that of focusing on national brands, allow manufacturers and retailers to better defend their margins from competitors. Exclusive store brands may be chosen indistinctly by variety avoiders and variety seekers. The former will tend to do simple scans at their favourite retailers and then buy the exclusive brands they like without doing additional exploration. The latter will tend to do more complex scans but will have to buy the exclusive brands they like at the corresponding retailer because they will not be able to find lower prices elsewhere. An illustrative, albeit anecdotal, case refers to the multitude of large and small manufacturers that have signed long-term contracts with Mercadona to produce this supermarket chain's own brands. During the last decade, Mercadona has achieved an undisputed leadership in the Spanish grocery retail sales through a sophisticatedly simple strategy: offering a narrow brand assortment that usually includes a quality private label for each product, ensuring everyday low prices, and providing a deliberately substandard online shopping service (Hernando-Cuñado et al., 2019). Moreover, the recent explosion of private labels for online retailers such as Amazon and JD provides great opportunities for small/new manufacturers to quickly achieve significant market positions and for well-established manufacturers to defend themselves from competition with a more diversified brand portfolio.

The situation is quite different when manufacturers sell their brands through multiple retailers. This situation allows shoppers to engage in free-riding behaviour, i.e., exploring desired products at high-service retailers for free but ultimately purchasing the chosen products at lower prices at limited-service retailers (Burns, 2006). Consumers' free-riding behaviour puts pressure on retailers to determine appropriate levels of price and service. But this pressure certainly varies depending on the type of consumer: variety seekers demand more diverse shopping channels and work harder to find low prices, while variety avoiders more easily accept the price and service levels found at their preferred retailers. Strategies for adapting to these consumer groups are linked to the types of retailers: those that only sell in brick-and-mortar stores ("pure-play offline retailers"), those that only sell through the Internet ("pure-play online retailers"), and those that sell both offline and online ("dual retailers").

Pure-play offline retailers, compared to their online counterparts, must support higher fixed costs, and thus set higher prices to ensure sufficient margins. With these constraints, a potentially profitable strategy is to set high prices and adopt a price-matching policy, i.e., a commitment to match any competitor's prices. In response to this policy, variety seek-

ers (avoiders) are more (less) likely to explore prices at competitive retailers and eventually more likely to buy the product in the same store at the lowest price found elsewhere (at the price posted there). Thanks to this price discrimination strategy, pure-play offline retailers can obtain a high margin from variety avoiders and a reduced margin from variety seekers.

Pure-play online retailers can set comparatively lower prices, which attract both variety seekers and variety avoiders. After exploring these retailers' products, variety seekers are more likely to visit the brick-and-mortar stores, to taste and feel the same products there, and to buy and enjoy them immediately (webrooming). To avoid this practice, pure-play online retailers are advised to use a lenient product return policy, i.e., a commitment to refund the price of returned products at no or low cost. This policy is more advisable for those pure-play online retailers that have higher proportions of variety seekers among their customers.

Dual retailers, compared to the other ones, must make the largest investments, and support the highest fixed costs, while facing the largest potential market composed of online and offline shoppers. While aspiring to reach all types of shoppers, dual retailers should focus on stimulating variety seekers through a fully integrated omnichannel offering that provides them with a seamless experience across all shopping modes. Channel integration, defined as the mutual support of and interchangeability between offline and online channels (Chiu et al., 2011), should be encouraged by inward activities, such as strengthening the collaboration between offline and online marketing teams, and outward activities, such as allowing consumers to return their online purchases in-store. Dual retailers should also help variety seekers follow cross-channel paths-to-purchase through means that facilitate both an offline-to-online path (e.g., in-store free wireless service, iBeacons, QR codes, tablets/kiosks to access the retailer's website, interactive touch screens, and smartphone apps for contactless/deferred payment) as well as an online-to-offline path (e.g., digital-to-store campaigns, click-and-collect service, and smartphone apps for downloading in-store redeemable coupons).

4.2. Limitations and future avenues of research

As a notable limitation, participants were asked if they had used the different shopping modes, regardless of the type of product. As such, this information represented the overall behaviour but completely ignored the particularities of each product type. Not surprisingly, the levels of desired stimulation and actual exploration are affected by various factors such as the product's purchase frequency and hedonic/utilitarian nature as well as the shopper's situational involvement (Yurova et al., 2017). From a management standpoint, it is particularly important that future studies examine the variety of shopping modes in different product categories to facilitate its application as a segmentation criterion. These studies should quantify the size of each level of variety of shopping modes, evaluate the potential benefits and costs of targeting the different segments, and design programs tailored to the preferences of targeted segments.

Another limitation deals with the cross-sectional nature of the data collected, which provides a static representation of a phenomenon that is truly dynamic: consumers' tendencies to seek and avoid variety are not stable but change over time (Bawa, 1990). Future longitudinal studies might examine when and why these changes occur. We tentatively suggest two pos-

sible changes: first, variety avoiders might discover the advantages of omni-mode shopping when buying a product with high hedonic value and high situational involvement, and the resulting satisfactory experience might lead them to extending the learned shopping modes to other products; second, variety seekers might start enjoying the simple and direct shopping modes when having less time/motivation for complex explorations, and later they might use the same shopping modes more regularly as long as such personal circumstances remain.

Moreover, as the COVID-19 pandemic occurred after data collection, its impact on the variety of shopping modes could not be measured in this study. However, it is well documented that the lockdowns accelerated e-commerce (Segovia et al., 2021; Truong & Truong, 2022) and that the lifting of lockdowns triggered both the revival of offline shopping and the consolidation of online shopping modes adopted during the lockdowns (Hansson et al., 2022; Papagiannidis et al., 2023). Thus, it is very likely that the COVID-19 pandemic has finally led to an increase in the variety of shopping modes.

We also had the limitation of not being able to include ad hoc questions in the secondary data source used. Though the predetermined questions allowed us to assess four predictors, other potentially influential factors were ignored. Future studies might include other behavioural variety measures, such as the variety of online/offline social activities, technological innovations adopted, and synchronous/asynchronous exploration activities. Furthermore, it would be very convenient to add new indicators related to cognitive variety prior to making utilitarian/hedonistic decisions (e.g., the variety of sources of information sought, evaluation criteria used, and alternative decisions considered). We believe that these indicators might make individual and non-redundant contributions to the explanation of the variety of shopping modes.

Conclusions

Adoption of the newer shopping modes is far from generalised and might never be completed because consumers not only seek objective advantages (lower prices, wider assortments, better conditions, etc.) but also subjective advantages (satisfaction of their ideal desires for innovation, exploration, etc.). This helps to understand the puzzling observation of both a substantial variety in the repertoire of shopping modes and a relative scarcity of multi- and omni-mode shoppers. Consistent with the concept of optimum stimulation level, this variety of shopping modes is explained by the levels of variety of e-commerce use, smartphone use, offline and online interactivity, and online device interchangeability. These findings may have important managerial implications. The variety of shopping modes emerges as a segmentation criterion and may help manufacturers and retailers make improved channel decisions to enhance performance in an increasingly competitive environment. As far as decision-making goes, managers are advised to assess the presence of sufficient multi- and omni-mode shoppers before implementing an integrated omnichannel approach. Otherwise, the expensive investment required to develop and implement an omni-channel strategy might be unwarranted.

Funding

Acknowledgements

Author contributions

Both authors confirm the shared responsibility for the following activities: study conception and design, analysis and interpretation of results, as well as manuscript development.

Disclosure statement

The authors have no conflicts of interest to declare that are relevant to the content of this article.

References

Adomavicius, G., Bockstedt, J., & Curley, S. P. (2015). Bundling effects on variety seeking for digital information goods. *Journal of Management Information Systems*, *31*(4), 182–212. https://doi.org/10.1080/07421222.2014.1001266

Ailawadi, K. L., & Farris, P. W. (2017). Managing multi- and omni-channel distribution: Metrics and research directions. *Journal of Retailing*, *93*(1), 120–135. https://doi.org/10.1016/j.jretai.2016.12.003

Avornyo, P., Fang, J., Antwi, C. O., Aboagye, M. O., & Boadi, E. A. (2019). Are customers still with us? The influence of optimum stimulation level and IT-specific traits on mobile banking discontinuous usage intentions. *Journal of Retailing and Consumer Services*, *47*, 348–360. https://doi.org/10.1016/j.jretconser.2019.01.001

Bawa, K. (1990). Modeling inertia and variety seeking tendencies in brand choice behavior. *Marketing Science*, *9*(3), 263–278. https://doi.org/10.1287/mksc.9.3.263

Berry, C., Kees, J., & Burton, S. (2022). Drivers of data quality in advertising research: Differences across MTurk and professional panel samples. *Journal of Advertising*, *51*(4), 515–529. https://doi.org/10.1080/00913367.2022.2079026

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2003). Innovativeness and variety of Internet shopping. *Internet Research*, *13*(3), 156–169. https://doi.org/10.1108/10662240310478187

Burns, D. J. (2006). Consumers' decision-making style: Relationships with attitude toward consumer free-riding activity. *Marketing Management Journal*, *16*(1), 148–157. http://www.mmaglobal.org/publications/MMJ/MMJ-Issues/2006-Spring/MMJ-2006-Spring-Vol16-Issue1-Burns-pp148-157.pdf

Chiu, H.-C., Hsieh, Y.-C., Roan, J., Tseng, K.-J., & Hsieh, J.-K. (2011). The challenge for multichannel services: Cross-channel free-riding behavior. *Electronic Commerce Research and Applications*, *10*(2), 268–277. https://doi.org/10.1016/j.elerap.2010.07.002

Colla, E., & Lapoule, P. (2012). E-commerce: Exploring the critical success factors. *International Journal of Retail & Distribution Management*, *40*(11), 842–864. https://doi.org/10.1108/09590551211267601

Cui, T. H., Ghose, A., Halaburda, H., Iyengar, R., Pauwels, K., Sriram, S., Tucker, C., & Venkataraman, S. (2021). Informational challenges in omnichannel marketing: Remedies and future research. *Journal of Marketing*, *85*(1), 103–120. https://doi.org/10.1177/0022242920968810

De Keyser, A., Schepers, J., & Konuş, U. (2015). Multichannel customer segmentation: Does the after-sales channel matter? A replication and extension. *International Journal of Research in Marketing*, *32*(4), 453–456. https://doi.org/10.1016/j.ijresmar.2015.09.005

Eastin, M. S., & LaRose, R. (2000). Internet self-efficacy and the psychology of the digital divide. *Journal of Computer-Mediated Communication*, *6*(1), Article JCMC611. https://doi.org/10.1111/j.1083-6101.2000.tb00110.x

Flavián, C., Gurrea, R., & Orús, C. (2016). Choice confidence in the webrooming purchase process: The impact of online positive reviews and the motivation to touch. *Journal of Consumer Behaviour*, *15*(5), 459–476. https://doi.org/10.1002/cb.1585

Frasquet, M., Ieva, M., & Ziliani, C. (2021). Online channel adoption in supermarket retailing. *Journal of Retailing and Consumer Services*, *59*, Article 102374. https://doi.org/10.1016/j.jretconser.2020.102374

Gelman, A., & Hill, J. (2006). *Data analysis using regression and multilevel/hierarchical models*. Cambridge University Press.

Gensler, S., Neslin, S. A., & Verhoef, P. C. (2017). The showrooming phenomenon: It's more than just about price. *Journal of Interactive Marketing*, *38*, 29–43. https://doi.org/10.1016/j.intmar.2017.01.003

Gullo, K., Berger, J., Etkin, J., & Bollinger, B. (2019). Does time of day affect variety-seeking? *Journal of Consumer Research*, *46*(1), 20–35. https://doi.org/10.1093/jcr/ucy061

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). Pearson Education.

Hajdas, M., Radomska, J., & Silva, S. C. (2022). The omni-channel approach: A utopia for companies? *Journal of Retailing and Consumer Services*, *65*, Article 102131. https://doi.org/10.1016/j.jretconser.2020.102131

Hansberger, J. T., Schunn, C. D., & Holt, R. W. (2006). Strategy variability: How too much of a good thing can hurt performance. *Memory & Cognition*, *34*(8), 1652–1666. https://doi.org/10.3758/BF03195928

Hansson, L., Holmberg, U., & Post, A. (2022). Reorganising grocery shopping practices – the case of elderly consumers. *International Review of Retail, Distribution and Consumer Research*, *32*(4), 351–369. https://doi.org/10.1080/09593969.2022.2085137

Herhausen, D., Kleinlercher, K., Verhoef, P. C., Emrich, O., & Rudolph, T. (2019). Loyalty Formation for Different Customer Journey Segments. *Journal of Retailing*, *95*(3), 9–29. https://doi.org/10.1016/j.jretai.2019.05.001

Hernando-Cuñado, J., Colvin-Díez, J., & Enríquez-Román, J. (2019). Mercadona – A successful business case. *Academicus International Scientific Journal*, *20*, 128–141. https://doi.org/10.7336/academicus.2019.20.10

Holyoak, K. J. (1991). Symbolic connectionism: Toward third-generation theories of expertise. In K. A. Ericsson & J. Smith (Eds.), *Toward a general theory of expertise: Prospects and limits* (pp. 301–335). Cambridge University Press.

Jiao, C., & Hu, B. (2022). Showrooming, webrooming, and operational strategies for competitiveness. *Production and Operations Management*, *31*(8), 3217–3232. https://doi.org/10.1111/poms.13747

Kamboj, S., & Gupta, S. (2020). Use of smart phone apps in co-creative hotel service innovation: An evidence from India. *Current Issues in Tourism*, 23(3), 323–344. https://doi.org/10.1080/13683500.2018.1513459

Kondo, F. N., & Okubo, T. (2022). Understanding multi-channel consumer behavior: A comparison between segmentations of multi-channel purchases by product category and overall products. *Journal of Retailing and Consumer Services*, 64, Article 102792. https://doi.org/10.1016/j.jretconser.2021.102792

Konuş, U., Verhoef, P. C., & Neslin, S. A. (2008). Multichannel shopper segments and their covariates. *Journal of Retailing*, 84(4), 398–413. https://doi.org/10.1016/j.jretai.2008.09.002

Kumar, V., & Venkatesan, R. (2005). Who are the multichannel shoppers and how do they perform? Correlates of multichannel shopping behavior. *Journal of Interactive Marketing*, 19(2), 44–62. https://doi.org/10.1002/dir.20034

Kwon, O., Singh, T., & Kim, S. (2023). The competing roles of variety seeking in new brand adoption. *Journal of Retailing and Consumer Services*, 72, Article 103283. https://doi.org/10.1016/j.jretconser.2023.103283

Lindquist, J. D., & Kaufman-Scarborough, C. J. (2007). The polychronic-monochronic tendency model: PMTS scale development and validation. *Time & Society*, 16(2–3), 253–285. https://doi.org/10.1177/0961463X07080270

Lovett, M. C., & Schunn, C. D. (1999). Task representations, strategy variability, and base-rate neglect. *Journal of Experimental Psychology: General*, 128(2), 107–130. https://doi.org/10.1037/0096-3445.128.2.107

Mahatanankoon, P. (2007). The effects of personality traits and optimum stimulation level on text-messaging activities and m-commerce intention. *International Journal of Electronic Commerce*, 12(1), 7–30. https://doi.org/10.2753/JEC1086-4415120101

Martenson, R. (2018). Curiosity motivated vacation destination choice in a reward and variety-seeking perspective. *Journal of Retailing and Consumer Services*, 41, 70–78. https://doi.org/10.1016/j.jretconser.2017.11.009

Menon, S., & Kahn, B. E. (1995). The impact of context on variety seeking in product choices. *Journal of Consumer Research*, 22(3), 285–295. https://doi.org/10.1086/209450

Mishra, R., Singh, R. K., & Koles, B. (2021). Consumer decision-making in omnichannel retailing: Literature review and future research agenda. *International Journal of Consumer Studies*, 45(2), 147–174. https://doi.org/10.1111/ijcs.12617

Mittelstaedt, R. A., Grossbart, S. L., Curtis, W. W., & DeVere, S. P. (1976). Optimal stimulation level and the adoption decision process. *Journal of Consumer Research*, 3(2), 84–94. https://doi.org/10.1086/208655

Mladenow, A., Mollova, A., & Strauss, C. (2018). Mobile technology contributing to omni-channel retail. In *Proceedings of the 16th International Conference on Advances in Mobile Computing and Multimedia* (pp. 92–101). https://doi.org/10.1145/3282353.3282371

Mohan, G., Sivakumaran, B., & Sharma, P. (2012). Store environment's impact on variety seeking behavior. *Journal of Retailing and Consumer Services*, 19(4), 419–428. https://doi.org/10.1016/j.jretconser.2012.04.003

Montaguti, E., Neslin, S. A., & Valentini, S. (2015). Can marketing campaigns induce multichannel buying and more profitable customers? A field experiment. *Marketing Science*, 35(2), 201–217. https://doi.org/10.1287/mksc.2015.0923

Neslin, S. A. (2022). The omnichannel continuum: Integrating online and offline channels along the customer journey. *Journal of Retailing*, 98(1), 111–132. https://doi.org/10.1016/j.jretai.2022.02.003

Papagiannidis, S., Alamanos, E., Bourlakis, M., & Dennis, C. (2023). The pandemic consumer response: A stockpiling perspective and shopping channel preferences. *British Journal of Management*, 34(2), 664–691. https://doi.org/10.1111/1467-8551.12616

Papatla, P., & Bhatnagar, A. (2002). Shopping style segmentation of consumers. *Marketing Letters*, *13*(2), 91–106. https://doi.org/10.1023/A:1016089718390

Polites, G. L., & Karahanna, E. (2012). Shackled to the status quo: The inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. *MIS Quarterly*, *36*(1), 21–42. https://doi.org/10.2307/41410404

Porter, C. O. L. H., Outlaw, R., Gale, J. P., & Cho, T. S. (2019). The use of online panel data in management research: A review and recommendations. *Journal of Management*, *45*(1), 319–344. https://doi.org/10.1177/0149206318811569

Quach, S., Barari, M., Moudrý, D. V., & Quach, K. (2022). Service integration in omnichannel retailing and its impact on customer experience. *Journal of Retailing and Consumer Services*, 65, Article 102267. https://doi.org/10.1016/j.jretconser.2020.102267

Raju, P. S. (1980). Optimum stimulation level: Its relationship to personality, demographics, and exploratory behavior. *Journal of Consumer Research*, *7*(3), 272–282. https://doi.org/10.1086/208815

Rohm, A. J., & Swaminathan, V. (2004). A typology of online shoppers based on shopping motivations. *Journal of Business Research*, *57*(7), 748–757. https://doi.org/10.1016/S0148-2963(02)00351-X

Saha, K., & Bhattacharya, S. (2020). Look before you leap: Economics of being an omnichannel retailer. *Operations and Supply Chain Management*, *13*(3), 256–268. https://doi.org/10.31387/oscm0420267

Segovia, M., Grashuis, J., & Skevas, T. (2021). Consumer preferences for grocery purchasing during the COVID-19 pandemic: A quantile regression approach. *British Food Journal*, *124*(11), 3595–3623. https://doi.org/10.1108/BFJ-05-2021-0474

Sipior, J. C., Ward, B. T., & Volonino, L. (2014). Privacy concerns associated with smartphone use. *Journal of Internet Commerce*, *13*(3–4), 177–193. https://doi.org/10.1080/15332861.2014.947902

Srivastava, J., Nakazawa, M., & Chen, Y.-W. (2016). Online, mixed, and offline media multitasking: Role of cultural, socio-demographic, and media factors. *Computers in Human Behavior*, *62*, 720–729. https://doi.org/10.1016/j.chb.2016.04.040

Stafford, T. F., Stafford, M. R., & Schkade, L. L. (2004). Determining uses and gratifications for the Internet. *Decision Sciences*, *35*(2), 259–288. https://doi.org/10.1111/j.00117315.2004.02524.x

Steenkamp, J.-B. E. M., & Baumgartner, H. (1992). The role of optimum stimulation level in exploratory consumer behavior. *Journal of Consumer Research*, *19*(3), 434–448. https://doi.org/10.1086/209313

Trivedi, M. (1999). Using variety-seeking-based segmentation to study promotional response. *Journal of the Academy of Marketing Science*, *27*(1), 37–49. https://doi.org/10.1177/0092070399271003

Truong, D., & Truong, M. D. (2022). How do customers change their purchasing behaviours during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, *67*, Article 102963. https://doi.org/10.1016/j.jretconser.2022.102963

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing. *Journal of Retailing*, *91*(2), 174–181. https://doi.org/10.1016/j.jretai.2015.02.005

Wang, Q., Yang, X., Song, P., & Sia, C. L. (2014). Consumer segmentation analysis of multichannel and multistage consumption: A latent class MNL approach. *Journal of Electronic Commerce Research*, *15*(4), 339–358. https://web.csulb.edu/journals/jecr/issues/20144/Paper5.pdf

Yurova, Y., Rippé, C. B., Weisfeld-Spolter, S., Sussan, F., & Arndt, A. (2017). Not all adaptive selling to omni-consumers is influential: The moderating effect of product type. *Journal of Retailing and Consumer Services*, *34*, 271–277. https://doi.org/10.1016/j.jretconser.2016.01.009