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RESEARCH ARTICLE

Roles of Traditional, Online-Specific, and Cross-Channel Marketing Instruments in Multi- and Omnichannel Fashion Retail Brand Equity

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Correspondence: Bernhard Swoboda (b.swoboda@uni-trier.de)**Received:** 7 May 2024 | **Revised:** 18 November 2024 | **Accepted:** 19 December 2024**Keywords:** categorization theory | longitudinal modeling | offline and online retail brand equity | reciprocity

ABSTRACT

Multi- and omnichannel retailers use various marketing instruments to position themselves as strong brands. However, we know surprisingly little about how strongly retail brand equity (RBE) benefits from the traditional, online-specific, or cross-channel instruments that consumers perceive when switching channels. This study fills this gap by leveraging categorization theory. It contributes to the literature by analyzing the roles of important marketing instruments for consumer loyalty decisions through offline and online RBE via a sample of 379 consumers surveyed at three different points in time as well as sequential mediation and cross-lagged structural equation modeling. The findings highlight the distinct importance of the indirect and total effects of the instruments for loyalty through offline and online RBE. Furthermore, offline and online RBE reciprocally affect loyalty decisions to different extents, providing additional insights into the roles of the instruments. These findings have direct implications for managers seeking to understand the role of marketing instruments and the interactive role of offline and online RBE in customer loyalty.

1 | Introduction

Multichannel firms integrating offline and online channels and omnichannel firms offering a seamless experience across touchpoints use various marketing instruments (MIs) to increase their positioning as strong brands (e.g., Verhoef, Kannan, and Inman 2015; Wichmann et al. 2022). Retail brand equity (RBE), that is, consumer associations of a retail firm as a unique, attractive, and strong brand, is a major source of competitive advantage (Keller 2010; Zhang, Vorhies, and Zhou 2023). Multi- or omnichannel firms such as H&M (2024) or Adidas (2024) aim for similar offline and online brand positions but emphasize the vital roles of their physical stores. In contrast, Victoria's Secret (2024) and Zara (2022) differentiate offline and online brand environments, for example, by striving for an enjoyment-based brand position offline and an anywhere-anytime brand position online. In all cases, firms should know whether MIs

have different values for offline and online RBE. We thus analyze important MIs. Traditional MIs such as assortment or price are recognized by shoppers across offline and online sales channels and are said to be losing their importance (e.g., Timoumi, Gangwar, and Mantrala 2022; Wichmann et al. 2022). Online-specific MIs may be accessed differently but are channel-specific, as website ease of navigation or security is perceived online (e.g., Khan and Rahman 2016; Toufaily and Pons 2017). Cross-channel MIs include channel integration and consistency, linking retailers' channels, and providing experience for consumers across channels (e.g., Gao and Huang 2021; Lee et al. 2019). We believe that MIs affect consumer loyalty differently through offline and online RBE and that the two types of RBE interact, which may change the role of MIs.

Studies have mostly analyzed traditional MIs, followed by online-specific and cross-channel MIs, as drivers of RBE (e.g.,

Al-Hawari 2011; Baek et al. 2020; Frassetto and Miquel 2017; see Table 1 and, for details, Supporting Information: Appendix A).¹ These authors seldom combine types of MIs or address multi- and omnichannel retailing. The effects of both traditional and online-specific MIs on RBE have been studied only by Ray et al. (2021) and White, Joseph-Mathews, and Voorhees (2013), who partly show the contradictory strengths of effects, for example, of online (vs. offline) services. Few scholars have linked cross-channel MIs rather generally with brands (e.g., Li et al. 2018; Lee et al. 2019), while effects through offline and online RBE have not yet been studied. Several studies have analyzed offline versus online retail brands. For example, Allaway et al. (2011) consider the impacts of assortment or price, and Khan and Rahman (2016) explore those of website design, usage, and navigation. Only Kwon and Lennon (2009a) simultaneously examine the effects of traditional and online-specific MIs on purchase intention through retailers' offline and online brand image. However, online-specific MIs negatively affect consumers' offline brand attitudes. The relative importance of traditional, online-specific, and cross-channel MIs for RBE, particularly offline and online RBE, which likely interact reciprocally, has not yet been studied.

We observe important research gaps and contradictory insights in the literature and address them by answering the following research questions: How do traditional, online-specific, and cross-channel MIs influence offline and online RBE? Which type of MI is most important for consumer loyalty? Are there reciprocal relationships between offline and online RBE, and if so, how do these relationships influence the effects of MIs? We offer two important research contributions.

We contribute to our knowledge by analyzing the impacts of MIs on consumer loyalty through offline and online RBE as well as their total effects (the sum of all direct and indirect effects) and thus relative importance for loyalty. We utilize these MIs for several reasons; they are independently perceived by consumers and

designed by retailers and are important for engaging consumers and strengthening RBE (Bendoly et al. 2005; Timoumi, Gangwar, and Mantrala 2022). Importantly, scholars question the role of traditional MIs in modern retail, whereas others call for further examination (e.g., Blut, Teller, and Floh 2018; Wichmann et al. 2022). We argue that knowledge of the roles of MIs in offline and online RBE is essential, as the respective firm environments, competitors, and shopper associations differ in the two contexts (Swaminathan et al. 2020; Troiville, Hair, and Cliquet 2019). Moreover, whereas studies refer to different theories, we contribute to the application of categorization theory in our context. Indeed, individuals are known to simplify information processing because there is much salient information in demanding multi- and omnichannel contexts. Individuals match information to their subcategory knowledge, such as RBE, and draw inferences that promote decisions (e.g., Alba and Hutchinson 1987). For firms, we show which MIs most strongly influence loyalty decisions and identify offline or online paths (also contrasted with overall RBE in stability checks). The respective consumer insights are valuable, as even most omnichannel retailers have not yet completely integrated all sales channels or touchpoints.

We further contribute to our knowledge by analyzing the reciprocal effects of online and offline RBE on consumer loyalty. Thus, we explore the feedback relationships between these constructs, as one association likely affects the other, and vice versa (Keller 2010). Swoboda and Winters (2021) stress important differences between reciprocally and individually analyze firms' offline and online images, such as underestimated effects. Our study of both RBEs provides further insights into the paths of MIs. Indeed, scholars have called for studies to reveal all relationships (e.g., Iglesias, Markovic, and Rialp 2019; Kwon and Lennon 2009a; Swoboda and Winters 2021). When making decisions, consumers reciprocally transfer knowledge and draw inferences between the respective subcategories in both directions to different degrees (e.g., Fiske et al. 1987). For multi- and

TABLE 1 | Literature review.

| | Marketing Instruments | | |
|------------------------------------|--|---|---|
| | Traditional | Online-specific | Cross-channel |
| Overall retail brand | <i>Baek et al. (2020); Bruhn, Schoenmueller, and Schafer (2012); Çifci et al. (2016); Datta, Ailawadi, and Van Heerde (2017); Huang and Sarigöllü (2012); Iglesias, Markovic, and Rialp (2019); Omar et al. (2021); Rajavi, Kushwaha, and Steenkamp (2019); Swoboda, Weindel, and Hälsig (2016); Zollo et al. (2020)</i> <i>Ray et al. (2021); White, Joseph-Mathews, and Voorhees (2013)^b</i> | Al-Hawari (2011) | Frasquet and Miquel (2017) ^b ; Gao and Huang (2021) ^a ; Lee et al. (2019) ^a ; Li et al. (2018) ^a ; Schramm-Klein et al. (2011) ^b |
| Offline and/or online retail brand | <i>Allaway et al. (2011); Beristain and Zorrilla (2011); Das (2015), Gil-Saura et al. (2013)</i> | Khan and Rahman (2016); Khan et al. (2020); Lin and Lee (2012); Toufaily and Pons (2017) ^b Kwon and Lennon (2009a) ^b | — |

Note: *Italic* = studies on RBE (further ones on brand trust, image/attitudes, engagement etc.).

^aOmnichannel studies.

^bMultichannel studies.

omnichannel retailers, especially those striving for different offline and online brand positioning, the respective insights are valuable because they reveal possible synergies and enhanced conclusions regarding MIs.

In summary, this study analyzes the effects of traditional, online-specific, and cross-channel MIs on consumer loyalty through offline and online RBE as well as interactions between offline and online RBE. The remainder of this study proceeds as follows. By drawing from theory, the authors develop hypotheses and test them based on consumer evaluations of leading fashion firms in two studies. After the results are presented, implications and directions for future research and practice are provided.

2 | Theory and Hypotheses

2.1 | Conceptual Framework

To address our aims, we conceptualize three types of MIs facing consumers shopping at multi- and omnichannel retailers as salient information attributes (see Figure 1). We choose these MIs for the abovementioned reasons and because they are mostly often studied, albeit mostly separately, and they are most important for consumers shopping in major sales channels at multi- and omnichannel retailers (e.g., Hänninen, Kwan, and Mitronen 2021; Timoumi, Gangwar, and Mantrala 2022). Each MI, including several elements, for example, price or assortment for traditional MIs, is conceptualized, selected in a systematic process on the basis of a review of the brand-related literature (see [Supporting Information: Appendix A](#)) methodologically on a second-order basis, and grouped without overlap whenever possible. We select the most often studied elements.

First, traditional MIs reflect the conventional, most often studied, and important elements (assortment, price, layout, and communication) that multi- and omnichannel retailers provide in online and offline sales channels (Blut, Teller, and Floh 2018; Datta, Ailawadi, and Van Heerde 2017; Swoboda, Weindel, and Hälsig 2016). For example, consumer perceptions of assortment (e.g., quality of all articles offered) and price (e.g., value for money) are of major importance for firm differentiation and consumer attraction and yet are said to lose relevance for multi- and omnichannel brand positioning (e.g., Emrich, Paul, and Rudolph 2015; Troiville, Hair, and Cliquet 2019; Wichmann et al. 2022). Assortment, price, layout, and communication exert

individual effects but are conceptually integrated in this study (e.g., Swoboda, Weindel, and Hälsig 2016).

Second, out of many online options that consumers have at multi- and omnichannel retailers, we focus on website elements (following Kwon and Lennon 2009a, 2009b; Montoya-Weiss, Voss, and Grewal 2003). To avoid overlaps, we refer to these as online-specific MIs, even if they are accessible in physical stores as well. The authors differentiate functional elements such as the aesthetics/architecture of a website and ease of navigation (Bressolles, Durrieu, and Deans 2015; Toufaily and Pons 2017) and relational elements such as specific services/content and security/privacy (Al-Hawari 2011; Toufaily and Pons 2017). These elements form the first level of an online shopping experience and thus are particularly designed to compete in online markets (Bolton et al. 2022; Khan and Rahman 2016), where their importance for consumer loyalty is shown (Toufaily and Pons 2017), but not for offline and online RBE (e.g., Bressolles, Durrieu, and Deans 2015).

Third, we conceptualize cross-channel MIs that represent the degree of channel integration and convey both retailer sales channel synergies and consumer channel switches (e.g., interactive activities across offline and online sales channels; Frasquet and Miquel 2017; Gao and Huang 2021; Li et al. 2018). These are essential for the consumer shopping experience, and firms such as Zara pursue success through their respective integration (Shen et al. 2018; Zara 2022). We thus integrate perceived online–offline and offline–online integration with channel consistency (e.g., Lee et al. 2019) because it is essential for multi- and omnichannel strategies (e.g., Timoumi, Gangwar, and Mantrala 2022).

RBE is defined as brand awareness and strong, unique, and favorable brand associations in consumer memory (Keller 1993, 2010; Zhang, Vorhies, and Zhou 2023). We follow this theoretical and holistic approach, which is most often used and cited in brand research (Rojas-Lamorena, Del Barrio-García, and Alcántara-Pilar 2022), further develop it for retailers, and conceptually distinguish offline and online RBE for several reasons. First, the ways in which brands behave online and offline differ (Keller 2010, 2016). Therefore, it is important for multi- and omnichannel firms to differentiate themselves with both RBEs from competing brands that are active in both contexts and to evaluate the two more than overall RBE (e.g., Verhoef, Kannan, and Inman 2015; Wichmann et al. 2022). Second,

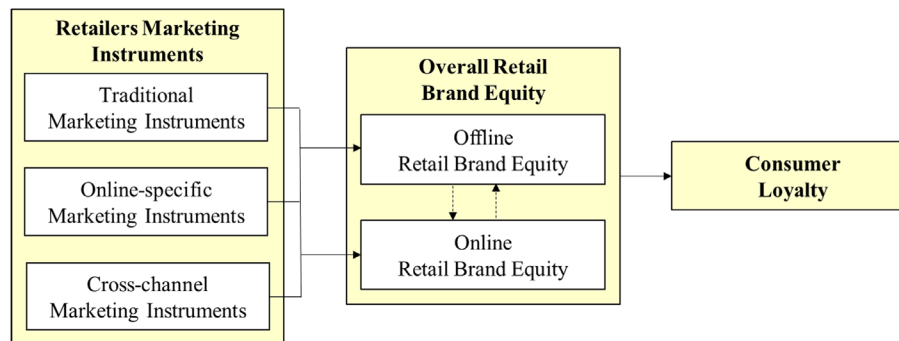


FIGURE 1 | Conceptual framework.

scholars argue that offline and online stores are too different to be merged into an overall RBE conceptualization without compromising validity (Swaminathan et al. 2020; Troiville, Hair, and Cliquet 2019). Third, retailers need to consider offline and online contexts simultaneously, as the major effects of an online brand strategy are contingent on offline activities, and vice versa (Zhang, Vorhies, and Zhou 2023). Fourth, customers can perceive RBE channel-specifically through available information (Keller 2016), refer to familiar offline or online knowledge to draw inferences, and process information more efficiently for decision-making (Epitropaki and Martin 2005; Goodstein 1993). Differentiation allows us to understand how customer behavior overlaps (Keller 2020). Fifth, as mentioned, leading retailers differentiate offline and online brand environments and positioning.

Consumer loyalty is conceptualized as a willingness to recommend and patronize retail firms (Oliver 1999; Sirohi, McLaughlin, and Wittink 1998; Swoboda and Winters 2021). Conative loyalty is a specific focus because it represents a deep long-term commitment to a retail brand, evokes a sense of attachment, and is more readily measured than are objective shopping data (e.g., Gao and Huang 2021). Repurchase intention is alternatively tested for stability reasons.

2.2 | Theory

The literature in Table 1 adopts different theories; signaling theory assumes stimulus effects on RBE (e.g., Rajavi, Kushwaha, and Steenkamp 2019), and social exchange theory (e.g., Lee et al. 2019) and shopping goal theory (e.g., Swoboda, Weindel, and Hälsig 2016) are also considered. However, reciprocity is hardly explained (for further details, see [Supporting Information: Appendix A](#)). We contribute to the field by applying categorization theory, which captures the complexity of consumer cognition in multi- and omnichannel settings very well. This theory accounts for cognitive structures in consumer decisions and suggests that individuals are more likely to use a categorical mode of thinking by categorizing information and existing associations if the information environment is demanding (such as in multi- and omnichannel shopping; e.g., Epitropaki and Martin 2005; Timoumi, Gangwar, and Mantrala 2022). This theory fits our study design and provides a rigorous explanation for reciprocal associations.

Accordingly, people hierarchically structure knowledge in their memory for efficient information processing (Fiske et al. 1987). Individuals categorize environments and objects and compare their perceptions with existing basic categories or lower-level category members (subcategories) and associated attributes in memory (Keaveney and Hunt 1992; Puligadda, Ross Jr, and Grewal 2012). Perceptions of respective unfamiliar salient information attributes evolve into novel basic categories and subcategories; those of familiar information match a basic category or subcategory knowledge (Fiske et al. 1987). Therefore, individuals rely on the most familiar and representative attributes and subcategory knowledge to draw the strongest inferences (Alba and Hutchinson 1987; Goodstein 1993; Loken 2006). Moreover, knowledge is transferred among subcategories, and reciprocal inferences are drawn, while the congruence of subcategories

expands these inferences in both directions (Cohen and Basu 1987; Mervis and Rosch 1981). Category knowledge and inferences are used for judgments in decisions; that is, they affect individual behavior (Epitropaki and Martin 2005; Keaveney and Hunt 1992).

In our context, retailers are the basic category, offline and online RBE are subcategories, and MIs are perceived as salient information attributes by consumers (e.g., Gil-Saura et al. 2013; Toufaily and Pons 2017). This theory suggests that consumers perceive MI attributes and match them with online and offline RBE associations. The more representative or familiar the attributes are for consumers, the stronger the matches with the respective RBE. However, MIs match not only online RBE, for example, but also offline RBE. Moreover, consumers draw inferences among RBEs and between such subcategories and the retailer. For example, the reciprocal effects of subcategories are based on perceived RBE congruence, as consumers draw inferences from offline to online RBE, and vice versa (this is also related to schema theory; Epitropaki and Martin 2005; Wang, Beatty, and Mothersbaugh 2009). Accordingly, consumer category knowledge and inferences are drawn in loyalty decisions (e.g., Loken 2006).

Next, we derive hypotheses by providing insights into the extent of empirical knowledge for each hypothesis and then by referring to theoretical mechanisms for indirect and total effects of MIs on loyalty through RBE (not assuming direct effects but testing for them) and for RBE's reciprocal effects.

2.3 | Hypotheses on the Effects of MIs

Considering traditional MIs, studies often analyze the effects of individual MIs such as assortment or layout on offline or general brand associations (e.g., Rajavi, Kushwaha, and Steenkamp 2019; Swoboda, Weindel, and Hälsig 2016). Only Kwon and Lennon (2009a) show the effects of traditional MIs on purchase intention through consumers' offline and online brands' attitudes but do not theorize as such. We provide novel categorization theory-based reasoning and expect different paths of traditional MIs through offline and online RBE.

Traditional MIs are salient information attributes and are categorized by consumers into a matched subcategory, that is, the online or offline RBE of a multi- and omnichannel retailer. Consumers refer to their brand associations and draw inferences for loyalty judgments (e.g., Loken 2006). However, the attributes can be matched to different subcategories, such as both RBEs, anchored in consumers' memory and enabling specific information processing (Mervis and Rosch 1981; Timoumi, Gangwar, and Mantrala 2022). Traditional MIs affect offline RBE and online RBE (Kwon and Lennon 2009a), as consumers switch between channels to compare their offers (mostly assortment and prices in offline and online channels; Emrich, Paul, and Rudolph 2015; Haridasan, Fernando, and Balakrishnan 2021). The complementary nature of a traditional MI makes it usable for both RBEs (e.g., Melis et al. 2015). Since a match with both RBEs is theoretically obvious, we assume inferences drawn from both subcategories in loyalty decisions (e.g., Loken 2006).

However, as salient information attributes match more strongly with the most familiar subcategory, we assume different strengths for traditional MIs through the offline and online RBE paths. Owing to the rapid growth of online channels, consumer perceptions can strongly match traditional MIs with online RBE (e.g., Wichmann et al. 2022). However, as most multi- or omnichannel retailers start as former brick-and-mortar stores, their offline sales channel continues to play a central role for consumers (e.g., Troiville, Hair, and Cliquet 2019). A stronger match with offline RBE is likely, and most consumers more easily retrieve such MIs (e.g., Gil-Saura et al. 2013; Keller 2010). Matching attributes on the basis of such prior exposure leads to the strongest activation (e.g., Goodstein 1993). For example, the perception of a retailer's assortment evokes the associations with which the consumer is most familiar. Consumers rely on *this familiar subcategory* to draw strong inferences (e.g., Zhang, Vorhies, and Zhou 2023). As consumers use the strongest inferences when making decisions, we conclude that traditional MIs have a stronger effect on loyalty via offline (vs. online) RBE (Loken 2006).

We hypothesize the following:

H1. *Traditional MIs have a positive indirect effect on loyalty through (a) offline RBE and (b) online RBE, where (c) the indirect effect through offline (vs. online) RBE is stronger.*

Considering online-specific MIs, scholars have studied the effects of individual MIs, for example, website aesthetics or security, through online and overall RBE (e.g., Khan and Rahman 2016; Toufaily and Pons 2017). Again, only Kwon and Lennon (2009a) reveal the paths of online-specific MIs through consumers' offline and online brand attitudes (not RBE), without discussing their relative importance and showing surprising negative paths through offline brand attitudes. We initially provide categorization theory-based reasoning for the different effects of online-specific MIs via both RBEs.

Online-specific MIs are also perceived as salient information attributes, mostly while accessing a retailer's website (e.g., Khan and Rahman 2016). Owing to this channel specificity, it seems obvious that shoppers match online-specific MIs with online RBE and draw respective inferences (e.g., Chen and Dibb 2010). However, online-specific MIs can crosswise match offline RBE as well. For example, if a customer faces a choice between two attractive offline retail brands, he or she may also leverage knowledge from a retailer's website when choosing which brand to purchase (Timoumi, Gangwar, and Mantrala 2022). We assume that online-specific MIs match online and offline RBE when affecting consumer loyalty.

Different path strengths of online-specific MIs on loyalty through online and offline RBE are theoretically expected. It is conceivable that these MIs are more strongly linked to offline RBE because, in shoppers' mindsets regarding a firm, online-specific MIs may be anchored to the offline RBE origin of many retailers (e.g., Ratchford et al. 2022). However, these MIs are salient information attributes from online channels. A stronger channel-specific match based on representativeness is more likely (Toufaily and Pons 2017). Without much cognitive effort, shoppers subordinate online-specific MIs to the online RBE of

a retailer (i.e., draw inferences, Cohen and Basu 1987). Websites serve as digital shopping windows, are ubiquitously available, and are used by former brick-and-mortar firms such as Snipes to strengthen their online brands (e.g., Forbes 2021; White, Joseph-Mathews, and Voorhees 2013), because of representativeness and respective online-specific inferences in loyalty decisions (Sohn 2017). We assume a stronger indirect effect on loyalty through online (vs. offline) RBE.

Therefore, we propose the following:

H2. *Online-specific MIs exert a positive indirect effect on loyalty through (a) offline RBE and (b) online RBE, where (c) the indirect effect through online (vs. offline) RBE is stronger.*

Scholars have linked cross-channel MIs with the brand identity or engagement of multi- and omnichannel firms (e.g., Lee et al. 2019; Li et al. 2018). To our knowledge, important and probable cross-channel MIs' effects through offline and online RBE have not been theorized.

The consideration of cross-channel MIs as salient information attributes serves the channel-linked evaluation of categorized brand knowledge for inferences in decisions (e.g., Lee et al. 2019). The attributes match online and offline RBE when consumers associate them with a particular sales channel. Such channel-specific associations are transferred to draw inferences about loyalty to a retailer (e.g., Gao and Huang 2021). For example, when making a purchase at an Adidas online store, a consumer can have the product delivered or pick it up in store, which may match the online brand and positively translate into category knowledge and consumer loyalty (Adidas 2024; Frasquet and Miquel 2017). In contrast, when making a purchase at an Adidas offline store, consumers can order products online that are out of stock, which may match the offline brand and its path for loyalty. Cross-channel MIs match both types of RBEs (see also Frasquet and Miquel 2017 for halo effects).

As the strength of a match of cross-channel MIs depends on channel-specific familiarity or relevance, differences in the strength of effects on loyalty through RBEs are likely (e.g., Melis et al. 2015; Sohn 2017). We can theoretically argue that the match of cross-channel MIs and offline (vs. online) RBE is stronger. This argument can be rationalized by a shopper's stronger familiarity with cross-channel MIs at offline retail stores (Alba and Hutchinson 1987). The knowledge transfer from a basic-level retailer category to an offline RBE subcategory favors this match. In contrast, we can argue that the match between these MIs and online (vs. offline) RBE is stronger. One reason for this is that this salient cross-channel information has greater channel-specific relevance for online RBE than for offline RBE, as the former is typically the weaker channel for retailers (Frasquet and Miquel 2017). Shoppers at many multi- and omnichannel firms mostly use offline channels, both in general and when switching channels (Timoumi, Gangwar, and Mantrala 2022). Finally, an easier perception of cross-channel attributes in the online context favors a stronger match. We therefore hypothesize that there are more inferences and stronger effects on loyalty through online RBE than through offline RBE.

We propose the following hypothesis:

H3. *Cross-channel MIs exert a positive indirect effect on loyalty through (a) offline RBE and (b) online RBE, where (c) the indirect effect through online (vs. offline) RBE is stronger.*

With respect to the relative importance of traditional, online-specific, and cross-channel MIs, no insights exist in the literature. We hypothesize different total effects of MIs on consumer loyalty.

Theoretically, all MIs are salient information (Khan and Rahman 2016; Lee et al. 2019), and their successful categorization enables consumers to draw inferences from different subcategories, which leads to evaluations of and intentions to be loyal to a retailer by consumers (Loken 2006). With respect to the strength of these inferences, the perception of the attributes plays a crucial role. The more often MIs are perceived and the more relevantly and strongly they match with the RBEs, the stronger their inferences (Goodstein 1993). At least two reasons lead us to argue that consumers draw stronger inferences in loyalty decisions based on traditional (vs. online-specific or cross-channel) MIs. Traditional MIs are constantly available to consumers across all channels. They may be unconsciously perceived in all purchasing processes and can therefore be matched with offline and online RBE without a considerable amount of effort (Wichmann et al. 2022). In contrast, online-specific MIs are perceived when visiting a website. This forces a match with online RBE but a weaker activation of offline RBE (Bolton et al. 2022). Cross-channel MIs are perceived primarily when consumers obtain a retailer's website's link offline, and vice versa (Gao and Huang 2021). Traditional (vs. other) MIs offer greater information value, serve as orientation aids, and are frequently and consciously referenced (Blut, Teller, and Floh 2018). These MIs provide consumers with a benefit, which increases their recognition (comparison shopping; Keller 2010; Zhang, Vorhies, and Zhou 2023). Thus, a stronger match with both subcategories occurs.

Moreover, cross-channel MIs more strongly match with RBEs in the total effect than do online-specific MIs and allow consumers to draw stronger inferences for at least two reasons. First, as consumers perceive cross-channel information attributes, positive synergies can be established between various channels, whereby consumers assign them to offline and online RBE (Frasquet and Miquel 2017; Ratchford et al. 2022). Second, cross-channel MIs enable omnipresent availability in all channels, whereby shoppers are more likely to perceive and access them than they are online-specific MIs (Gao and Huang 2021; Haridasan, Fernando, and Balakrishnan 2021). Unlike online-specific MIs, cross-channel MIs support a seamless experience that is perceived more positively by consumers (e.g., Gao and Huang 2021; Zhang, Vorhies, and Zhou 2023). Thus, cross-channel MIs match more strongly with offline and online RBE in loyalty decisions than do online-specific MIs.

We propose the following hypothesis:

H4. *The total effect of traditional MIs on loyalty is stronger than those of (a) online-specific and (b) cross-channel MIs, and (c)*

the total effect of cross-channel MIs is stronger than that of online-specific MIs.

2.4 | Hypotheses on the Reciprocal Effects of RBE

We theorize reciprocity between online and offline RBE to fully understand how both affect loyalty and the hypothesized MI pathways. Empirically, Kwon and Lennon (2009a) assume but do not show or theorize reciprocal links between consumer offline and online brand attitudes. Swoboda and Winters (2021) reveal the reciprocal effects of both multichannel images and their explanatory power.

By switching channels, shoppers are likely to transfer knowledge and draw inferences between subcategories (i.e., offline and online RBE; Wang, Beatty, and Mothersbaugh 2009). Inferences in both directions are supported by the congruence of characteristics among subcategories (e.g., Epitropaki and Martin 2005). Both arise when the transferred knowledge between offline and online RBE can be compared, and similar characteristics can be identified. This situation can also be explained by the information retrieval that occurs through the activation of brand associations in both directions (e.g., Puligadda, Ross Jr, and Grewal 2012). For example, the activation of offline RBE by traditional MIs activates online RBE through cognitive linkages, whereas the activation of online RBE by online-specific MIs affects offline RBE. Such inferences, which methodologically represent the sum of all reciprocal (total) effects of offline and online RBE, are drawn by shoppers in loyalty decisions (e.g., Loken 2006).

We assume that reciprocally linked offline and online RBE affect consumer loyalty differently. We argue that category knowledge transfer differs between subcategories. A weaker (vs. stronger) congruence of subcategories limits the knowledge transfer and strength effect differences of RBEs (e.g., Epitropaki and Martin 2005). For example, consumers facing an unappealing online brand are more likely to rely on a familiar offline brand to draw inferences when making loyalty decisions (e.g., Loken 2006). We also argue that different effects are caused by different degrees of activation (e.g., Anderson 1983). For example, for former brick-and-mortar consumers, the activation of offline (vs. online) RBE is more likely, as they more frequently access this in shopping decisions (e.g., Frasquet and Miquel 2017). We assume that consumers draw the strongest inferences in loyalty decisions from the most knowledgeable and activated subcategory (e.g., Badrinarayanan et al. 2012); that is, the reciprocal total effect of offline (vs. online) RBE on loyalty is stronger.

Therefore, we propose the following:

H5. *(a) Offline and online RBE are reciprocally linked, and (b) the reciprocal (total) effect of offline (vs. online) RBE on consumer loyalty is stronger.*

3 | Empirical Studies

To test the hypotheses and overcome the shortcomings of cross-sectional studies (e.g., Zyphur et al. 2020), we conduct

methodologically distinct studies using the same consumer sample over time and refer to these studies as Studies 1 and 2 for clarity. These studies explore the paths and the total effect of MIs (measured at time t_1) through RBE (t_2) on loyalty (t_3) and cross-lagged the reciprocal effects of offline and online RBE (to fully understand MI effects). We also perform several stability checks.

3.1 | Study 1 (Sequential Mediation)

3.1.1 | Sample

We choose fashion retail in Germany as the study object for various reasons. This sector represents one of the largest sectors in many countries and accounts for 24% and the highest amount of online sales (more than the electronics sector, with 22%, according to the German Retail Association; HDE/IFH 2023; Planet Retail 2023). It consists of many multi- and omnichannel firms, and their systematic selection allows us to avoid individually selected or firm-specific insights. Shoppers have high channel experience, and many retailers are well-known, which enables a systematic selection of firms and avoids firm-specific results (Timoumi, Gangwar, and Mantrala 2022). With approximately 25 firms accounting for 45% of the market share, this sector is not highly concentrated (in contrast, one electronics retailer generates 38% of all industry sales), and RBE is particularly important in this sector. Moreover, leading firms use many MIs to address consumers, who typically shop for fashion items every 40 days (Hult et al. 2019).

We respect the major requirements of long-term studies and provide several pretests. First, we choose eleven of the 15 top-selling fashion firms, as they likely have multi- or omnichannel structures and are likely those most often frequented by shoppers (Oh, Teo, and Sambamurthy 2012). Second, the eight most frequented retailers are selected on the basis of face-to-face interviews with 30 graduate students in a pretest. However, two firms that offer not only fashion items but also other items are eliminated. Third, a pretest is used (based on the quota sample according to the age and gender of the population and face-to-face interviews, $N=140$) to ensure regular experiences at the retailers and to test our measurements. Two more firms with the lowest levels of shopping experience are eliminated. Thus, four retailers are included in the survey (e.g., Lazaris et al. 2021). These retailers are all omnichannel (e.g., have integrated transactions, product/price information, etc.; Gao et al. 2021; Gao and Huang 2021), and we test our hypothesis in this context. This pretest also leads to some item reductions to obtain satisfactory results regarding reliability and validity for the final measurements.

We use quota sampling, following the national distribution of age and gender among 500 respondents in a typical midsize city with a similar distribution (see Table 2). From an existing panel, 700 individuals who regularly shop offline and online are recruited in the screening phase t_0 by email and phone until 500 agree to participate through three survey waves (due to power considerations; Wang and Rhemtulla 2021). We inform them of the study focus and ask for sociodemographic information, their internet expertise, and their use of the selected retailers. For each respondent, we randomly select the first or second retailer that he/she knows and has frequently used for offline and online shopping in the past and that matches our pretests for evaluation in all waves (to avoid top-of-mind selection biases). The main surveys are conducted 4–5 months apart over a period of 10–11 months in 2022–2023 by trained interviewers via standardized questionnaires at individuals' homes (to increase data quality; Bennink, Moors, and Gelissen 2013). A minor-price lottery serves as an incentive. Another requirement is for respondents to have shopped online and offline at the selected retailer prior to each wave (to capture current associations). These requirements are fulfilled by 475 respondents in the first wave. In the following waves, 29 and 40 individuals are eliminated. We ensure the stability of the within-person variance for each person by calculating individual average values of the self-assessment construct of self-efficacy (measured with three items; Hamaker 2023; see Supporting Information: Appendix B) and exclude nine respondents. Finally, 18 Mahalanobis distance-based outliers emerge, and the sample consists of 379 respondents.

The age group 29–49 is slightly overrepresented compared to our plan. As our data are not normally distributed, robust maximum likelihood estimators are used for hypothesis testing (Gao, Shi, and Maydeu-Olivares 2020).

3.1.2 | Measurement

We use Likert-type scales (from 1 = *strongly disagree* to 7 = *strongly agree*) and refer to the literature for the measurements of our constructs (see Table 3).

MIs are measured at time point t_1 and on a second-order basis via factor analysis for several reasons. Higher-order modeling is an important advance because multiple constructs are conceptualized at a higher level of abstraction; the contribution of each dimension to a higher-level construct can be assessed and delineated (Koufteros, Babbar, and Kaighobadi 2009). Individual dimensions can converge in a higher-order construct, as first-order dimensions are conceptually and significantly different

TABLE 2 | Sample characteristics.

| | Realized quota sample (%; $N=379$) | | | Planned quota sample (%; $N=500$) | | |
|-------------|-------------------------------------|--------|-------|------------------------------------|--------|-------|
| | Male | Female | Total | Male | Female | Total |
| Age 15–29 | 10.3 | 10.6 | 20.8 | 11.7 | 10.7 | 22.4 |
| Age 29–49 | 18.2 | 18.7 | 36.9 | 17.4 | 16.8 | 34.2 |
| Age over 50 | 19.5 | 22.7 | 42.2 | 21.2 | 22.2 | 43.4 |
| Total | 48.0 | 52.0 | 100.0 | 50.3 | 49.7 | 100.0 |

TABLE 3 | Reliability and validity.

| Construct | MV/std | FL | KMO | ItTC | α | CR | λ |
|--|-----------|-------|-------|-------|----------|-------|-----------|
| Time point one | | | | | | | |
| Traditional MI | | | | | | | |
| Assortment (acc. to Chowdhury, Reardon, and Srivastava 1998; Swoboda, Weindel, and Hälsig 2016) | | | | | | | |
| [Retailer] have a very good assortment selection. | 4.13/1.45 | 0.874 | 0.738 | 0.788 | 0.879 | 0.879 | 0.871 |
| I like and enjoy the variety of branded product at [...]. | 3.62/1.63 | 0.791 | | 0.729 | | | 0.825 |
| I find everything I need at [...]. | 3.41/1.58 | 0.866 | | 0.777 | | | 0.828 |
| Price (acc. to Chowdhury, Reardon, and Srivastava 1998; Swoboda, Weindel, and Hälsig 2016) | | | | | | | |
| [Retailer] has reasonable and fair prices. | 4.63/1.44 | 0.907 | 0.731 | 0.824 | 0.896 | 0.897 | 0.911 |
| I obtain value for my money at [...]. | 4.61/1.34 | 0.910 | | 0.829 | | | 0.905 |
| I can buy products for less at [...]. | 4.35/1.47 | 0.775 | | 0.736 | | | 0.776 |
| Layout (acc. to Chowdhury, Reardon, and Srivastava 1998; Swoboda, Weindel, and Hälsig 2016) | | | | | | | |
| The overall store design of [retailer] generally nice. | 3.77/1.59 | 0.913 | 0.771 | 0.885 | 0.953 | 0.953 | 0.917 |
| I really like the presentation of the products at [...]. | 3.67/1.66 | 0.954 | | 0.916 | | | 0.953 |
| The shopping atmosphere at [...] is comfortable for me. | 3.54/1.65 | 0.933 | | 0.900 | | | 0.930 |
| Communication (acc to Kelly and Stephenson 1967; Swoboda, Weindel, and Hälsig 2016) | | | | | | | |
| I like the advertising/communication of [retailer]. | 3.71/1.52 | 0.865 | 0.753 | 0.811 | 0.911 | 0.911 | 0.888 |
| The advertising/communication of [...] is informative. | 3.69/1.40 | 0.914 | | 0.844 | | | 0.891 |
| I see the advertising/communication of [...] very frequently. | 3.75/1.38 | 0.859 | | 0.806 | | | 0.859 |
| Online-specific MI | | | | | | | |
| Website aesthetic (acc. to Bressolles, Durrieu, and Deans 2015; Kwon and Lennon 2009a) | | | | | | | |
| I like the look and feel of the website of [retailer]. | 4.78/1.42 | 0.956 | 0.755 | 0.915 | 0.951 | 0.952 | 0.954 |
| The website of [...] is visually appealing. | 4.69/1.43 | 0.960 | | 0.917 | | | 0.962 |
| I like the pictures/images used in [...] website. | 4.74/1.46 | 0.875 | | 0.866 | | | 0.877 |
| Website navigation (acc. to Bressolles, Durrieu, and Deans 2015; Montoya-Weiss, Voss, and Grewal 2003; Kwon and Lennon 2009a) | | | | | | | |
| Navigating [retailers] web pages is easy for me. | 5.06/1.20 | 0.933 | 0.733 | 0.845 | 0.900 | 0.903 | 0.916 |
| How to order products on [...] website is easy to understand. | 4.89/1.17 | 0.871 | | 0.806 | | | 0.878 |
| I find what I am looking for easy on [...] website. | 5.00/1.21 | 0.796 | | 0.754 | | | 0.812 |
| Website service/content (acc. to Montoya-Weiss, Voss, and Grewal 2003; Kwon and Lennon 2009a) | | | | | | | |
| Service provided by [retailer] through the website is convenient. | 4.40/1.19 | 0.761 | 0.721 | 0.719 | 0.887 | 0.892 | 0.779 |
| Service provided by [...] through the website is reliable. | 4.40/1.17 | 0.932 | | 0.833 | | | 0.914 |
| Assistance provided by [...] through the website is helpful. | 4.32/1.19 | 0.865 | | 0.791 | | | 0.872 |
| Security/privacy (acc. to Bressolles, Durrieu, and Deans 2015; Montoya-Weiss, Voss, and Grewal 2003; Kwon and Lennon 2009b) | | | | | | | |
| The [retailer] will not misuse my personal information. | 3.70/1.45 | 0.945 | 0.500 | 0.895 | 0.944 | 0.945 | 0.976 |
| I feel save due to [...] payment information in online transactions. | 3.80/1.49 | 0.945 | | 0.895 | | | 0.916 |
| Cross-channel MI | | | | | | | |
| Offline–online integration (acc. to Bendoly et al. 2005) | | | | | | | |
| If you purchase in the store of [retailer] | | | | | | | |

(Continues)

TABLE 3 | (Continued)

| Construct | MV/std | FL | KMO | ItTC | α | CR | λ |
|--|-----------|-------|-------|-------|----------|-------|-----------|
| (1) you can find out about the products in its online store. | 3.88/1.89 | 0.924 | 0.760 | 0.877 | 0.934 | 0.935 | 0.926 |
| (2) there is an access to the online store. | 3.78/1.97 | 0.933 | | 0.882 | | | 0.929 |
| (3) the employees are helpful in using the online store. | 3.80/1.75 | 0.868 | | 0.834 | | | 0.872 |
| Online-offline integration (acc. to Bendoly et al. 2005) | | | | | | | |
| If you purchase from [retailer] online store | | | | | | | |
| (1) you can pick up the product in the store. | 4.47/1.72 | 0.967 | 0.738 | 0.909 | 0.938 | 0.940 | 0.964 |
| (2) you can return the product to the store. | 4.61/1.70 | 0.940 | | 0.890 | | | 0.942 |
| (3) you can check the availability of products in the store. | 4.47/1.72 | 0.835 | | 0.815 | | | 0.840 |
| Channel consistency (acc. to Oh, Teo, and Sambamurthy 2012) | | | | | | | |
| Offline and online stores of [retailer] are aligned to each other. | 4.11/1.40 | 0.834 | 0.836 | 0.776 | 0.894 | 0.895 | 0.828 |
| Prices in offline and online stores are identical. | 4.23/1.43 | 0.887 | | 0.816 | | | 0.881 |
| Assortments in online and offline stores are identical. | 4.46/1.35 | 0.823 | | 0.766 | | | 0.829 |
| Service or product descriptions of [...] are consistent in both the offline and online stores. | 4.16/1.29 | 0.749 | | 0.705 | | | 0.760 |
| Second-order MI | | | | | | | |
| Traditional MI | | | | | | | |
| Assortment | | 0.910 | 0.676 | 0.789 | 0.786 | 0.889 | 0.916 |
| Price | | 0.643 | | 0.501 | | | 0.690 |
| Layout | | 0.755 | | 0.614 | | | 0.828 |
| Communication | | 0.799 | | 0.716 | | | 0.830 |
| Online-specific MI | | | | | | | |
| Website aesthetic | | 0.727 | 0.766 | 0.626 | 0.779 | 0.830 | 0.766 |
| Website navigation | | 0.844 | | 0.690 | | | 0.817 |
| Website service/content | | 0.725 | | 0.605 | | | 0.749 |
| Security/privacy ^a | | 0.514 | | 0.466 | | | 0.463 |
| Cross-channel MI | | | | | | | |
| Offline-online integration | | 0.843 | 0.592 | 0.681 | 0.739 | 0.855 | 0.872 |
| Online-offline integration | | 0.873 | | 0.699 | | | 0.857 |
| Channel consistency | | 0.696 | | 0.464 | | | 0.671 |
| Time point two | | | | | | | |
| RBE (acc. to Keller 1993, 2010; Verhoef, Langerak, and Donkers 2007) | | | | | | | |
| Offline RBE | | | | | | | |
| [Retailer's offline store] represents a strong brand. | 4.17/1.44 | 0.932 | 0.833 | 0.891 | 0.940 | 0.928 | 0.935 |
| [...] represents a well-known brand. | 4.15/1.45 | 0.949 | | 0.903 | | | 0.946 |
| [...] represents an attractive brand. | 4.20/1.46 | 0.910 | | 0.874 | | | 0.819 |
| [...] represents a unique brand. | 3.62/1.46 | 0.784 | | 0.765 | | | 0.784 |
| Online RBE | | | | | | | |
| [Retailer's online store] represents a strong brand. | 3.87/1.73 | 0.919 | 0.792 | 0.869 | 0.930 | 0.941 | 0.936 |
| [...] represents a well-known brand. | 4.03/1.67 | 0.922 | | 0.873 | | | 0.961 |
| [...] represents an attractive brand. | 4.32/1.64 | 0.847 | | 0.814 | | | 0.897 |
| [...] represents a unique brand. | 3.58/1.66 | 0.819 | | 0.790 | | | 0.771 |

(Continues)

TABLE 3 | (Continued)

| Construct | MV/std | FL | KMO | ItTC | α | CR | λ |
|--|-----------|-------|-------|-------|----------|-------|-----------|
| Time point three | | | | | | | |
| Loyalty (acc. to Oliver 1999; Sirohi, McLaughlin, and Wittink 1998; Swoboda and Winters 2021) | | | | | | | |
| I would recommend [retailer] to friends and others. | 3.88/1.69 | 0.903 | 0.681 | 0.797 | 0.852 | 0.865 | 0.889 |
| I am certain that I will shop at [...] again. | 3.59/1.98 | 0.903 | | 0.788 | | | 0.906 |
| In the future, I will purchase more at [...] than at any other firm. | 3.97/1.60 | 0.640 | | 0.606 | | | 0.664 |

Model fit: $N = 379$, CFI = 0.931, TLI = 0.925, RMSEA = 0.053, SRMR = 0.063, $\chi^2(901) = 1844.131$, SCF = 1.1338.

Note: MV/std. = mean values/standard deviations, KMO = Kaiser-Meyer-Olkin Criterion (≥ 0.5), FL = factor loadings, ItTC = item-to-total correlation (≥ 0.3), α = Cronbach's alpha (≥ 0.7); λ = standardized factor loadings (≥ 0.5).

^aEliminated because of low FL, KMO or ItTC.

(see the variance in Table 3; Finn and Wang 2014). All MIs can be second-order modeled because first-order factors tend to define the properties of higher-order factors. We measure each MI separately as second-order constructs because they differ in influence and cognitive representation (Lazaris et al. 2021). Through this operationalization of MIs, we can summarize the perceived information attributes of the specific channels and use them as salient information attributes in the sense of categorization theory.

The second-order construct of traditional MIs is composed of four traditional marketing elements in retail, namely, assortment, price, layout, and communication, and each is measured via three items (Chowdhury, Reardon, and Srivastava 1998; Kelly and Stephenson 1967; Swoboda, Weindel, and Hälsig 2016). The second-order construct of online-specific MIs includes website aesthetics, website navigation, website service/content, and website security/privacy as important online instruments. Each of them is measured with three or two items (Bressolles, Durrieu, and Deans 2015; Kwon and Lennon 2009a, 2009b; Montoya-Weiss, Voss, and Grewal 2003). Channel integration, online-offline, and consistency represent the construct of cross-channel MIs (measured with three or four items; Bendoly et al. 2005; Oh, Teo, and Sambamurthy 2012).

To measure offline and online RBE, we refer twice to the established four items captured at time t_2 (Keller 1993, 2010; Verhoef, Langerak, and Donkers 2007). Three items are used as a measure of loyalty at time t_3 (Oliver 1999; Sirohi, McLaughlin, and Wittink 1998; Swoboda and Winters 2021).

We measure covariates in the screening phase (t_0). Loyalty may be affected by age or sex (1/0 = female/male) and by internet expertise ("I use the internet all the time"; Montoya-Weiss, Voss, and Grewal 2003).

All first- and second-order constructs meet the established reliability and validity criteria and satisfy convergence and discriminant validity (see Tables 3 and 4). All model fit values are good.

3.1.3 | Method

To reduce the risk of common method variance (CMV), we use data at three time points, single-factor tests (see Supporting Information: Appendix C for all tests), and marker variables

(Williams and McGonagle 2016, using a self-efficacy measure at t_0 ; Hamaker 2023, which is theoretically unrelated to our constructs and equally susceptible to similar causes of CMV; Miller and Simmering 2023). There are nonsignificant changes in correlations/coefficients (method variance < 17.70%); the risk of CMV is reduced.

We test endogeneity via instrumental variables (IVs) measured at t_0 (Bastardoz et al. 2023). General and online familiarity with a retailer are known antecedents of traditional and online-specific MIs, and each is measured via two items (general = "I have lots of experience with the [retailer], and I am very familiar with [...]"; online = "I am very experienced with the online store of [...], and I shop often at the online store of [...]"; Chen and Dibb 2010). Transactional convenience is an antecedent of cross-channel MIs and is measured at t_0 via two items ("It is easy to make a purchase at [...]" and "It is easy to pay at [...]"; Kwon and Lennon 2009a). The consistent and efficient models do not differ significantly (Hair et al. 2018, 93; z values < 1.96); the probable bias due to omitted variables is reduced.

Measurement invariance is tested between time points (Van de Schoot, Lugtig, and Hox 2012). We ensure full metric invariance and a good fit ($\Delta\chi^2(89.076) = 0.076$, $p > 0.05$).

We use sequential mediation modeling in Mplus 8.8, which is suitable for sequential mediation and cross-lagged structural equation modeling (SEM) and offers flexibility and the respective model fit values (Muthén 2024; equivalent to other software that is less often used in consumer research, such as R or Stata). In addition, Mplus offers more reliable latent variable modeling (unlike Stata; less specialized) and a robust method for handling missing data (unlike R), such as those that may arise in consumer surveys (Chang et al. 2020). All goodness-of-fit values, such as comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and SCF values, are satisfactory (see Table 5).

3.1.4 | Results

We discuss the results considering the standardized coefficients. All MIs do not directly affect loyalty, supporting indirect-only mediation (see Table 5).

TABLE 4 | Discriminant validity.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| First order | | | | | | | | | | | | | | |
| 1 Assortment (1) | 0.708 | | | | | | | | | | | | | |
| 2 Preis (1) | 0.118 | 0.688 | | | | | | | | | | | | |
| 3 Layout (1) | 0.564 | 0.101 | 0.872 | | | | | | | | | | | |
| 4 Communication | 0.551 | 0.099 | 0.469 | 0.773 | | | | | | | | | | |
| 5 Website aesthetic (1) | 0.176 | 0.120 | 0.150 | 0.147 | 0.868 | | | | | | | | | |
| 6 Website navigation (1) | 0.235 | 0.161 | 0.200 | 0.195 | 0.393 | 0.756 | | | | | | | | |
| 7 Website service/content (1) | 0.193 | 0.132 | 0.164 | 0.160 | 0.323 | 0.430 | 0.734 | | | | | | | |
| 8 Security/privacy (1) | 0.210 | 0.103 | 0.178 | 0.174 | 0.148 | 0.198 | 0.162 | 0.896 | | | | | | |
| 9 Offline–online integration (1) | 0.195 | 0.073 | 0.166 | 0.162 | 0.152 | 0.203 | 0.166 | 0.081 | 0.827 | | | | | |
| 10 Online–offline integration (1) | 0.180 | 0.068 | 0.153 | 0.150 | 0.140 | 0.187 | 0.153 | 0.074 | 0.558 | 0.840 | | | | |
| 11 Channel consistency (1) | 0.272 | 0.052 | 0.232 | 0.227 | 0.139 | 0.186 | 0.152 | 0.088 | 0.114 | 0.104 | 0.682 | | | |
| 12 Online RBE (2) | 0.334 | 0.035 | 0.285 | 0.278 | 0.150 | 0.200 | 0.164 | 0.116 | 0.129 | 0.119 | 0.133 | 0.800 | | |
| 13 Offline RBE (2) | 0.441 | 0.024 | 0.376 | 0.367 | 0.100 | 0.135 | 0.110 | 0.080 | 0.172 | 0.158 | 0.194 | 0.460 | 0.764 | |
| 14 Loyalty (3) | 0.352 | 0.054 | 0.299 | 0.292 | 0.088 | 0.118 | 0.096 | 0.120 | 0.162 | 0.150 | 0.186 | 0.316 | 0.389 | 0.684 |
| Second order | | | | | | | | | | | | | | |
| 1 Traditional MI (1) | 0.728 | | | | | | | | | | | | | |
| 2 Online-specific MI (1) | 0.398 | 0.620 | | | | | | | | | | | | |
| 3 Cross-channel MI (1) | 0.308 | 0.360 | 0.748 | | | | | | | | | | | |
| 4 Online RBE (2) | 0.412 | 0.276 | 0.166 | 0.800 | | | | | | | | | | |
| 5 Offline RBE (2) | 0.542 | 0.186 | 0.221 | 0.460 | 0.764 | | | | | | | | | |
| 6 Loyalty (3) | 0.432 | 0.162 | 0.209 | 0.316 | 0.389 | 0.684 | | | | | | | | |

Note: AVE = average variance extracted (≥ 0.5 , Fornell/Larcker), (1–3) = time points, italics = squared correlations; bold = AVE of constructs.

TABLE 5 | Results (sequential mediation model).

| | | <i>b</i> | β <i>p</i> | Differences (<i>t</i> -values) |
|------------------------|-------------------------------|----------|------------------|-----------------------------------|
| Direct effects | | | | |
| Traditional MI (1) | →Offline RBE (2) | 0.852 | 0.598*** | |
| Traditional MI (1) | →Online RBE (2) | 0.452 | 0.383*** | |
| Online-specific MI (1) | →Offline RBE (2) | −0.138 | −0.087ns | |
| Online-specific MI (1) | →Online RBE (2) | 0.259 | 0.197* | |
| Cross-channel MI (1) | →Offline RBE (2) | 0.292 | 0.273*** | |
| Cross-channel MI (1) | →Online RBE (2) | 0.157 | 0.177** | |
| Traditional MI (1) | →Loyalty (3) | 0.173 | 0.109ns | |
| Online-specific MI (1) | →Loyalty (3) | −0.053 | −0.030ns | |
| Cross-channel MI (1) | →Loyalty (3) | 0.085 | 0.071ns | |
| Offline RBE (2) | →Loyalty (3) | 0.424 | 0.377*** | 1.274ns |
| Online RBE (2) | →Loyalty (3) | 0.418 | 0.318*** | |
| Indirect effects | | | | |
| Traditional MI (1) | →Offline RBE (2) →Loyalty (3) | 0.356 | 0.225*** | 2.425* |
| Traditional MI (1) | →Online RBE (2) →Loyalty (3) | 0.192 | 0.122*** | |
| Online-specific MI (1) | →Offline RBE (2) →Loyalty (3) | −0.057 | −0.033ns | 12.498** |
| Online-specific MI (1) | →Online RBE (2) →Loyalty (3) | 0.110 | 0.063* | |
| Cross-channel MI (1) | →Offline RBE (2) →Loyalty (3) | 0.122 | 0.103** | 1.595ns |
| Cross-channel MI (1) | →Online RBE (2) →Loyalty (3) | 0.067 | 0.056* | |
| Total indirect effects | | | | |
| Traditional MI (1) | →Loyalty (3) | 0.547 | 0.347*** | $t_{\text{TMI-OSMI}} = 6.667***$ |
| Online-specific MI (1) | →Loyalty (3) | 0.052 | 0.030ns | $t_{\text{OSMI-CCMI}} = 6.325***$ |
| Cross-channel MI (1) | →Loyalty (3) | 0.189 | 0.159** | $t_{\text{TMI-CCMI}} = 4.377***$ |
| Total effects | | | | |
| Traditional MI (1) | →Loyalty (3) | 0.720 | 0.456*** | $t_{\text{TMI-OSMI}} = 14.063***$ |
| Online-specific MI (1) | →Loyalty (3) | −0.001 | −0.001ns | $t_{\text{OSMI-CCMI}} = 4.502***$ |
| Cross-channel MI (1) | →Loyalty (3) | 0.274 | 0.231*** | $t_{\text{TMI-CCMI}} = 5.625***$ |
| Covariates | | | | |
| Age (1) | →Loyalty (3) | −0.008 | −0.062ns | |
| Gender (1) | →Loyalty (3) | 0.120 | 0.033ns | |
| Internet expertise (1) | →Loyalty (3) | −0.111 | −0.097ns | |

Model fit: CFI = 0.953, TLI = 0.947, RMSEA = 0.047, SRMR = 0.065, $\chi^2(624) = 1156.323$, SCF = 1.1039.

Note: (1–3) = time points, *b*/ β = unstandardized/standardized coefficients, ns = not significant.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

The results support H1a/b. Traditional MIs positively affect loyalty, which is mediated by offline and online RBE ($\beta = 0.225$, $p < 0.001$, $\beta = 0.122$, $p < 0.001$). In support of H1c, *t*-tests reveal a significantly stronger path of traditional MIs via offline (vs. online) RBE ($t = 2.425$, $p < 0.05$). We discuss all the results later.

Online-specific MIs are nonsignificant for loyalty through offline RBE but are significant through online RBE ($\beta = -0.033$,

$p > 0.10$, $\beta = 0.063$, $p < 0.05$). Thus, H2a is rejected, whereas H2b is supported. In support of H2c, online-specific MIs affect loyalty more strongly through online (vs. offline) RBE ($t = 12.498$, $p < 0.001$).

The paths of cross-channel MIs to loyalty are positive for offline and online RBE ($\beta = 0.103$, $p < 0.01$, $\beta = 0.056$, $p < 0.05$); thus, H3a/b are supported. However, the path via offline (vs. offline)

RBE is stronger only in terms tendency ($t=1.596$, $p>0.10$). We reject H3c.

The total effects on the loyalty of traditional MIs ($\beta=0.720$, $p<0.001$) and cross-channel MIs ($\beta=0.274$, $p<0.001$) are significant, but those of online-specific MIs are not ($\beta=-0.001$, $p>0.10$). In support of H4a and H4b, traditional MIs have the strongest effect ($t_{\text{TMI-OSMI}}=14.063$, $p<0.001$; $t_{\text{TMI-CCMI}}=5.625$, $p<0.001$). In support of H4c, cross-channel MIs are stronger than are online-specific MIs ($t_{\text{OSMI-CCMI}}=4.502$, $p<0.001$).

The covariates of gender, age, and internet expertise are nonsignificant.

3.1.5 | Stability Checks

Stability checks are performed. A random split half sample underlines the results, which notably remain almost unchanged for very small samples (see Supporting Information: Appendix D).

We also replace online and offline RBE with the overall RBE (measurement: [Retailer] represents a well-known, strong, attractive, and unique brand; Keller 1993, 2010; Verhoef, Langerak, and Donkers 2007). The paths of two independent variables are stable, that of online-specific MI is nonsignificant, and t -tests reveal stronger paths of traditional (vs. other) MIs. However, the observed effect of online MIs through online RBE is invisible; thus, important variables are omitted, which we discuss later.

We replace loyalty with repurchase intention (measurement: “I intend to continue buying from [retailer]; in the future, I will be more likely to buy from [...]; and it is very likely that I will buy from [...] again,” Lee et al. 2019). Our results are underlined by the alternative results of all MIs through both RBEs, and traditional MIs, followed by cross-channel MIs, also have the strongest total effect.

We remove certain MIs. The paths without traditional MIs underline the results of online-specific and cross-channel MIs through offline and online RBE. Omitting online-specific MIs reveals logical insights, as does omitting cross-channel MIs. The total effects are also stable, supporting our results.

3.2 | Study 2 (Cross-Lagged Design)

3.2.1 | Sample, Measurement, and Method

We address the reciprocal relationship and the total effects of offline and online RBE on loyalty. Reciprocity cannot be tested in the sequential mediation study but we use the same sample. However, we measure RBE and loyalty at three time points (t_1 – t_3) and perform cross-lagged SEM with Mplus 8.8, which assumes that X_t can be predicted by X_{t-1} or that X_t can be cross-lagged and influenced by Y_{t-1} , for example (e.g., Zypur et al. 2020).

The requirements for validity and reliability are assured for all time points (see Supporting Information: Appendix E for all tests).

Possible CMV risks are satisfactorily addressed via single-factor tests and the marker variable technique. Endogeneity is tested satisfactorily via two one-item measures (screening phase, t_0) for offline or online brand likeliness as IVs; both are theoretically possible predictors for offline and online RBE (e.g., Keller 2010). Measurement invariance is tested between all time points (partial metric invariance is identified, $\Delta^2(473)=1857.262$, $p<0.001$).

3.2.2 | Results

The results support H5a by revealing the reciprocal relationships between offline and online RBE ($\beta_{1-2}=0.198$, $p<0.001$, $\beta_{2-3}=0.200$, $p<0.001$), and vice versa ($\beta_{1-2}=0.244$, $p<0.001$, $\beta_{2-3}=0.215$, $p<0.001$; see Table 6). Offline RBE has a total positive effect on loyalty ($\beta=0.273$, $p<0.001$), as does online RBE ($\beta=0.136$, $p<0.001$). The total effect of offline (vs. online) RBE is stronger ($t=4.169$, $p<0.001$); thus, H5b is confirmed. Our covariates are nonsignificant.

3.2.3 | Stability Checks

Stability tests confirm our observations. A random split half sample shows almost stable results, notably for very small samples (see Supporting Information: Appendix F). We replace the dependent variable loyalty with repurchase intention (measured with three items). The reciprocal links between both RBEs are stable, and the reciprocal effects are confirmed, with those of offline (vs. online) RBE being stronger.

4 | Discussion

This study contributes to our understanding of the roles of traditional, online-specific, and cross-channel MIs for multi- and omnichannel retailers' positioning of strong offline and online brands and for consumer loyalty (e.g., referring to research calls; Blut, Teller, and Floh 2018). Additionally, reciprocally analyzed RBEs provide further insights into these roles. We focus reasonably on fashion retail, but our insights may be of interest to other sectors with currently lower online sales. For example, scholars show that MIs are generally important in different sectors, albeit to different degrees (e.g., Swoboda, Weindel, and Hälsig 2016), and that trend-oriented fashion firms can play a certain benchmarking role (e.g., Loureiro, Cavallero, and Miranda 2018). We next carefully provide theoretical and managerial implications.

4.1 | Theoretical Implications

We extend the application of categorization theory and observe that consumers differently match MIs with offline and online RBE and draw inferences in loyalty decisions. This work generally extends previous studies that have mostly analyzed traditional, followed by online-specific and cross-channel, MIs as drivers of the overall RBE (less frequently considering online and offline RBE), and have seldom combined MIs, considering their relative importance, or addressed multi- and omnichannel firms (only in Kwon and Lennon 2009a; White, Joseph-Mathews, and Voorhees 2013).

TABLE 6 | Results (cross-lagged model).

| | | <i>b</i> | <i>β p</i> | Differences (<i>t</i> -values) |
|-----------------------------------|------------------|----------|------------|---------------------------------|
| Direct effects | | | | |
| Offline RBE (1) | →Online RBE (2) | 0.138 | 0.198*** | 3.833*** |
| Online RBE (1) | →Offline RBE (2) | 0.195 | 0.244*** | |
| Offline RBE (1) | →Loyalty (2) | 0.190 | 0.239*** | 4.537*** |
| Online RBE (1) | →Loyalty (2) | 0.065 | 0.085* | |
| Offline RBE (1) | →Offline RBE (2) | 0.539 | 0.647*** | |
| Online RBE (1) | →Online RBE (2) | 0.428 | 0.645*** | |
| Loyalty (1) | →Loyalty (2) | 0.450 | 0.523*** | |
| Offline RBE (2) | →Online RBE (3) | 0.138 | 0.199*** | |
| Online RBE (2) | →Offline RBE (3) | 0.195 | 0.215*** | 4.137*** |
| Offline RBE (2) | →Loyalty (3) | 0.190 | 0.219*** | |
| Online RBE (2) | →Loyalty (3) | 0.065 | 0.062* | |
| Offline RBE (2) | →Offline RBE (3) | 0.539 | 0.664*** | |
| Online RBE (2) | →Online RBE (3) | 0.428 | 0.558*** | |
| Loyalty (2) | →Loyalty (3) | 0.450 | 0.495*** | |
| <i>R</i> ² Loyalty (3) | | — | 0.571*** | |
| Total effects | | | | |
| Offline RBE (1) | →Loyalty (3) | 0.197 | 0.273*** | 4.169*** |
| Online RBE (1) | →Loyalty (3) | 0.094 | 0.136*** | |
| Covariates | | | | |
| Age (1) | →Loyalty (1) | −0.005 | −0.029** | |
| Age (2) | →Loyalty (2) | −0.005 | −0.033** | |
| Age (3) | →Loyalty (3) | −0.005 | −0.037** | |
| Gender (1) | →Loyalty (1) | 0.039 | 0.089** | |
| Gender (2) | →Loyalty (2) | 0.039 | 0.104** | |
| Gender (3) | →Loyalty (3) | 0.039 | 0.114** | |
| Internet expertise (1) | →Loyalty (1) | 0.022 | 0.014ns | |
| Internet expertise (2) | →Loyalty (2) | 0.022 | 0.015ns | |
| Internet expertise (3) | →Loyalty (3) | 0.022 | 0.016ns | |

Model fit: CFI=0.841, TLI=0.832, RMSE=0.092, SRMR=0.074, $\chi^2(778)=3300.523$, SCF=0.9013.

Note: RBE=retail brand equity, (1–3)=time points, *b*/*β*=unstandardized/standardized coefficients, ns=not significant.

**p*<0.05.

***p*<0.01.

****p*<0.001.

We support studies showing the effects of traditional MIs (e.g., on overall or offline RBE; Das 2015; Swoboda, Weindel, and Hälsig 2016), contradict studies showing negative effects (e.g., on overall RBE; Datta, Ailawadi, and Van Heerde 2017) and extend both streams by simultaneously addressing further MIs and offline and online RBE. We also support studies analyzing the effects of online-specific MIs only (e.g., on online brands; Toufaily and Pons 2017) or cross-channel MIs (e.g., on overall brand image; Schramm-Klein et al. 2011), contradict those with partly nonsignificant effects of online-specific

MIs (e.g., on overall brand image; Al-Hawari 2011) and extend both streams in the above described manner. We identify at least two more finer-grained theoretical implications.

First, the relative importance of MIs in multi- and omnichannel retail offers novel theoretical rationales and insights. Traditional MIs match both subcategories, but owing to higher degrees of familiarity, for example, inferences are drawn stronger to offline (vs. online) RBE, which is perhaps to be expected but shows the strongest path to loyalty today.

In contrast, consumers match online-specific MIs to online (not offline) RBE, which may not be surprising (Frasquet and Miquel 2017). However, this further enhances the only study on offline and online brands (Kwon and Lennon 2009a), as we observe nonnegative online-specific MIs-offline RBE links and, surprisingly, stronger paths of traditional (vs. other) MIs through online RBE. Notably, this finding is visible in our indirect effect models but not in our total effect models or in those of the overall RBE only and is even complemented by the reciprocity discussed later. We thus may also contribute methodologically to the literature. Finally, we believe that we contribute to the research on cross-channel MIs in two ways. While this research stream has studied only overall RBE (Frasquet and Miquel 2017), we show that consumers draw equal inferences through offline and online RBE in loyalty decisions. For the first time, we compare the effects of cross-channel and other MIs and show their stronger (weaker) role than that of online-specific (traditional) MIs. All this may be considered in studies that focus only on cross-channel MIs or only online-specific MIs.

Second, the empirical insights into the total effects of MIs, that is, their general importance, are novel and support our theoretical rationale. Traditional MIs are currently the strongest loyalty lever and are twice as strong as cross-channel MIs. This finding refutes assumptions regarding their possible decreasing importance in modern retail (e.g., Wichmann et al. 2022); they may have gained rather than lost through digitalization (e.g., Timoumi, Gangwar, and Mantrala 2022). When drawing inferences through RBEs, consumers value traditional MIs as the most important information attributes in both sales channels. Cross-channel MIs follow, and synergies between sales channels enable a match to both RBEs (e.g., Gao and Huang 2021). As mentioned, online-specific MIs are nonsignificant in contrast to their shown importance via online RBE. Additionally, our stability test of the overall RBE has further implications. Consumers access one subcategory and draw the respective inferences, which omit the effects and interactions of both RBEs. However, both RBEs may shape consumers' overall RBE or image, which future research may address because we cannot test and thus hypothesize that this due to both RBEs' multicollinearity with overall RBE (Hair et al. 2018; S.323; Shrestha 2020).

Regarding our third research question, the identified reciprocity between offline and online RBE has important implications for their effects on loyalty and the pathways of MIs to loyalty.

First, the results are consistent with our theoretical rationale that online and offline RBE reciprocally affect consumer loyalty, whereas offline RBE does so more strongly. Consumers categorize channel-specific brand associations into a retailer category and draw inferences reciprocally between them in both directions (e.g., Badrinarayanan et al. 2012). Consumers rely on the most knowledgeable and activated subcategory for loyalty decisions (e.g., Sohn 2017). We contribute to the literature by revealing the links between offline and online RBE, answering the related calls for research, and supporting a few reciprocal studies. Swoboda and Winters (2021) have already shown under- or overestimated online or offline image effects when cross-sectional studies test them nonreciprocally (in our study, for example, for online RBE, the result is weaker unidirectionally,

$\beta_{1-2}=0.085$ or $\beta_{2-3}=0.062$, $p<0.05$, and stronger reciprocally, $\beta=0.136$, $p<0.001$; see Table 6). We also initially show that in today's multi- and omnichannel retailing, offline RBE is pre-dominant compared to online RBE.

Second, the reciprocal insights provide novel research conclusions for the pathways of MIs' impact on loyalty through the RBEs (which cannot be simultaneously tested in one model). A reciprocal online-offline RBE link with a stronger tendency than vice versa emerges (online-offline $\beta_{1-2}=0.244$, $\beta_{2-3}=0.215$, $p<0.001$; offline-online $\beta_{1-2}=0.198$, $\beta_{2-3}=0.199$, $p<0.001$; see Table 6). Consumers transfer more category knowledge from online to offline RBE, which we underscore for reciprocally linked RBEs (e.g., Swoboda and Winters 2021). This observation does not change the dominant role of traditional MIs, but their path through online (vs. offline) RBE gains importance, as it is the strongest path through online RBE; for cross-channel MIs, the path through online RBE is also reinforced. The greatest implications appear for online-specific MIs. Their only significant indirect effect through online RBE is amplified by their respective activations in consumer memory (e.g., Puligadda, Ross Jr, and Grewal 2012); they are strongly matched to online RBE because of their representativeness but have a further influence due to the strong online-offline RBE link (e.g., Toufaily and Pons 2017). This is novel in the literature. Studying the crosswise effects and reciprocity of possible mediators is recommended for online-specific and further MIs in research on multi- and omnichannel firms to fully understand all relationships.

4.2 | Managerial Implications

Carefully managed major MIs help retailers retain loyal consumers and find it challenging to do so through major sales channels (e.g., Hult et al. 2019; Kwon and Lennon 2009a). Neglecting important MIs and offline and online RBE may lead to the misinterpretation of market studies, incomplete conclusions, or ineffective strategies for overall RBE (Swaminathan et al. 2020). We believe that the results are relevant for former brick-and-mortar and pure online players that start opening offline stores (e.g., Ratchford et al. 2022). A double strong effect of traditional MIs relative to the following cross-sectional MIs through both RBEs indicates retailers' strongest levers from consumers' viewpoint. Currently, multi- and omnichannel retailers can, in particular, leverage benefits through offline (vs. online) RBE when competing with online pure players, for example. However, they may face challenges in the future online world because of the demonstrated weaker roles of online-specific MIs and online RBE (Hänninen, Kwan, and Mitronen 2021). The careful management of consumer-based evaluations of the studied MIs (and of additional MIs and touchpoints) and their roles in offline and online brand positioning is recommended, as this approach seems to be superior to the view of a harmonized brand position across sales channels (due to different environments, competitors, or evaluations; Keller 2020; Zhang, Vorhies, and Zhou 2023). However, many retailers must, for example, also overcome frequent silos of consumer information or processes in independently operating online and offline divisions (Swoboda and Winters 2021).

Further implications arise from reciprocal effects. The double strong reciprocal effect of offline (vs. online) RBE on loyalty underscores the role of offline brand positioning today (like banking; Cambra-Fierro et al. 2020). Thus, traditional MIs remain the strongest lever, but the totally nonsignificant online-specific MIs gain importance owing to their role in online RBE (indirect effects) and the respective strong reciprocity of online to offline RBE. This, however, limits the results of unidirectional studies, which managers should evaluate carefully as a basis for their decisions. Cross-channel MIs such as offline–online or online–offline integration or further unstudied touchpoints need to be orchestrated to steer consumers to channels, manage brand positioning, and control reciprocal RBE mechanisms for the targeted consumer outcome (Frasquet and Miquel 2017; Lee et al. 2019). Managing complementary offline and online RBE and capturing synergies help build a source of competitive advantage.

5 | Limitations and Directions for Future Research

This study has certain limitations that suggest future research directions.

We collect specific data over time, but a broader database would allow further implications, for example, for smaller firms, former pure online players, other industries, or occasional shoppers (e.g., Khan and Rahman 2016; Troiville, Hair, and Cliquet 2019). We select leading firms for which categorization and reciprocity can be analyzed, as the use of fictional firms increases internal validity (e.g., Lee et al. 2019).

With respect to our measurements, using objective data for loyalty are obvious but difficult to obtain over three time points. We provide strong rationales for our second-order MI measures, but there is no single correct compositional approach (e.g., Koufteros, Babbar, and Kaighobadi 2009). The same applies to measuring MIs, as validated options do not yet exist, but finer-grained approaches to further MIs such as social media or offline-specific MIs are interesting (Swaminathan et al. 2020). Furthermore, less common measurements of RBE also exist (e.g., Keller 2016; Zhang, Vorhies, and Zhou 2023). Finally, studies may control for consumers' incomes, channel preferences, and other potentially relevant covariates.

Our framework is developed using cognitive rationales that fit an ex post study, but it would be interesting to propose alternative hypotheses (e.g., feelings and pleasure; Lee et al. 2019). We leverage categorization theory to stimulate further research. Future studies could benefit by measuring categorization theory mechanisms, for example, studying how consumers categorize MIs from different channels, or by using alternative theories to reveal the mechanisms underlying the studied relationships (e.g., Rajavi, Kushwaha, and Steenkamp 2019). We select experienced respondents who tend to perceive more MIs; however, testing experience, shopping motivation and search behavior as antecedents (or moderators) of offline and online RBE (effects) would be interesting (e.g., Rajavi, Kushwaha, and Steenkamp 2019; Troiville, Hair, and Cliquet 2019; Wang and Jia 2023). Similarly, studying further consumer groups or

the roles of real-time personalization, social media, or artificial intelligence for RBE could be exciting research avenues (e.g., Swaminathan et al. 2020; Wichmann et al. 2022).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Research data are not shared.

Endnotes

¹ We perform a systematic literature review of 27 leading journals (following Harzing's journal quality list) by referring to papers published since 2009 and those identified through cross-citations. Our keywords are MIs, mix, or individual MIs, such as price, service/content, website, channel integration, RBE, experience, and image. For our [Supporting Information](#): Appendix, click [here](#).

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.