



Understanding customers' choice for digital D2C versus multi-brand operations

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Abstract

In recent years, the emergence of highly successful digital multi-brand retailers has facilitated an omnichannel distribution strategy to become the norm for brands. Rather than relying solely on these multi-brand retailers, it is necessary for companies' omnichannel strategy to establish strong brand-owned direct-to-consumer (D2C) webstores. To help D2C brands make decisions regarding distribution channel choices, this paper investigates the circumstances under which customers prefer brands' D2C webstores over digital multi-brand retailers and how these circumstances vary across phases of the customer journey. The results from an extensive experimental study demonstrate that, depending on the customer journey, brands' D2C webstores can compete with digital multi-brand retailers, particularly in product categories characterized by deep assortments, the need for extensive product information, exclusive products, or a high degree of personalization.

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Keywords: E-commerce; Brand; Channel choice; Omnichannel distribution; Online shopping; Mono-brand.

Introduction

In recent years, the number of channel formats has substantially increased. Brands have widely accepted the benefits of omnichannel distribution (Ailawadi 2021) and are selling their products via a multitude of online, mobile, and offline channels (Cui et al. 2021). In the online domain, multi-brand retailers have become increasingly important for brands and consumers (Gielens and Steenkamp 2019) as eight out of the top 10 e-commerce stores in the U.S. are multi-brand retailers (Droesch 2023). Digital multi-brand retailers have evolved into highly attractive sales channels for brands because of their immense reach (Reinartz, Wiegand, and Im Schloss 2019) and lower transaction, fulfillment, and marketing costs (Rangaswamy et al. 2020). Additionally, consumers

value the fact that digital multi-brand retailers provide consumers with 24/7 access and one-stop shopping experience (Riemer et al. 2015).

Although research has shown positive cross-channel effects in the short term (He et al. 2020; Maier and Wieringa 2021), a consistent omnichannel strategy requires brands to undertake efforts to establish their own digital direct-to-consumer (D2C) operations. Doing so allows them to directly engage with their customers through social, mobile, and online channels (Diorio 2016; Gielens and Steenkamp 2019) and to keep in touch with their customers in the long run (Maier and Wieringa 2021), particularly through direct access to transaction and preference data. Strong digital D2C operations reduce pressure on prices (e.g., Brynjolfsson et al., 2009; Jing 2018; Mehra, Kumar, and Raju 2018) and interference with brands' offline promotions (Guyt and Gijbrecchts 2014). Additionally, they reduce the likelihood of digital multi-brand retailers imitating their products (Hagiu and Wright 2021). Despite the numerous advantages and opportunities of well-executed digital D2C operations for brands, only a few have thus far proven sales success in the marketplace (Steenkamp Jan-Benedict., 2021; Bei and Gielens 2023).

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Given that brands' digital D2C operations may not have the top-of-mind awareness and financial resources to drive traffic to their webstores and given that they are perceived as less convenient and more time consuming than the operations of digital multi-brand retailers (Gielens and Steenkamp 2019), it is essential for brands to know how they can generate value for their D2C webstores so that they can compete with digital multi-brand retailers. Therefore, this study empirically investigates *a*) under which circumstances customers prefer brands' D2C webstores over digital multi-brand retailers – the latter defined as the webstores of authorized resellers of branded products – specifically, the webstores of pure-play online retailers (such as *Zalando*, *ASOS*, or *Westwing*) and brick-and-mortar players who moved into the digital sphere (such as *BestBuy* or *Macy's*) as well as one-party marketplaces (such as *Amazon* or *JD.com*; Bei and Gielens 2023). As it is plausible to assume that these circumstances differ between offerings, we empirically test the effect of different category characteristics on the choice of either brands' D2C webstores or digital multi-brand retailers. Since brands' D2C webstores also allow consumers to make fewer comparisons across products (and brands), we further analyze *b*) how circumstances vary in the need recognition, search, and purchase phases of the customer journey where customers may have different levels of brand awareness.

The findings of this study are relevant for marketing practice, as they provide interesting insights for brand management. Specifically, the results demonstrate that, depending on the customer journey, brands' D2C webstores can indeed compete with digital multi-brand retailers in categories with high degrees of assortment depth, personalization, exclusiveness, or need for information. Our study contributes to the marketing literature by eliciting and analyzing customers' channel choices across the stages of the customer journey while providing insights into how managers can utilize different category characteristics to foster channel preferences. Therefore, this study helps D2C brands decide how to allocate their products among digital channels based on customer preferences.

Theoretical background

Previous research

With the substantially increased number of channel formats in recent years, manufacturers can choose to distribute their brands via a multitude of online, mobile, and offline media channels (Cui et al. 2021). To address consumers in different market segments based on their varying needs and to allow them to self-select into their preferred channel in each phase of the customer journey (e.g., Ansari, Mela, and Neslin 2008; Bell, Gallino, and Moreno 2014), companies have widely accepted the benefits of omnichannel distribution (Ailawadi 2021). Because determining the right distribution breadth is highly relevant (Ailawadi and Farris 2017), marketing research has extensively investigated the effects of companies adding new channels or developing strategies

for existing channels on a multitude of outcome variables (Geyskens, Gielens, and Dekimpe 2002; Gensler, Leeflang, and Skiera 2012). In addition to research on multichannel buying behavior in different buying stages and for different products (e.g., Konus, Verhoef, and Neslin 2008), as well as its effect on brand loyalty (e.g., Shankar, Smith, and Rangaswamy 2003; Wallace, Giese, and Johnson 2004) and on customer value (e.g., Venkatesan, Kumar, and Ravishanker 2007; Kushwaha and Shankar 2013), one particularly popular research stream has focused on why customers choose certain channels for purchasing products and services.

As shown in Table 1, researchers following this research stream have analyzed customers' diverse motives for choosing specific channels. Specifically, studies have considered the customer-related antecedents of channel choice, such as shopping experience (Burke 2002), shopping motives (Kollmann, Kuckertz, and Kayser 2012), and customer perceptions and behavior (Gupta, Su, and Walter 2004; Keen et al. 2004; Bart et al. 2005; Kumar and Venkatesan 2005; Falk et al. 2007). Other studies have accounted for channel-related characteristics such as quality, convenience, and information (Montoya-Weiss, Voss, and Grewal 2003; Frambach, Roest, and Krishnan 2007; Gensler, Verhoef, and Böhm 2012) or transaction costs, price, and assortment (Degeratu, Rangaswamy, and Wu 2000; Chintagunta, Chu, and Cebollada 2012; Melis et al. 2015).

The studies differ not only regarding the channel choice antecedents or data they used but also with respect to their scope. For instance, the studies varied with respect to the number of products or product categories that they considered and the ability to compare products. Additionally, they differ with respect to the channels they compared to the focal online channel. While most related studies have considered only one offline channel (mostly brick-and-mortar retail, e.g., Degeratu, Rangaswamy, and Wu 2000; Gupta, Su, and Walter 2004; Melis et al. 2015), few studies have investigated multiple offline channels (e.g., Keen et al. 2004; Kumar and Venkatesan 2005; Gensler, Verhoef, and Böhm 2012), and only one has compared customer choices for different online channels (Bart et al. 2005). Additionally, only two studies have taken the customer journey into consideration. The finding that customers attach different levels of importance to channel-related characteristics in the different phases of the purchasing process (Frambach, Roest, and Krishnan 2007; Gensler, Verhoef, and Böhm 2012) shows that channel choice may vary with the stage of the customer journey.

Furthermore, the studies differ with respect to the question of whether the offerings are directly sold by the manufacturer/service provider or via retailers. While direct selling is mostly considered in those studies using services (e.g., Montoya-Weiss, Voss, and Grewal 2003; Frambach, Roest, and Krishnan 2007; Kollmann, Kuckertz, and Kayser 2012) and retail is mostly considered in those predominantly using (physical) products (e.g., Degeratu, Rangaswamy, and Wu 2000; Chintagunta, Chu, and Cebollada 2012; Melis et al. 2015), previous research has not investigated whether channel choice depends on whether the chan-

Table 1
Overview of existing research on channel choice.

Study	Data origin	Choice between online and...	Product/ service context	Products/services sold...		Customer journey	Multiple product categories
				Directly	via retailer		
Degeratu et al (2000)	Transactions	offline	Groceries	—	✓	—	✓
Burke (2002)	Survey	offline	10 products	—	✓	—	✓
Montoya-Weiss et al. (2003)	Survey	offline ^a	Financial services, education	✓	—	—	✓
Gupta et al. (2004)	Survey	offline	4 products	—	✓	—	✓
Keen et al. (2004)	Experiment	offline ^b	CD, PC	—	✓	—	✓
Bart et al. (2005)	Survey	online	8 products/services	✓	✓	—	✓
Kumar and Venkatesan (2005)	Transactions	offline ^c	Computer hardware	✓	—	—	—
Falk et al. (2007)	Experiment	offline	Financial services	✓	—	—	—
Frambach et al. (2007)	Survey	offline	Financial services	✓	—	✓	—
Chintagunta et al. (2012)	Transactions	offline	Groceries	—	✓	—	—
Gensler et al. (2012)	Survey	offline ^d	Financial services	✓	—	✓	✓
Kollmann et al. (2012)	Survey	offline ^e	Mobile network	✓	—	—	—
Melis et al. (2015)	Transactions	offline	Groceries	—	✓	—	—
This study	Experiment	online	4 products	✓	✓	✓	✓

Note. Offline channels include.

^abranch office, telephone.

^bcatalog, retail store.

^csalespersons, direct mail, telephone.

^dbranch office, call center, self-service terminal.

^ebranch office.

nel is manufacturer- or retail-operated.³ The few studies that explicitly include manufacturers selling via D2C channels primarily focus on operational aspects, such as managing demand variability and inventory cost (see, for example, Rodríguez and Aydın 2015), optimal timing for pricing decisions across channels (e.g., Matsui 2020), or retail contract designs (e.g., Matsui 2024). Accordingly, the circumstances under which customers may prefer brands' D2C webstores over digital multi-brand retailers have not been identified. Therefore, this study combines previous approaches and experimentally investigates customers' online channel choice behaviors for those two channels for multiple product categories and for different phases of the customer journey.

Conceptual framework

Multi-brand retailers have become increasingly important for brands in recent years, especially in the online domain (Gielens and Steenkamp 2019). These digital multi-brand operations take ownership of products from branded manufacturers, set prices, control the items and quantities offered, and decide how to sell and deliver the products (Wichmann, Wiegand, and Reinartz 2022). Because of their immense reach, digital multi-brand retailers have evolved into highly attractive sales channels for brands (Reinartz, Wiegand, and Imschloss 2019). Brands gain access to many customers who are attracted by the breadth of the product range and

³ Although Bart et al. (2005) had online stores that were operated by manufacturers and retailers in their study, they did not explicitly investigate the differences.

the one-stop shopping experience offered by digital multi-brand retailers (Riemer et al. 2015; Kenney et al. 2019; Cozzolino, Corbo, and Aversa 2021). This gain in customers happens at initially lower transaction and production costs, as brands also benefit from retailers' marketing efforts (Rangaswamy et al. 2020). Consequently, digital multi-brand retailers have become highly successful (for an overview, see Gielens and Steenkamp 2019).

Although research has found positive short-term cross-channel effects (He et al. 2020; Maier and Wieringa 2021), the success of digital multi-brand retailers comes at a high price for brands (see Gielens and Steenkamp 2019). First, brands may lose touch with their customers in the long run (Maier and Wieringa 2021). As customers mostly interact with digital multi-brand retailers as their first point of contact, brands typically do not have access to retailers' customer data and hence lack knowledge of their customers' preferences (e.g., Amazon forbids sellers from transferring customer data such as customer names and addresses to their own database; see Huang, Lu, and Ba 2016; Maier and Wieringa 2021).

Second, the vast amount of data that digital multi-brand retailers have on their customers enables them to directly compete with manufacturers (Katz 2019). Specifically, they can even compete with brands by imitating their products (Hagi and Wright 2021). In India, for instance, Amazon copied branded products being sold on its platform and manipulated the search results to promote its own products (Kalra and Stecklow 2021). By exploiting the knowledge generated by optimizing word-search algorithms, analyzing sales data, and customer-review networks, digital multi-brand retail-

ers can harm brands by steering shoppers toward their private labels (Gielens and Steenkamp 2019).

Third, digital multi-brand retailers may also hurt brands by increasing pressure on prices (e.g., Brynjolfsson et al., 2009; Jing 2018; Mehra, Kumar, and Raju 2018) and, through dynamic pricing practices, by interfering with brands' offline promotions (Guyt and Gijsbrechts 2014). Consequently, customers perceive the prices of digital multi-brand retailers to be lower than those of other channels (Wang, Bell, and Padmanabhan 2009; Gielens and Steenkamp 2019). As factors such as ranking and price become dominant reasons for purchase decisions, customers may choose digital multi-brand retailers as their first choice for shopping, ultimately weakening the importance of brands (Hagiu and Wright 2021). This trend becomes even more intensified as digital multi-brand retailers tend to eliminate brands' ability to create brand awareness by not allowing them to showcase unique brand elements (Bei and Gielens 2023). As brands cannot differentiate between competition on multi-brand retailers' webstores, their brand performance is further impaired.

Therefore, brands increasingly venture into their own digital D2C operations, which allow them to directly engage with their customers using social, mobile, and online channels – despite the considerable efforts needed to operate these channels successfully (Diorio 2016; Gielens and Steenkamp 2019). As outsourcing prevents brands from leveraging the advantages of D2C operations (Kalaignanam et al. 2013), brands must develop their own retail space, conduct all marketing activities to attract customer traffic in house, and in-source fulfillment activities (Dollens, Ettenson, and Lynch 2020; Reinartz, Wiegand, and Wichmann 2019). Nevertheless, these costs are worthwhile, considering the opportunities for brands evolving from digital D2C operations, in addition to the fact that brands do not need to share their margin with a retailer in this setting.

First and most obviously, digital D2C operations allow brands full control over noncontractible decisions such as retail prices (Gielens and Steenkamp 2019). This level of control improves overall profitability not only directly (i.e., by reducing transaction costs) but also indirectly by changing the balance of channel power in the brand–retailer relationship (Kadiyali, Chintagunta, and Vilcassim 2000).

Second, brands benefit enormously from directly interacting with their customers on their D2C webstore and acquiring customer data (e.g., interaction preferences, purchase drivers, customer satisfaction, triggers of churn; see Arora et al. 2020). Consequently, brands get to know their customers better and can use this knowledge to create product portfolios that are uniquely catered to their customers' needs, which provides brands with an opportunity to differentiate themselves from the competition and reduce customers' likelihood of switching (Gielens and Steenkamp 2019). Furthermore, brands can generate valuable insights for marketing by using their digital D2C operations as realistic consumer labs for testing product innovations, variants, assortments, and prices (Bashkin et al. 2017).

Third, full ownership of their webstore and proprietary customer information also allows brands to autonomously determine the depth of the assortment as well as the branding and visualization of products, and it provides the technological options to let customers personalize products and/or the website (Gielens and Steenkamp 2019). This personalized and thus enhanced shopping experience may lead to more satisfied customers and, ultimately, to higher profits, as increased brand exposure hopefully results in spillover effects (Avery et al. 2012).

Despite the obvious advantages and opportunities of digital D2C operations for brands, only a few have thus far proven sales success in the digital marketplace (Steenkamp 2017; Bei and Gielens 2023). Given that shopping with digital multi-brand retailers is often considered less time-consuming and more convenient than shopping with brands' digital D2C operations (Gielens and Steenkamp 2019), it is essential for brands to know *a*) under which circumstances customers may prefer brands' D2C webstores over digital multi-brand retailers to more effectively steer customer traffic toward their standalone webstores. As it is plausible to assume that these circumstances differ between offerings, we empirically test the effect of different category characteristics on the choice of either brand D2C webstores or digital multi-brand retailers. Since brands' D2C webstores also allow consumers to make fewer comparisons across products (and brands), it is important to determine *b*) how circumstances vary in the need recognition, search, and purchase phases of the customer journey where customers may have different levels of brand awareness.

Hypothesis development

Despite the theoretical possibility of offering endless product variants through digital multi-brand retailers, the respective procurement and warehousing costs may render a multitude of variants unprofitable (Ryzin and Mahajan 1999). Consequently, many digital multi-brand retailers offer the best sellers and usually do not offer many product variations (e.g., uncommon colors, sizes, or product specifications). The same applies for brand-new, innovative products that have little or no sales history. Such products come with a higher risk for digital multi-brand retailers, and their webstore setup, which requires specific search terms, hinders the possibility of specifically featuring these innovations. On the other hand, brands can use D2C webstores to specifically test, develop, and promote product variations as well as innovative products in a controlled environment (Gielens and Steenkamp 2019). In addition, strategically, such product innovations could be exclusively sold through D2C webstores (either permanently or for a certain period); thus, they could provide this channel with a competitive advantage. Overall, for the benefits of offering deep and exclusive, innovative assortments, D2C webstores may have an advantage over digital multi-brand retailers in terms of customers' channel preferences because only they can set up their webstore in a way that provides customers with opportunities to browse so many product variants

and to promote their newest products. In this study, we use *assortment depth* as a category characteristic that describes how many variants of a product are offered by a webstore. Similarly, we use *exclusivity*, which represents the degree to which products are sold exclusively in certain webstores.

An extreme example of addressing customer preferences, would be allowing consumers to personalize products based on their needs. Personalization (or customization) is the level of adaptation of products available to provide tailor-made solutions for the benefit of customers (Lovelock 1983; Shostack 1987). Consequently, offering the possibility to personalize products online involves highly individual solutions that depend on the product specifications. For example, the car manufacturer *Bentley* uses more than 1.7 million images and allows for up to 10 billion possible product configurations on its webstore setup (*bentleymotors.com*). As digital multi-brand retailers normally operate with webstore solutions that cater to a multitude of brands with standardized products, we expect brands' D2C webstores to have an advantage over digital multi-brand retailers if brands operate in categories with highly personalizable products. We use *personalization* as a category characteristic indicating the level at which a product can be adapted by a webstore based on customer needs.

While personalization requires specific knowledge of customers' product preferences, interactions with customers may also enhance knowledge of the *need for information* that products entail. Whether customers perceive that a channel is able to assist them with their questions or problems regarding the use of a product beforehand depends on the accuracy, relevance, timeliness, and usefulness of the information that the channel provides (Barnes and Vidgen 2002). Since high-quality information reduces customers' information overload and helps them make better purchase decisions (Liang, Lai, and Ku 2006; Yoon 2013; Reinartz, Wiegand, and Imschloss 2019), information quality is an important attribute of channel choice (Kemény et al. 2016) and may serve as a proxy for competence. Provided that brands not only are in possession of all product information but also have the discretion to provide as much information as possible on their products on their D2C webstores, we expect customers to prefer D2C webstores over digital multi-brand retailers because of greater ability to cater to the need for product information. Considering the different customer benefits that arise from customer data, we propose the following:

H1. The more a product *a*) is exclusive, or *b*) needs information, or it allows for *c*) personalization or *d*) a multitude of variants, the greater the likelihood that customers will choose brands' D2C webstores over digital multi-brand retailers.

Furthermore, insights into customer buying behavior help enhance customers' shopping experience during the customer journey (Gielens and Steenkamp 2019). This fact is important because customers can switch between channels during the customer journey (Neslin et al. 2014; Verhoef 2021). The customer journey is defined as customers' usage of one or more channels to search for and purchase products (An-

derl et al. 2016; Herhausen et al. 2019).⁴ Lemon and Verhoef (2016) link the customer journey with customer buying behavior process models (e.g., AIDA; Lavidge and Steiner 1961). Based on Neslin et al.'s (2006) process in which customers must recognize a need before conducting searches and ultimately purchasing a product, we use a three-phase customer journey model where customers differ with respect to the information level that is required in the specific phases. In the *need recognition* phase, customers have not yet defined their needs. Hence, they prefer channels that help them acquire a maximum amount of information on available products, variants, and prices. In the *search* phase, customers are aware of the overall market's offerings and have narrowed the alternatives down to an evoked set. The information that they search for is, therefore, more focused on specific products. In the *purchase phase*, consumers have decided on and buy a specific product.

Consequently, customers in the different phases of the customer journey vary regarding their awareness of available products and brands. As multi-brand and D2C webstores differ with respect to the number of products and brands that they are offering, it is likely that they also differ with respect to attracting customers from the different phases of the customer journey. While customers may not be aware of brands in the need recognition phase, they may have already reduced the consideration set to a few or even one brand in the search phase. Equally, customers may assign established brands to the evoked set and skip the need recognition phase, while *de novo* brands that do not have top-of-mind awareness would have to pass the need recognition phase first. The availability of a large number of products from multiple brands is subsequently not as relevant in the search phase as it was in the need recognition phase. It is even less relevant in the purchase phase where customers have already decided on a brand and no longer need to compare brands. In this case, brands' D2C webstores may become an even more viable option. Hence, we expect the different stages to trigger different channel choice behaviors and propose the following:

H2. Over the course of the customer journey, the likelihood customers will choose brands' D2C webstores increases.

Considering that the information requirements of customers vary with the phases of the customer journey, category characteristics may also have different effects depending on which phase the customers are in. While customers are still defining their needs, they may pay less attention to deep assortments, exclusive and personalized products, and specific product information than customers who have reduced their set of alternatives or have decided on a product. As category characteristics may become relevant only later in the customer journey, we postulate the following:

⁴ Given our focus on channel choice, we concentrate on the prepurchase and purchase phases of the customer journey and leave out post-purchase behavior (Tueanrat, Papagiannidis, and Alamanos 2021).

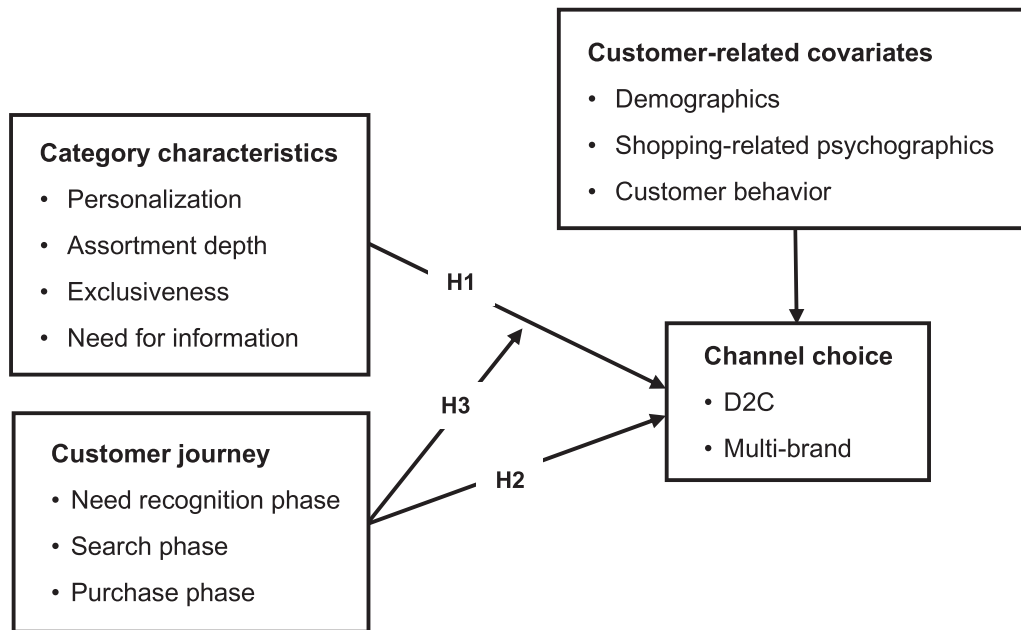


Fig. 1. Conceptual model.

H3. The effect of *a*) exclusiveness, *b*) need for information, *c*) personalization, and *d*) assortment depth on customers' choice for D2C webstores vs. digital multi-brand retailers increases throughout the customer journey.

In Fig. 1, we present the conceptual model of our study. Because demand can be steered toward a certain channel, we investigate the different influences of D2C webstore and digital multi-brand retailers on channel choice in our experimental study below. We assume that customers select a particular channel depending on *a*) category characteristics and *b*) the stage of the customer journey they are in.

Empirical analyses

Design, participants, and procedure

The study employed a 4 (category characteristics: personalization vs. assortment vs. exclusiveness vs. need for information) \times 2 (level of category characteristics: low vs. high) \times 3 (customer journey: need recognition phase vs. search phase vs. purchase phase) between-subjects design to test the drivers of customers' choice of either brands' D2C webstores or digital multi-brand retailers. In total, 3629 U.S. crowd workers on Prolific completed the study in exchange for monetary compensation. We had two attention check questions: "Please click on the 'Strongly agree' at the far right end of the options" within the customer characteristics control variable items. Fifty-two participants who failed both attention check questions were excluded from the study, resulting in a final sample of 3577 participants. The participants covered all

relevant groups of shoppers.⁵ A total of 49% of the participants were female, 78% had a household income of less than \$100,000, and 84% frequently shopped online (i.e., at least several times a month). The descriptive statistics are displayed in Appendix A.

Each participant was assigned to a condition in which she had to imagine that she was searching for or buying a product. While in the purchase condition the participants had already decided on a product, they were supposed to search for information to make up their minds in the other two conditions – either when they were unsure about which brand to buy (i.e., need recognition phase) or when they had narrowed the options down to one brand (i.e., search phase). Considering that products may differ considerably with respect to the applicability of the focal category characteristics, we chose products that allowed for different levels. To determine the optimal products for the category characteristics, we first used maximum difference scaling to determine which product category customers associate the most with the different characteristics. Second, we asked industry experts which products from the categories would best fit the description. Consequently, we used laptop computers for the *personalization* condition, backpacks for the *assortment depth* condition, Lego toys for the *exclusiveness* condition and a washer/dryer combination for the *need for information* condition.⁶ As the participants' individual likelihood of considering the products for themselves may vary substantially, the scenario had the

⁵ A total of 14% of the participants were aged 18-25 years, 16% were aged 26-30 years, 30% were aged 31-40 years, 18% were aged 41-50 years, 13% were aged 51-60 years, and 9% were older than 61 years.

⁶ As a base, we used the most successful categories in online shopping. The categories that were mostly associated with the characteristics were consumer electronics, fashion, toys, and home appliances.

participants search or purchase for someone else. Additionally, to avoid channel-specific price expectations (Wang, Bell, and Padmanabhan 2009), the participants were told that the prices would not differ between channels. Appendix B shows a detailed overview of the scenarios. After reading the scenarios, the participants were asked to indicate the channel where they would like to search or purchase the respective product, either the brand's D2C webstore or a retailer's webstore that carries multiple brands.

To assess whether the manipulation (high–low) was successful, the participants had to indicate the importance of the category characteristics in the condition to which they were assigned.⁷ Consistent with our expectations, the participants in the *high personalization* condition for searching/purchasing a laptop computer reported greater importance for the personalization of the laptop than those in the *low personalization* condition ($M_{low}=3.95$, $M_{high}=5.64$, $t(937)=-15.39$, $p<.01$). Similarly, significant differences were found between the high and low conditions for *assortment depth* ($M_{low}=5.30$, $M_{high}=5.95$, $t(877)=-7.16$, $p<.01$), *exclusiveness* ($M_{low}=4.27$, $M_{high}=5.20$, $t(853)=-8.00$, $p<.01$), and *need for information* ($M_{low}=5.87$, $M_{high}=6.26$, $t(902)=-5.50$, $p<0.01$), showing that the participants correctly associated the different levels for the category characteristics. The same applies to the distinctiveness of the category characteristics – the mean values of the respective “high” conditions were significantly greater than those of the other category characteristics.

After completing the experiment, we collected the data for the covariates and asked all participants about general shopping-related characteristics and customer behavior. Because D2C webstores and digital multi-brand retailers are most certainly dissimilar with respect to assortment size and possibilities for one-stop shopping, customers with varying shopping-related psychographic characteristics may also differ with respect to their channel preferences (Ailawadi, Neslin, and Gedenk 2001). To measure this difference, we followed the standard procedures for scale development of Gerbing and Anderson (1988) and Rossiter (2002) and based our scales on a review of the literature. Relying on established scales, we measured the constructs *impulsiveness* (2 items), *mavenism* (3 items), and *time pressure* (3 items) with indicators adapted from Ailawadi, Neslin, and Gedenk (2001). We derived the items for the construct *stimulation* (2 items) based on the scale from Ganesh et al. (2010) and used the scales from Ailawadi, Neslin, and Gedenk (2001) and Konus, Verhoef, and Neslin (2008) to measure *price consciousness* (3 items). All the indicators showed acceptable validity (Cronbach's al-

pha > 0.7, item-to-total correlations > 0.5). In addition to the demographic variables age, gender, and household income, we asked the participants about their shopping frequency to account for their customer behavior. For the detailed descriptive statistics of the items and constructs, see Appendices C and D.

Method

To test our hypotheses, we employed separate logit models for the different category characteristics. Specifically, we estimated the following models to determine the probability ($P_{ij}^{Channel} = \text{prob.}(D2C = 1)$) that consumer j will choose the brand's D2C webstore over a multi-brand retailer's webstore for category i :

$$\frac{P_{ij}^{Channel}}{1 - P_{ij}^{Channel}} = \exp \left(\begin{array}{c} a_0 + \beta_1 CC_{ij} \\ + \beta_{2a} NR_{ij} + \beta_{2b} SE_{ij} \\ + \beta_{3a} CC_{ij} \times NR_{ij} + \beta_{3b} CC_{ij} \times NR_{ij} \\ + \beta_{4-12} \eta_j \end{array} \right)$$

where CC_{ij} is an effect-coded dummy variable equal to 1 if the treatment of the category characteristic showed a high level and -1 otherwise. For the different stages of the customer journey, we included the effect-coded variables NR_{ij} for the need recognition phase ($=1$; search= 0 ; purchase= -1) and SE_{ij} for the search phase ($=1$; need recognition= 0 ; purchase= -1). The vector η_j captures the controls for customer characteristics and demographics.⁸ Furthermore, the parameters β_{1-2} indicate the effects of the two focal variables, β_3 represents the interaction between them, and β_{4-12} indicate the effects of the control variables.

Results

Regarding the participants' channel choices during the customer journey and in line with H2, we find that customers in the early phases differ from those in the purchase phase (see Table 2). This finding holds particularly for the need recognition phase where we find substantially more choices for digital multi-brand retailers than for those in the purchase phase ($\beta_{2a, Model 1} = -.83$, $p < .01$; $\beta_{2a,3} = -1.56$, $p < .01$; $\beta_{2a,5} = -1.15$, $p < .01$; $\beta_{2a,7} = -.81$, $p < .01$).

For the search phase, however, the regression results predominantly indicate more choices for D2C webstores on average. In particular, we find that customers in the personalization ($\beta_{2b,1} = 0.25$, $p < .05$), assortment depth ($\beta_{2b,3} = 0.95$, $p < .01$), and exclusiveness ($\beta_{2b,5} = 0.59$, $p < .01$) conditions who have set their minds on a specific brand are more likely to prefer D2C webstores both for searching and purchasing products. The visualization of simple effects in Fig. 2 provides more detailed insights into how customers choose channels along the customer journey (Spiller et al. 2013; Park and Yi 2023). For all category characteristics, we see that, compared with those in the search and purchase phase, customers in the

⁷ In all conditions, we asked “How important were the following characteristics of the website for your choice?” The participants were asked to rate the items “opportunity to customize the product on the website according to the specific needs and requirements”, “number of different variants of the products available on the website”, “exclusiveness of the assortment on the website”, and “amount and level of detail of information regarding the product that is provided on the website” on a scale from 1-7 (not at all important – very important).

⁸ For the estimation, continuous control variables were mean-centered and binary variables effect-coded.

Table 2
Estimation results.

DV: Channel	Personalization		Assortment depth		Exclusiveness		Need for information										
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE			
Category characteristic level (CCL) β_{1j}	.38**	.07	.38**	.08	.18*	.08	.15	.08	.42**	.08	.44**	.08	.36**	.08	.33**	.08	
Customer journey																	
Need recognition phase	β_{2a}	-.83**	.11	-.83**	.11	-1.56**	.13	-1.56**	.13	-1.15**	.21	-1.17**	.13	-.81**	.12	-.78**	.12
Search phase	β_{2b}	.25*	.10	.25*	.10	.95**	.11	.95**	.11	.59**	.10	.60**	.11	-.00	.11	-.03	.11
Interaction effects																	
Need recognition phase x CCL	β_{3a}	—	—	.02	.11	—	—	-.20	.13	—	—	.11	.12	—	—	-.20	.12
Search phase x CCL	β_{3b}	—	—	.03	.10	—	—	.20	.11	—	—	-.00	.11	—	—	.12	.11
Impulsiveness	β_4	.03	.05	.03	.05	-.05	.05	-.05	.05	.04	.05	.04	.05	.01	.05	.01	.05
Mavenism	β_5	.03	.07	.03	.07	-.01	.07	-.01	.07	-.01	.06	-.01	.06	.04	.07	.04	.07
Stimulation	β_6	.01	.08	.01	.08	.30**	.09	.30**	.09	.21**	.08	.21**	.08	-.19*	.08	-.19*	.09
Price consciousness	β_7	-.08	.08	-.08	.08	-.19*	.09	-.18	.09	-.11	.09	-.11	.09	-.01	.10	.10	-.02
Time pressure	β_8	.02	.05	.02	.05	.01	.05	.01	.03	.05	.03	.05	.02	.06	.02	.06	.06
Shopping frequency	β_9	.05	.09	.05	.09	.31**	.10	.31**	.10	.05	.09	.32**	.09	.16	.09	.16	.09
Age	β_{10}	-.01	.05	-.01	.05	-.12*	.06	-.12*	.06	.32**	.05	-.05	.05	-.13*	.06	-.13*	.06
Gender	β_{11}	-.03	.07	-.03	.07	-.23**	.08	-.23**	.08	-.06	.08	-.01	.08	.10	.08	.09	.08
Household income	β_{12}	.20*	.08	.20*	.08	.11	.08	.11	.08	-.01	.08	-.02	.08	.13	.08	.14	.08
Intercept	β_0	-.70**	.08	-.70**	.08	-.25**	.09	-.24**	.09	-.42**	.08	-.43**	.08	-.98**	.08	-.98**	.08
LR Chi ² (df)		101.87 (12)		102.04 (14)		234.33 (12)		238.02 (14)		153.61 (12)		154.65 (14)		108.28 (12)		110.94 (14)	
Pseudo-R ²		.08		.08		.19		.20		0.13		0.13		0.1		0.1	
N		939		939		879		879		855		855		904		904	

Note. Channel choice: * $p < .05$, ** $p < .01$.

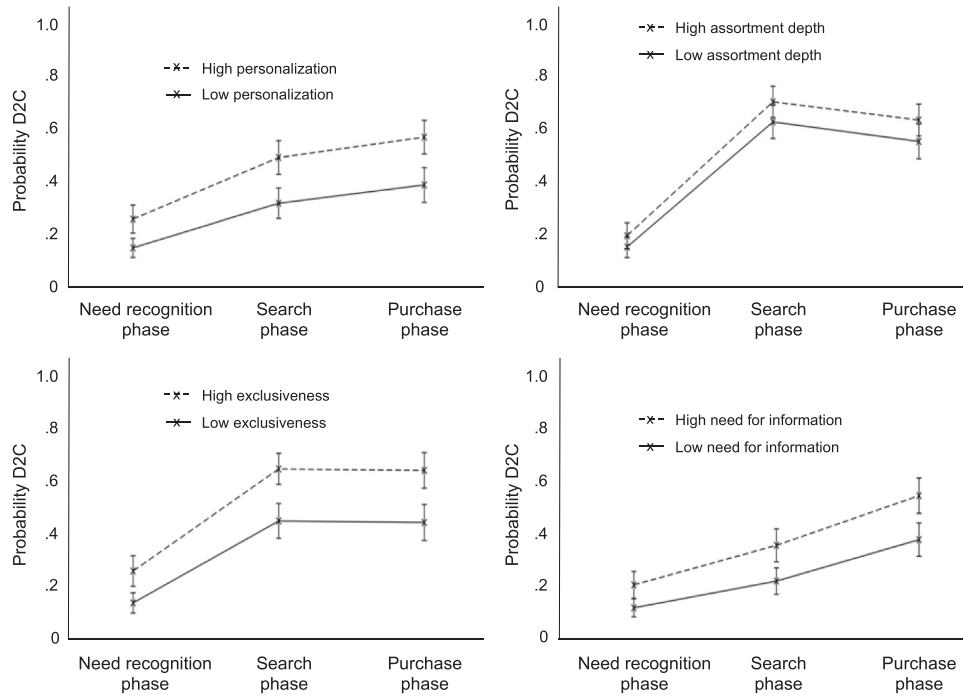


Fig. 2. Relationship between category characteristics levels and customer journey.

need recognition phase significantly prefer multi-brand over D2C webstores. The increase between the search and purchase phases, however, is significant only for the need for information.

The results of Models 1, 3, 5, and 7 indicate that category characteristics impact the channel choice between D2C webstores and digital multi-brand retailers. In line with H1, we find that the more a consumer seeks personalization options

($\beta_{1,1} = 0.38, p < .01$), information ($\beta_{1,7} = 0.36, p < .01$), a deep assortment ($\beta_{1,3} = 0.18, p < .05$), or exclusive products ($\beta_{1,5} = 0.42, p < .01$), the greater the likelihood that she will choose the brands' D2C webstores. The simple effects in Fig. 2 also illustrate these findings. Except for assortment depth, customers prefer D2C over multi-brand operations for higher levels of the category characteristics.

Finally, H3 suggested an interaction effect between category characteristic levels and customer journey. However, we do not find a significant moderation in any of the conditions (see Table 2). Considering the almost parallel slopes of the two conditions for category characteristics in Fig. 2, the absence of interactions is not surprising. We do, however, observe for the category characteristics of personalization, exclusiveness, and need for information, that the respective margins demonstrate significant differences between the manipulations for the three customer journey conditions. For assortment depth, there are no significant differences in any of the phases. Overall, the simple slope analysis shows substantially lower levels of D2C webstore choice in the need recognition phase than in both the search phase and the purchase phase; we find these results for all four category characteristics as well as for both of their conditions.

With respect to the covariates, the results are ambivalent. While shopping-related customer characteristics do not exert any influence for the most part⁹ consumers' shopping frequency and demographic covariates apparently affect the channel choice. As shown in Table 2, the more frequently the participants shop, the lower their likelihood of choosing brands' D2C webstores ($\beta_{9,3} = -.04, p < .01$; $\beta_{9,5} = -.05, p < .01$). While there is no difference between young and old participants in two of the four conditions, we find that younger participants are more likely to choose brands' D2C webstores than older participants in the assortment depth ($\beta_{10,3} = -.12, p < .05$) and need for information conditions ($\beta_{10,7} = -.13, p < .05$). Additionally, male participants choose brands' D2C webstores more often than male participants in the case of the category characteristic assortment depth ($\beta_{11,3} = -.23, p < .01$). Finally, as household income is positively related to channel choice ($\beta_{12,1} = 0.20, p < .05$), we find that participants with higher incomes apparently lean toward brands' D2C webstores. This finding also supports consumers' impressions that prices are lower for digital multi-brand retailers.

Discussion

A consistent omnichannel strategy requires brands to undertake efforts to establish their own digital D2C operations. Doing so allows them to develop long-term customer relationships, particularly through direct access to transaction and preference data. The purpose of this study is to offer insights for brand managers to understand *a*) under which circumstances customers may prefer brands' D2C webstores over digital multi-brand retailers and *b*) how the circumstances vary in the need recognition, search, and purchase phases of the customer journey.

⁹ Stimulation shows a positive influence on the channel choice toward D2C webstores in two of the four characteristics ($\beta_{6,3} = .30, p < .01$; $\beta_{6,5} = .21, p < .01$) as well as a negative effect on the channel choice in the need for information condition toward digital multi-brand retailers ($\beta_{6,7} = -.19, p < .05$). Price consciousness also has a negative effect on the channel choice toward digital multi-brand retailers in the assortment-depth condition as well ($\beta_{7,3} = -.19, p < .05$).

This paper contributes to marketing theory and practice by providing numerous important insights into channel choice – especially the choice between brands' D2C webstores and digital multi-brand retailers. Given the dominance of large multi-brand retailers in many product categories, the establishing of successful D2C webstores is often perceived as a battle of David vs. Goliath. However, in our experimental study, we show that there actually is more potential in the market than simple sales rankings reveal: While costumers overwhelmingly prefer digital multi-brand retailers in the beginning of their customer journey (80% of participants chose the digital multi-brand retailer option in the need recognition phase), this picture drastically changes in the following search and purchase stages. This change in preferences is particularly pronounced for product categories with high degrees of exclusiveness, assortment depth, personalization, or need for information, where we observed channel choice behavior of about 60% in favor of D2C webstores.

Managerial implications

The findings of our empirical study have relevant implications particularly for managers tasked with developing successful D2C webstores.

Our study reveals that the *customer journey* plays a crucial role in preferences. In the need recognition stage prior to brand selection, customers show an overwhelmingly greater preference for the digital multi-brand retailer (80% in favor of multi-brand retailers) and this ratio is only marginally affected by category characteristics. These results confirm industry insights that more than 50% of all initial product searches in the U.S. start on *Amazon* alone. However, already in the search phase we observe a drastic increase in the selection of D2C webstores, which are now preferred by 43% of the participants. And when it comes to the purchase stage, D2C webstores have even reached parity with multi-brand retailers (51% of the participants chose the D2C option). Managers could use these findings to calibrate their marketing strategy, depending on the strength of their respective brands.

Once consumers use a large digital multi-brand retailer for their search process, there is a high likelihood that they will also complete the transaction there. Thus, it is essential for brands to establish top-of-mind awareness in their potential customers. For strong, established brands, this can be an opportunity, particularly if the brand awareness is transferred into an online context. For many, social media platforms have been the method of choice, both for raising brand awareness and for trying to trigger new purchase intentions and thus managing the purchasing process at its inception. A deep integration of social media activities and D2C webstores is essential to allow for a seamless transition from inspiration to purchase. Brands that fail to establish a strong digital presence may lose out and struggle to transfer their offline market shares into the online sphere (Gielens and Steenkamp 2019). Additionally, weaker brands will particularly suffer in this very competitive environment (Ho-Dac, Carson, and

Moore 2013), even more so than in traditional channels (Degeratu, Rangaswamy, and Wu 2000).

Nevertheless, even for weaker or new and, thus far, unknown brands there is hope: they can use the large reach of a digital multi-brand retailer to get their products into the market and then try to win in the second round, i.e., repeat purchases. To do so, brands need to be proactive and try to appropriate the customer relationships from digital multi-brand retailers, which usually do not share any information or contact details. To that end, physical products offer many opportunities, for example, by adding vouchers or marketing materials that point toward the D2C webstore offering to the product package. This tactic could also include extra benefits for direct registration, such as longer warranties, access to firmware updates, preferred access to new product generations, or special service offerings.

The second set of relevant implications stem from the category characteristics focus of our study, as we find that for major product categories D2C webstores might be in an even better position. In categories with either a high degree of personalization, assortment depth, exclusiveness, or need for information, customers prefer D2C webstores over multi-brand-retailers both in the search phase (51% vs. 49%) and even more in the purchase phase (58% vs. 42%). This provides brands operating in such product categories with a particular opportunity to establish a successful D2C webstore, especially when they can leverage the specific aspects of the respective category characteristics:

First, brands active in product categories with a high level of *personalization*, should focus on the creation of a unique experience tailored to customers' needs, which can be achieved by personalizing both the website and the focal products. To personalize landing pages with relevant products and functionalities, retailers need comprehensive information about customer preferences and search histories. In this regard, digital multi-brand retailers are usually better positioned, as they are more frequently the point of contact early in the customer journey and can provide more comprehensive information due to their wider product and service offerings. Thus, brands should focus more on the product dimensions of personalization. While digital multi-brand retailers mostly use standardized templates and structures to allow for efficient processing and searchability, individual product categories often require specific website functionalities or the provision of precise information. Brands offering personalized products should optimize their D2C webstores particularly in these aspects and, thus, provide a clear benefit to consumers over the "one size fits all" approach of digital multi-brand retailers.

This approach seems particularly promising for categories with highly customizable goods, for instance, products that offer a large array of options and have a resulting complex structure of dependencies among choices. In Europe, for example, cars are usually built to order. Manufacturers offer a wide range of individual options and packages, combined with sophisticated configuration tools, including 3D graphics (Piller, Moeslein, and Stotko 2004). Consequently, car

manufacturers can funnel most sales through their own D2C webstores, with digital multi-brand retailers merely acting as lead generators. Similar examples of high degrees of product personalization can already be found across a wide range of product categories, from sneakers to watches. Providing such personalization options is instrumental for brands in these categories to truly leverage the customer preference for D2C webstores.

Second, for product categories with a high level of *assortment depth*, D2C webstores can provide clear benefits for customers. While digital multi-brand retailers are usually far superior in terms of their assortment breadth across product categories, they cannot and do not want to offer every single variant of a specific brand's offering; instead, they focus more on mainstream or bestselling standard products. At the same time, brands often introduce more variants and a constant flow of limited editions to meet the diverse needs and tastes of consumers worldwide.

Third, product categories with a focus on *exclusiveness* have great potential for D2C webstores because brands can deploy a selective distribution strategy: highly attractive products, limited editions, or innovations could be offered only through their own retail channels, either for a certain period or for certain product ranges (Gielens, Gijsbrechts, and Dekimpe 2014). This strategy has already been very effective in the luxury space, where high-profile collections or items are regularly defined as "boutique only" and, thus, are available only through a brand's D2C channels (Moore and Doyle 2022).

A variation of such an exclusivity strategy is a supply-chain preference approach where D2C channels are prioritized for the distribution of high-demand products. For example, during the COVID-19 pandemic, we observed extremely high demand for certain products, ranging from Sony PlayStations to Rolex watches and from bicycles to cars. In certain categories, this level of demand even led to wait lists and gray markets, where used products were sold above official retail prices. Keeping such items, where the current supply cannot meet the high demand, exclusive to D2C channels or, at least, providing preferential treatment to the customers of these channels can be a very effective strategy for strong brands.

Fourth, categories requiring in-depth *information* may constitute another field where brands can create advantages over digital multi-brand retailers, particularly in the case of complex products that require special skills for installation and/or usage. For example, the installation and usage of technical appliances, such as, washing machines, ovens, or fridges provide an excellent opportunity for specially trained inhouse staff, online manuals, and augmented-reality tools (e.g., *Ikea* for furniture) to show customers the full potential of the product (beyond merely featuring the technical specifications) and to foster closer attachment to the brand. Car manufacturers have even managed to create factory pick-ups as brand events, including factory tours, personal instructions, test drives, and professional handover photos and memorabilia (for example, the *Porsche Experience Centre Leipzig* in Germany).

Theoretical implications

Our findings also have several implications for marketing research. First, numerous studies have investigated the many aspects of channel choice. Common to these studies is the fact that the majority of them analyzed customer choices between a physical and a rather generic type of online channel. While these studies have provided valuable insights into consumers' online and offline behaviors, they do not distinguish between types of online channels. Considering that in today's online shopping environment¹⁰ customers face the choice between webstores that are operated by brands themselves and digital multi-brand retailers, it appears necessary to investigate what specifically drives the choice for these specific online channels. This study shows that it is necessary to distinguish between manufacturers' D2C webstores and digital multi-brand retailers, treating them as distinct (online) channels.

Second, the results indicate a clear distinction in channel choice depending on category characteristics. The finding that consumers choose the online channel based on the degree of assortment depth, exclusiveness, personalization, or provided information indicates that future research on channel choice should account for category characteristics.

Finally, the finding that consumers demonstrate distinct choices during the customer journey is particularly relevant for future research. This finding shows the necessity of accounting for the stage of the customer journey in which the customer's decision is made.

Limitations and further research directions

This research is not without limitations, and some future research opportunities arise from the results of our experiments. First, the scenarios tested only one purchasing situation per participant. It would be interesting to test different situations, particularly repeat purchases, to determine whether the choices differ and preferences change.

Second, this study intentionally focused only on physical products. However, it would be interesting to investigate the degree to which our findings are transferrable to services. Previous research has argued that the differences between services and products are complex in nature and exert a tremendous influence on channel choice (see, for example, [Parasuraman, Zeithaml, and Berry 1985](#)). Thus, repeating the experiments in a service context might be necessary to generalize our findings.

Third, in our experimental setting, we distinguished only between digital multi-brand retailers and brand-owned D2C webstores and did not account for alternative retail models. In particular, major digital multi-brand retailers such as *Amazon* also operate as third-party (3P) marketplaces ([Bei and Gielens 2023](#)) open to independent vendors of branded products. In this setting, only the fulfillment and marketing infrastruc-

¹⁰ At the time of some of the previous studies, the online shopping environment was different from what it is today since digital multi-brand retailers were not yet as dominant.

ture is provided, and the platform provider does not own the merchandise, influence the assortment, or set prices. It would be interesting to see whether and in which settings customers prefer these alternative retailers.

Fourth, in our experiments, we took price out of the decision-making process by assuming that it was the same across the channels. In reality, there could be substantial price differences across channels, which may go beyond product pricing to include aspects such as shipping and payment options. It would be particularly interesting to see whether preferences for certain channels still exist in the case of price differentials and whether customers would be willing to pay more in their preferred online channel.

Finally, our study focused only on different channels in the digital sphere and did not include offline channels that could play a role in customers' search or purchasing processes. For example, an extensive online search could be followed by a purchase in a D2C brand store; alternatively, a physical assessment and test of products in D2C brand stores could be followed by purchases on digital multi-brand retailers to secure lower prices ([Verhoef, Kannan, and Inman 2015](#)).

Conclusion

Beyond the theoretical and managerial implications, the findings of this study elucidated the question of under which circumstances customers choose a brand's D2C webstore or digital multi-brand retailers such as the webstores of pure-play online retailers (such as *Zalando*, *ASOS*, or *Westwing*) and brick-and-mortar players who moved into the digital sphere (such as *BestBuy* or *Macy's*) as well as one-party marketplaces (such as *Amazon*, *JD.com*; [Bei and Gielens 2023](#)) in different stages of the customer journey. We find that in certain settings customers have clear preferences for brand-operated D2C webstores. If brands can offer a superior product experience to their customers via exclusive or personalized products or through providing a deep assortment or extensive product information, they have every opportunity to take on digital multi-brand retailers particularly in the search and purchase phases of the customer journey. For example, they can manage pricing to a large degree by actively adjusting the margins for digital multi-brand retailers, as they have direct control over the distribution of exclusive product series and are best positioned to provide a superior brand and product experience. For this reason, this scenario does not seem far-fetched.

Digital multi-brand retailers such as *Amazon* or *BestBuy* still dominate the need recognition phase at the beginning of the customer journey. Also, they have certain scale advantages, particularly in the fulfillment area. However, this particular advantage is more important in geographically very large markets such as the U.S. than in more compact European markets (such as the Netherlands or Germany), where even a single central warehouse location is feasible and where efficient independent logistics providers are available.

Interestingly, while we saw the rise of multi-brand retailers in the digital domain in the last two decades, this

concept collapsed in the brick-and-mortar environment during the same period. Across all Western economies, we have seen a stark decline in multi-brand department stores, such as *Macy's*, *Sears*, and *J.C. Penney* in the U.S., *Debenhams* and *Marks & Spencer's* in the UK, and *Karstadt* and *Kaufland* in Germany. In parallel, there has been strong growth in D2C operations through monobrand boutiques, particularly driven by strong brands in the luxury (e.g., *Gucci*, *Hermes*, *LVMH*, *Audemars Piguet*, *Rimowa*) and apparel (e.g., *Nike*, *Adidas*, *Ralph Lauren*) segments or the field of consumer electronics (e.g., *Apple*) or toys (e.g., *LEGO*). The prevailing perception in the market is that the demand for multi-brand settings has just moved online; thus, *Amazon* has taken over the role of *Sears* or *Karstadt*. However, it could also be the case that

developments in the brick-and-mortar sphere are a precursor of things to come in the digital domain. With the increasing quality and professionalism of D2C offerings and new AI-based search and sorting functionalities on the horizon that could seriously disrupt the curation and aggregation function of multi-brand webstores, *Amazon* and *JD.com* may end up being next in line for disintermediation. In such a scenario, product categories with high degrees of assortment depth, personalization, exclusiveness, or need for information might be the first categories in which customers switch to D2C offerings.

Appendices

Appendix A
Descriptive variables.

Variable	Personalization				Assortment depth				Exclusiveness				Need for information			
	D2C		Multi-brand		D2C		Multi-brand		D2C		Multi-brand		D2C		Multi-brand	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Category characteristic level ^a	.64	.47	.46	.49	.55	.49	.46	.49	.60	.48	.42	.49	.61	.49	.45	.50
Customer journey																
Need recognition phase ^b	.19	.39	.44	.49	.09	.29	.50	.50	.15	.35	.47	.49	.18	.38	.41	.49
Search phase ^b	.38	.48	.31	.46	.46	.49	.22	.41	.48	.50	.28	.45	.32	.47	.33	.47
Purchase phase ^b	.42	.49	.24	.42	.43	.49	.27	.44	.36	.48	.24	.42	.49	.50	.24	.43
Impulse ^c	3.54	1.59	3.40	1.58	3.47	1.64	3.54	1.71	3.50	1.75	3.49	1.69	3.45	1.68	3.53	1.62
Mavenism ^c	4.32	1.28	4.27	1.43	4.13	1.50	4.06	1.49	4.21	1.46	4.14	1.46	4.40	1.37	4.51	1.38
Stimulation ^c	5.27	1.13	5.24	1.20	5.32	1.13	5.08	1.25	5.41	1.13	5.26	1.14	5.24	1.14	5.45	1.10
Price consciousness ^c	5.78	1.00	5.87	1.02	5.87	.93	5.99	.90	5.90	.95	5.98	.93	5.94	.87	6.02	.88
Time pressure ^c	3.70	1.46	3.64	1.62	3.62	1.58	3.72	1.60	3.66	1.62	3.63	1.59	3.75	1.52	3.70	1.58
Shopping frequency ^d	9.00	7.09	8.84	6.31	8.16	6.19	9.28	7.39	7.35	5.42	8.69	6.62	7.68	6.07	8.59	6.61
Age ^e	3.21	1.49	3.28	1.43	3.14	1.50	3.37	1.40	3.25	1.52	3.32	1.45	3.04	1.50	3.30	1.46
Gender ^f	1.51	.54	1.48	.52	1.53	.51	1.46	.51	1.55	.56	1.54	.50	1.49	.54	1.54	.54
Household income ^g	2.68	.96	2.55	.98	2.71	.96	2.67	.97	2.64	1.02	2.71	.96	2.69	.96	2.63	.97
Importance of...																
Personalization ^h	5.54	1.57	4.47	1.92	5.15	1.65	4.10	1.82	4.84	1.54	3.74	1.75	5.08	1.47	4.76	1.75
Assortment depth ^h	4.88	1.66	4.70	1.65	5.65	1.43	5.60	1.33	5.62	1.24	5.12	1.40	4.78	1.52	5.03	1.62
Exclusiveness ^h	4.43	1.82	3.85	1.84	4.83	1.76	3.81	1.84	5.45	1.51	4.21	1.74	4.58	1.62	4.05	1.84
Need for information ^h	5.22	1.70	4.54	1.80	4.67	1.75	3.90	1.80	4.81	1.72	4.05	1.73	5.95	1.13	5.41	1.41
N	325		614		411		468		364		491		265		639	

Note. Items were measured with ^a 1 = high, 0 = low; ^b 0 = no, 1 = yes; ^c 7-point Likert scale (strongly disagree to strongly agree); ^d number of online purchases in a month;

^e 1: 18–25 years, 2: 26–30 years, 3: 31–40 years, 4: 41–50 years, 5: 51–60 years, 6: >61 years, ^f 1 = male, 2 = female, 3 = non-binary, ^g 1: (< \$25,000, 2: \$25,001-\$50,000,

3: \$50,001 to \$100,000, 4: > \$100,000; ^h 7-point rating scale (not at all important to extremely important). Explanation: Of those in the personalization condition that chose D2C, 64% were in the “high” category characteristic level condition, 19% in the early and 38% in the search phase, 42% in the purchase phase. The values for the customer behavior, psychographics, and demographics as well as their importance indications show the means.

Appendix B
Detailed scenarios.

Need recognition / high personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer for her. You have not decided on a specific brand yet]**, but knowing [she is really into gaming and that she has specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you go online and [search for information and possibilities to customize the laptop in order to help you decide.]** You know that laptop computers are sold on brands' websites as well as on various retailers' websites.

Search / high personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer from a known brand for her.]** Knowing [she is really into gaming and that she has specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you go online and [search for information and possibilities to customize the laptop in order to help you decide. You know that the laptop is sold on the brand's website as well as on various retailers' websites.

Purchase / high personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer from a known brand for her.]** Knowing [she is really into gaming and that she has specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you [have already searched for information and decided to buy the laptop that you will customize according to her needs.]** You know that the laptop is sold on the brand's website as well as on various retailers' websites.

Need recognition / high assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her a backpack. You have not decided on a specific brand yet]**, but knowing that [she has very specific wishes regarding the color which is very exotic and not part of the standard assortment]**, you go online and [search for information, especially the variety of available colors to help you decide.]** You know that backpacks are sold on brands' websites as well as on various retailers' websites.

Search / high assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her the backpack model from the brand that everyone is wearing right now.]** Knowing that [she has very specific wishes regarding the color which is very exotic and not part of the standard assortment]**, you go online and [search for information, especially the variety of available colors to help you decide.]** You know that the backpack is sold on the brand's website as well as on various retailers' websites.

Purchase / high assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her the backpack model from the brand that everyone is wearing right now.]** Knowing that [she has very specific wishes regarding the color which is very exotic and not part of the standard assortment]**, you [have already searched for the information and decided for a specific, very fancy-looking backpack.]** You know that the backpack is sold on the brand's website as well as on various retailers' websites.

Need recognition / low personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer for her. You have not decided on a specific brand yet]**, but knowing that [she only uses the laptop for a basic use and watching some series and, therefore, does not have any specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you go online and [search for further information to help you decide.]** You know that laptop computers are sold on brands' websites as well as on various retailers' websites.

Search / low personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer from a known brand for her.]** Knowing that [she only uses the laptop for a basic use and watching some series and, therefore, does not have any specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you go online and [search for further information to help you decide.]** You know that the laptop is sold on the brand's website as well as on various retailers' websites.

Purchase / low personalization

Imagine that the birthday of a dear relative is approaching, and [you are thinking about buying a laptop computer from a known brand for her.]** Knowing that [she only uses the laptop for a basic use and watching some series and, therefore, does not have any specific requirements regarding the specs of a laptop (e.g., hard drive space, graphics, CPU etc.)]**, you [have already searched for information about possible options on the Internet. After having weighed the available information, you decided for a specific brand and configuration.]** You know that the laptop is sold on the brand's website as well as on various retailers' websites.

Need recognition / low assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her a backpack. You have not decided on a specific brand yet]**, but knowing that [she wants a black backpack which is usually part of a standard assortment]**, you go online and [search for the adequate information to help you decide.]** You know that backpacks are sold on brands' websites as well as on various retailers' websites.

Search / low assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her the backpack model from the brand that everyone is wearing right now.]** Knowing that [she wants a black backpack which is part of the standard assortment]**, you go online and [search for the adequate information to help you decide.]** You know that the backpack is sold on the brand's website as well as on various retailers' websites.

Purchase / low assortment depth

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying her the backpack model from the brand that everyone is wearing right now.]** Knowing that [she wants a black backpack which is part of the standard assortment]**, you [have already searched for the adequate information on the Internet and decided to buy it.]** You know that the backpack is sold on the brand's website as well as on various retailers' websites.

(continued on next page)

Appendix B (continued)

Need recognition / high exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. You have not decided on a specific brand yet]**, but knowing that [she really likes brand-new and exclusive toys which are usually not part of a standard assortment]*, you go online and [search for information to help you decide what exactly to purchase.]* You know that toys are sold on brands' websites as well as on various retailers' websites.

Search / high exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. Knowing that she really likes Lego and has already quite a few sets]**, [you decide to buy a set from the brand new release of Lego which is not part of the standard assortment]*. Therefore, you go online and [search for information to help you decide what exactly to purchase. You know that Lego is sold on the brand's website as well as on various retailers' websites.

Purchase / high exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. Knowing that she really likes Lego and has already quite a few sets]**, [you decide to buy a set from the brand new release of Lego which is not part of the standard assortment]*. You have [already searched for the adequate information and decided for a present. You know that Lego is sold on the brand's website as well as on various retailers' websites.

Need recognition / high need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination. She has not decided on a specific brand yet]**. [Given that she is very finical with her purchases of durables, she has numerous specific information requirements regarding the appliance (e.g., detailed user manuals, warranty conditions, availability of spare parts, customer service availability, etc.)]* before deciding. She asks you to search online for the information she needs to help her decide which brand she should buy. You know that washer-dryer combinations are sold on brands' websites as well as on various retailers' websites.

Search / high need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination with a new one that is offered by a well-known brand]**. [Given that she is very finical with her purchases of durables, she has numerous specific information requirements regarding the appliance (e.g., detailed user manuals, warranty conditions, availability of spare parts, customer service availability, etc.)]* before deciding. She asks you to search online for the information she needs to help her decide whether she should buy it. You know that washer-dryer combinations are sold on the brand's websites as well as on various retailers' websites.

Purchase scenario high need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination with a new one that is offered by a well-known brand]**. [Given that she is very finical with her purchases of durables, she has numerous specific information requirements regarding the appliance (e.g., detailed user manuals, warranty conditions, availability of spare parts, customer service availability, etc.)]* before deciding. She has already searched for the information she needs and decided for a washer-dryer combination and asks you to buy it for her. You know that washer-dryer combinations are sold on the brand's websites as well as on various retailers' websites.

Need recognition / low exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. You have not decided on a specific brand yet]**, but knowing that [she likes the standard toys that all kids of her age like]*, you go online and [search for information to help you decide what exactly to purchase.]* You know that toys are sold on brands' websites as well as on various retailers' websites.

Search / low exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. Knowing that she really would like to get her first Lego set]**, [you decide to buy a set from Lego's standard assortment that you know friends have given away as starter sets before]*. Therefore, you go online and [search for information to help you decide what exactly to purchase. You know that Lego is sold on the brand's website as well as on various retailers' websites.

Purchase / low exclusiveness

Imagine that the birthday of a close friend's child is approaching, and [you are thinking about buying a toy for her. Knowing that she really would like to get her first Lego set]**, [you decide to buy a set from Lego's standard assortment that you know friends have given away as starter sets before]*. You have [already searched for the adequate information and decided for a present. You know that Lego is sold on the brand's website as well as on various retailers' websites.

Need recognition / low need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination. She has not decided on a specific brand yet]**. [Given that she is not very finical with her purchases of durables, she has no specific information requirements regarding the appliance (other than the technical specs)]*. She asks you to search online for the information she needs to help her decide which brand she should buy. You know that the washer-dryer combinations are sold on brands' websites as well as on various retailers' websites.

Search / low need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination with a new one that is offered by a well-known brand]**. [Given that she is not very finical with her purchases of durables, she has no specific information requirements regarding the appliance (other than the technical specs)]*. She asks you to search online for the information she needs to help her decide whether she should buy it. You know that the washer-dryer combinations are sold on brands' websites as well as on various retailers' websites.

Purchase scenario low need for information

Imagine that an elderly relative who has no experience in buying online approaches you for your help. [For some time now, she has been thinking about replacing her old washer-dryer combination with a new one that is offered by a well-known brand]**. [Given that she is not very finical with her purchases of durables, she has no specific information requirements regarding the appliance (other than the technical specs)]*. She has already searched for the information she needs and decided for a washer-dryer combination and asks you to buy it for her. You know that the washer-dryer combinations are sold on the brand's websites as well as on various retailers' websites.

Manipulations: [...] = category characteristic (high/low); [...] = customer journey (need recognition/search/purchase).

Appendix C

Description of measures on customer characteristics and behavior.

Construct/Items	Personalization		Assortment depth		Exclusiveness		Service option		Alpha
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Impulsiveness (Ailawadi, Neslin, and Gedenk 2001)									.84
<i>I often find myself buying products on impulse online.</i>	3.32	1.69	3.37	1.82	3.36	1.81	3.40	1.77	
<i>I often make an unplanned purchase when the urge strikes me.</i>	3.57	1.68	3.65	1.75	3.63	1.82	3.61	1.75	
Mavenism (Ailawadi, Neslin, and Gedenk 2001)									.86
<i>I am somewhat of an expert when it comes to shopping.</i>	4.18	1.50	3.98	1.61	4.05	1.61	4.29	1.57	
<i>People think of me as a good source of shopping information.</i>	4.39	1.56	4.15	1.66	4.27	1.61	4.56	1.54	
<i>I enjoy giving people tips on shopping.</i>	4.29	1.65	4.14	1.67	4.19	1.67	4.58	1.57	
Stimulation (Ganesh et al. 2010)									.71
<i>I like interacting with websites that I am interested in.</i>	5.44	1.26	5.38	1.30	5.47	1.23	5.56	1.22	
<i>Seeing interesting websites while shopping satisfies me.</i>	5.04	1.40	5.00	1.41	5.19	1.35	5.17	1.35	
Price consciousness (Ailawadi, Neslin, and Gedenk 2001; Konus, Verhoef, and Neslin 2008)									.72
<i>I compare the prices of various products / brands before I make a choice.</i>	6.00	1.13	6.12	1.00	6.14	1.02	6.20	.93	
<i>I find myself checking the prices even for small items.</i>	5.53	1.45	5.69	1.29	5.68	1.36	5.75	1.32	
<i>It is important for me to get the best price for the products I buy.</i>	5.98	1.07	5.98	1.06	6.01	1.07	6.04	1.00	
Time pressure (Ailawadi, Neslin, and Gedenk 2001)									.84
<i>Most days, I have no time to relax.</i>	3.40	1.69	3.43	1.73	3.37	1.75	3.52	1.78	
<i>I always seem to be in a hurry.</i>	3.51	1.71	3.52	1.75	3.55	1.74	3.59	1.73	
<i>I never seem to have enough time for the things I want to do.</i>	3.95	1.84	3.96	1.85	3.89	1.87	4.03	1.86	

Note. Items were measured with 7–point Likert scale (strongly disagree to strongly agree).

Appendix D

Correlations.

Personalization	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Channel choice	1.00	—	—	—	—	—	—	—	—	—	—
2. Category characteristic	.17	1.00	—	—	—	—	—	—	—	—	—
3. Customer journey	.25	.04	1.00	—	—	—	—	—	—	—	—
4. Impulsiveness	.04	.05	.03	1.00	—	—	—	—	—	—	—
5. Mavenism	.01	−.00	−.01	.22	1.00	—	—	—	—	—	—
6. Stimulation	.01	.04	−.00	.17	.54	1.00	—	—	—	—	—
7. Price consciousness	−.04	−.01	−.04	−.06	.29	.30	1.00	—	—	—	—
8. Time pressure	.02	−.01	.04	.22	.07	.06	.08	1.00	—	—	—
9. Shopping frequency	.01	.00	−.05	.15	.25	.17	.09	.12	1.00	—	—
10. Age	−.02	−.06	−.03	−.16	−.03	.00	.06	−.13	.08	1.00	—
11. Gender	.02	−.02	.04	.15	.01	.05	.10	.07	.03	.02	1.00
12. Household income	.06	−.03	−.06	.00	.06	.00	−.02	−.00	.15	.05	−.05

(continued on next page)

Appendix D (continued)

Assortment depth	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Channel choice	1.00	—	—	—	—	—	—	—	—	—	—
2. Category characteristic	.09	1.00	—	—	—	—	—	—	—	—	—
3. Customer journey	.35	.06	1.00	—	—	—	—	—	—	—	—
4. Impulsiveness	-.02	-.00	-.05	1.00	—	—	—	—	—	—	—
5. Mavenism	.02	-.06	.01	.32	1.00	—	—	—	—	—	—
6. Stimulation	.10	-.02	-.00	.28	.56	1.00	—	—	—	—	—
7. Price consciousness	-.06	-.07	-.00	-.07	.19	.24	1.00	—	—	—	—
8. Time pressure	-.02	.01	-.02	.16	.05	-.02	.04	1.00	—	—	—
9. Shopping frequency	-.08	-.01	-.03	.23	.31	.25	.15	.07	1.00	—	—
10. Age	-.08	-.03	-.01	-.10	-.05	-.08	.08	-.17	.05	1.00	—
11. Gender	.06	.02	.02	.13	.04	.03	.17	.08	.07	.07	1.00
12. Household income	.02	.03	-.02	.07	.15	.07	-.05	.05	.17	-.04	-.04
Exclusiveness	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Channel choice	1.00	—	—	—	—	—	—	—	—	—	—
2. Category characteristic	.17	1.00	—	—	—	—	—	—	—	—	—
3. Customer journey	.28	-.03	1.00	—	—	—	—	—	—	—	—
4. Impulsiveness	.00	-.03	-.05	1.00	—	—	—	—	—	—	—
5. Mavenism	.02	-.02	.05	.31	1.00	—	—	—	—	—	—
6. Stimulation	.06	-.02	-.01	.23	.52	1.00	—	—	—	—	—
7. Price consciousness	-.04	-.03	-.01	-.06	.22	.24	1.00	—	—	—	—
8. Time pressure	.02	.08	-.03	.24	.14	.04	.03	1.00	—	—	—
9. Shopping frequency	-.10	.03	-.03	.24	.25	.15	.06	.09	1.00	—	—
10. Age	-.02	-.01	.01	-.11	-.00	-.03	.01	-.12	-.02	1.00	—
11. Gender	.01	-.06	-.00	.12	.04	.02	.15	.06	.09	.04	1.00
12. Household income	-.04	-.00	-.06	.07	.07	.02	-.12	.03	.19	.02	-.09
Need for information	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Channel choice	1.00	—	—	—	—	—	—	—	—	—	—
2. Category characteristic	.15	1.00	—	—	—	—	—	—	—	—	—
3. Customer journey	.27	-.01	1.00	—	—	—	—	—	—	—	—
4. Impulsiveness	-.02	-.05	.01	1.00	—	—	—	—	—	—	—
5. Mavenism	-.03	-.02	.04	.27	1.00	—	—	—	—	—	—
6. Stimulation	-.09	.00	-.00	.21	.55	1.00	—	—	—	—	—
7. Price consciousness	-.04	-.00	-.00	-.10	.18	.29	1.00	—	—	—	—
9. Time pressure	.01	.00	-.03	.26	.05	-.06	.03	1.00	—	—	—
10. Shopping frequency	-.06	-.02	.00	.26	.30	.17	.02	.07	1.00	—	—
11. Age	-.08	-.02	.01	-.10	.01	.02	.08	-.20	.05	1.00	—
12. Gender	.04	-.02	.01	.12	.02	.07	.12	.07	.04	.02	1.00
13. Household income	.03	.01	-.02	.01	.08	.01	-.08	.00	.13	.06	-.05

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