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Julia Katharina Weindel

Retail Brand Equity and Loyalty

Analysis in the Context of Sector-Specific Antecedents, Perceived Value, and Multichannel Retailing

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With a Foreword by Professor Dr. Prof. h.c. Bernhard Swoboda

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Foreword

Besides traditional and often discussed brand equity models the view of 'retailers as brands' is gaining importance. Several years ago, retail researchers started to focus on the topic of retail branding. Retail branding has become a top marketing research priority because a company's brand is an important intangible asset for retailers. However, retailers use their brand not only to distinguish themselves from their competitors in the consumers' minds. They also use it as an informational cue for the value they perceive or for brand extensions into new online channels. However consumers perceive such brand positions and extensions in a specific manner. Thus, a detailed knowledge on how to create strong retail brands in different retail sectors, on how a retail brand interacts with the perceived utilitarian or hedonic value, or on how the relationships of retailers' offline and online channels interact when affecting customer behavior, for example, is of paramount importance for retailers that aim to build strong retail brands. The objective of Julia Weindel's thesis is to gain a deeper knowledge of retail brands as predictors of loyalty in important retail contexts in order to develop implications for retailers. Addressing these issues Julia Weindel's dissertation consists of three studies:

- *Sector-specific Antecedences of Retail Brand Equity:* This study examines the different predictors of retail brand equity and its effects on customers' loyalty by comparing the four most important retail sectors. Based on a multi-group analysis the findings suggest that retail brand equity is differently affected by the various perceived retail attributes in each of the four observed retail sectors, whereas retail brand equity equally affects consumers' loyalty in all retail sectors. Thus, retailers should pay attention to the core levers of a retail brand in their particular sector.
- *Reciprocity between Perceived Value and Retail Brand Equity:* The reciprocal effects of perceived value (i.e., hedonic and utilitarian value) and consumer-based retail brand equity on consumers' loyalty are addressed in this study. Based on longitudinal surveys in the two most important retail sectors, grocery and fashion retailing, the findings suggest that retail brand equity interacts with perceived value and vice versa and – more importantly – drives loyalty more strongly than perceived value. However, different value effects and dif-

ferent reciprocal effects occur in grocery retailing and in fashion retailing.

- *Interdependencies within Multichannel Retail Structures:* Various crosswise and reciprocal relationships are possible in multichannel retailers' structures. This study addresses the crosswise relationships between offline and online brand beliefs and retail brand equity as well as the reciprocal relationships between offline and online retail brand equity. Based on two longitudinal surveys and extensive pretests – and by differentiating between strong vs. weak offline and online retail brands – insightful results in fashion and grocery retailing are presented. For example, former weak brick-and-mortar retailers that aim to establish new online channels have considerable disadvantages when aiming to bond consumers to their retail brand in both channels.

With her work Dr. Julia Weindel makes a significant contribution to retailing research. She significantly disentangles the interrelation of offline and online retail brand perceptions as well as of retail brand equity and perceived value concerning the reciprocal effects on consumers' loyalty to the retail firm. Her work impresses on the one hand with the extent of attention paid to the conceptualization but also with the combination of different types of studies and in particular methodologically. I'm in particular very happy with her work, as Dr. Julia Weindel presents the thirteenth dissertation at my chair for Marketing & Retailing at the University of Trier. She was additionally involved in two book projects and has organized the whole IT-infrastructure during her four years at my chair. I therefore thank Dr. Julia Weindel for these four years in which she was working as a research assistant at my chair. I got to know her as a very honourable and very open minded person and I wish her very warmly all the best for her career as well as for her private life in the future.

Professor Dr. Prof. h.c. Bernhard Swoboda

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This doctoral thesis has been developed during my time as a research assistant at the Chair for Marketing and Retailing at the University of Trier. After almost four years this journey has come to an end and I am able to present this piece of work. Without many people along these four yours this work would not have been possible and I would like to express my thankfulness to them. Among them are my supervisor, my colleagues, and last but not least my dear family and friends.

First I would like to express my thanks to my supervisor Prof. Dr. Prof. h.c. Bernhard Swoboda, who gave me the opportunity to pursue my doctoral thesis in 2012. I acknowledge his support and many fruitful discussions that led to the improvement of my thesis. Besides, I would like to thank him for the possibilities he offered me to attend conferences to further improve my work. I had the opportunity to present my research at conferences of the most important international marketing associations in Brisbane (Australia), San Antonio (USA), Leuven (Belgium), and Chicago (USA). Furthermore I attended workshops and doctoral colloquiums in Siegen, Berlin, Fribourg (Suisse), and Trier. By attending these conferences and workshops I gained new insights and benefited from fruitful discussions with scholars and doctoral students from all around the globe.

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Furthermore I would like to thank my colleagues at the Chair for Marketing and Retailing of the University of Trier. I would like to thank my former colleagues Eileen Blanke, Dr. Edith Olejnik and Dr. Bettina Weimann who introduced me to work at the university and always had an open ear when I had questions about Mplus. A big thank you goes to my colleagues Johannes Hirschmann, Lukas Morbe, Cathrin Puchert, and Christoph Seibel for their support, for many hours of coffee sipping, for our “Cake-Mondays” and “Weinstand-Wednesdays”, for many many TBAs, and for the fun we had even when the times were stressful and office days quite long. Thank you very much for the long and fruitful discussions, your helpfulness, and all these unforgettable

memories we had and now share. I also like to thank our secretary Ursula Fassbender for her wide-ranged support throughout the years. Moreover I would like to thank Nadine Batton and Alisa Theis for their support.

Finally my biggest gratitude goes to my family and friends. Without their continuous support this journey would have been much harder. I always knew that I can count on all of you. In particular and first and foremost I would like to thank my parents for everything they have done for me and for their continuous support throughout all these years. You never hesitated to support me in all of my journeys, encouraged me to make my own decisions and thus made me to be the person that I am today. I am also very grateful for the support of my brother and sister as well as my dear friends. Thank you for being party of my life, for all the good times we had and sure will have. Last but not least I especially thank Esther for proof-reading parts of my thesis.

Julia Katharina Weindel

Content

Figures

Tables

Abbreviations

AES.....aesthetic appeal

ANOVA .....analysis of variance

AVE.....average variance extracted

ASS.....assortment

ATOF .....offline channel attractiveness

ATON.....online channel attractiveness

ATT .....attractiveness

BB .....brand beliefs

bn.....billion

c.....conceptual

CFA.....confirmatory factor analysis

CFI .....comparative fit index

CMV.....common method variance

COM .....communication

CR.....composite reliability

df.....degrees of freedom

DIY.....do-it-yourself

dm.....dm-drogerie markt

e.....empirical

e.g. .....exempli gratia/for example

et al. .....et alia/and others

EV .....emotional value

FL.....factor loadings (exploratory factor analysis)

H .....hypothesis

HDE .....Handelsverband Deutschland

H&M.....Hennes and Mauritz

i.e. .....id est/that is

IKEA.....Ingvar Kamprad Elmtaryd Agunnaryd

ItTC .....item-to-total-correlation

IV .....instrumental variable

KMO.....Kaiser-Meyer-Olkin criterion

LAY .....layout

LCA.....latent class analysis

LOY.....loyalty

m.....meta-analysis

M.....million

MANOVA .....multivariate analysis of variance

MG-SEM .....multi-group structural equation modelling

ML.....maximum likelihood estimator

MLM.....maximum likelihood mean adjusted estimator

MM.....marketing mix

MV .....mean value

M&S .....Marks and Spencer

N .....sample size

NAV .....navigation convenience

no.....number

ns .....not significant

OFF.....offline retail brand equity

OfP.....offline channel performance

OLS.....ordinary least squares

ON .....online retail brand equity

OnP.....online channel performance

p.....*p*-value

p.....page

PLS.....partial least squares

PRI.....price

PV.....price value

QV.....quality value

R^2.....R-square

RBE.....retail brand equity

RMSEA.....root mean square error of approximation

SCF.....scaling correction factor for MLM

SE.....standard error

SEL.....self-efficacy

SEM.....structural equation modelling

SER.....service

SFT.....single-factor test

SM.....shopping motives

SRMR.....standardized root mean square residual

Std.....standard deviation

SV.....social value

t.....t-value

TLI.....Tucker-Lewis index

TRA.....transaction convenience

TROF.....offline channel trust

TRON.....online channel trust

VAL.....perceived value

vs. .....versus

WCA .....weighting class adjustment

α.....Cronbach's alpha

b.....unstandardized coefficient

β.....standardized coefficient

λ.....standardized factor loadings (CFA)

μ.....expected value

χ^2.....chi-square

€.....EURO

%.....per cent

$.....U.S. dollar

24/7.....around-the-clock service

A. Introduction

1. Focus and Relevance

This doctoral thesis focuses on retail branding and especially emphasizes the need for retailers to create costumer-based retail brand equity[1]. Costumer-based retail brand equity is defined as the consumers' overall perception of the retailer as a strong, attractive, unique, and favorable brand (Ailawadi and Keller 2004; Keller 1993, 2003) and represents the differential effect of store knowledge on customer response to the marketing activities of the store (Hartman and Spiro 2005). As retailers such as Tesco or Zara are faced with an increasing competition within their marketplaces, the need for retail branding to attract and retain customers rises. This need is particularly important, because retail brand equity is known to strongly influence consumer behavior (e.g., Gil-Saura et al. 2013; Swoboda et al. 2014) which in turn is a key predictor of shopping frequency and consumer spending (Chiou and Droge 2006; Pan and Zinkhan 2006). In the last years retailers increasingly started to focus on retail branding and thus on creating retail brand equity, following the long-time practice of manufacturer firms (e.g., Berg 2013; Swoboda et al. 2013b). Brands constitute a firms' most valuable intangible asset for both manufacturer and retailing firms (e.g., Ailawadi and Keller 2004; Jinfeng and Zhilong 2009), because they represent an important differentiation criterion within competition (Ailawadi and Keller 2004; Ghodeswar 2008).

For retailers that aim to build retail brand equity it is essential to build brand awareness but furthermore also positive retail brand associations (Levy et al. 2014, p. 423-433). A strong retail brand conveys benefits for the consumer as well as for the retailer. The consumers' benefits embrace identification, simplification of decision making, risk reduction, and prestige. Whereas the benefits of the retailer mainly encompass positive sales and equity effects, differentiation, pricing options, and customer retention, in contrast (Burmann et al. 2012, p. 2-3; Morschett 2002, p. 26). Still, when retailers strategically position their retail brand, the perception of this positioning by the consumer is highly subjective, and thus of paramount importance for the retailer, when aiming to create customer-based retail brand equity. Thus, this doctoral thesis focusses on the costumer-based perceptions of retail brands such as for example H&M, Kingfisher, or Walmart and interrelated effects.

[1] This doctoral thesis uses the term retail brand equity that is sometimes also referred to as store equity, retailer equity, retailer brand equity, or retailer as a brand.

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Retail branding is highly relevant and does not depend on the retail sector(s) in that a retailer operates. This high relevance of branding becomes also visible when looking closely at the bi-annual report of best retail brands of Interbrand (see Table A-1). However, when comparing retailers' brand values to the brand values of Interbrand's Best Global Brands Report it becomes clear, that there is still a long way to go for retail brand managers, as Apple—the no. 1 in the global brand ranking—has a brand value of 170,276 $M, whereas Walmart—the global no. 1 of retail brands—has a brand value of 131,877 $M followed by Target with 27,123 $M (Interbrand 2015b). Thus there is still a huge gap between the brand value of manufacturer firms compared to the brand value of retail firms.

Rank	Germany	Europe	USA
1	Aldi	H&M	Walmart
2	Lidl	IKEA	Target
3	Edeka	ZARA	The Home Depot
4	Media Markt	Carrefour	amazon
5	Metro	Tesco	CVS/pharmacy
6	Kaufland	M&S	Walgreens
7	dm	Auchan	Sam's Club
8	Rewe	Boots	ebay
9	Fielmann	Aldi	Coach
10	Douglas	Sephora	Publix

Table A-1: Top retail brands 2014

Source: Interbrand Best German Brands (2015a); Interbrand Best Retail Brands (2015b).

Retailing research has already addressed retail branding in various contexts, however, a high need still exists to address retail branding further, as gaps still exist in the literature. In the extant literature, scholars have already addressed retail branding in various contexts. One stream of research focusses on private labels, their perceptions, different types and their effects on consumer behavior (e.g., Bao et al. 2011; Dennis et al. 2007; Geyskens et al. 2010; Glynn and Chen 2009; Herstein et al. 2013; Kremer and Viot 2012; Martenson 2007; Semeijn et al. 2004). Moreover, retailing research also deals with branding with regard to retail formats, especially referring to format competition, or format choice (e.g., Carpenter and Balija 2010; Cleeren et al. 2010; Solgaard and Hansen 2003; Swoboda et al. 2014) or with branding in an international context (e.g., Burt and Sparks 2002; Moore et al. 2000; Swoboda and Pennemann 2014; Swoboda et al. 2012).

Furthermore, research has addressed various factors that influence the consumers' perceptions of the retailer as a strong, unique, favorable, and attractive brand. Among these factors are mostly retail attributes (i.e., the marketing mix elements) such as assortment, price, service, communication, location, and others (e.g., Swoboda et al. 2013b; Swoboda et al. 2009). The extant lit-

erature has already examined the influences of retail attributes on retail image (e.g., Baker et al. 1994; Birtwistle et al. 1999; Zimmer and Golden 1988) but less on retail brand equity. In this vein, scholars have also focused on the analysis of effects in single retail sectors (however, mainly in grocery retailing) and are claiming generalizability for their results. However, it is questionable whether the results from single and selected retail contexts can easily be transferred to other retail sectors due to several reasons. First, because consumer behavior is known to vary in different retail sectors (e.g., Pan and Zinkhan 2006; Schenk et al. 2007). Second, because the German retail landscape is very fragmented with grocery retailing holding up to 48% of market shares, followed by fashion retailing, consumer electronics retailing, and DIY retailing with a market share of 8-11% each out of the total German retail market volume of approximately 498 bn € (see Figure A—1). Third, the retailer concentration within the retail sectors does vary. Sectors such as grocery retailing or DIY retailing are highly concentrated—which means that a low number of retailers holds a high percentage of the market shares—whereas other sectors such as fashion retailing for instance are less concentrated in contrast and have a high number of retailers that generate a high amount of sector sales (Planet Retail 2015).

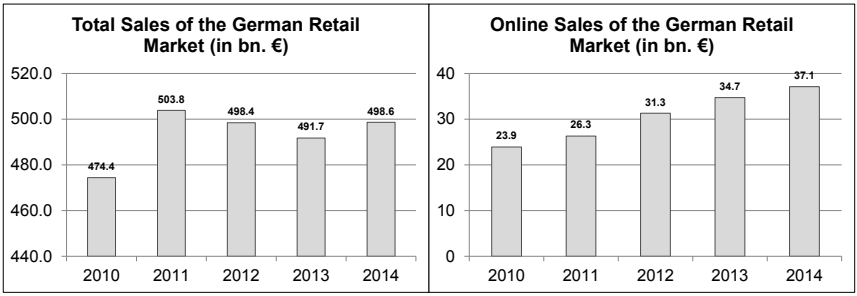

Figure A—1: Total sales and online sales in Germany

Source: Eurostat (2015); HDE (2015, p. 3).

Retailers do not only attract customers by the retail mix they offer, but furthermore by the value they offer to their customers. The perceived value is defined as the customers' assessment of the perceived utility of and expectations for received retail offers (Zeithaml 1988). In this vein, perceived value has been ascribed to a high strategic importance, because the delivery of value to customers to fulfill their needs, helps retailers to achieve a sustainable competitive advantage (Sweeney and Soutar 2001; Woodruff 1997). Perceived value can be utilitarian or hedonic, even though both dimensions are not mutually exclu-

sive and can appear in varying degrees. Utilitarian value is of functional nature and is represented in terms of quality and price. In contrast, hedonic value is of a more psychological nature and is perceived in terms of emotional and social states (Babin et al. 1994; Sweeney and Soutar 2001). Within the extant literature studies have already addressed effects from perceived value on retail brand equity or closely related attitudinal concepts (Chaudhuri and Ligas 2009; Overby and Lee 2006). However, researchers also examined the opposite directionality of effects, with retail brand equity/attitudinal concepts influencing perceived value (Das 2014; Grewal et al. 2004). Because these mentioned effects have been addressed in unidirectional studies only, and therefore have not been examined simultaneously it is unclear first whether these effects hold when they are assessed within a reciprocal setting and second how both variables influence consumer behavior.

Despite the necessity to pursue a retail branding strategy within current markets, that are mostly stationary retail markets, retailers are faced with new challenges, regardless of the retail sector. These challenges come hand-in-hand with the increasing digitalization which also leads to changes within the retailing landscape (Verhoef et al. 2015). E-commerce has grown fast, online sales in Germany have a steady growth (see Figure A—1) and are expected to hit 41.7 bn € in 2015 (HDE 2015), because consumers have a 24/7 access, can compare products and prices easily, and can choose from convenient delivery options. Former brick-and-mortar retailers are therefore expanding their markets and introduce online platforms such as Swedish-based H&M that introduced four new online shops in 2014 and now offers online shops in 13 out of the 55 countries it operates in (H&M 2015). Offering an integrated multichannel or multichannel retail experience is expected to be most promising for traditional brick-and-mortar retailers, due to its high relevance in the future. Thus, there is a high need for retailers that operate in both, the traditional offline market as well as the online market to integrate their channels to offer the consumer an integrated shopping experience and thus to pursue a multichannel strategy (Rigby 2011).

The necessity to deal with multichannel or omnichannel retailing has recently also been addressed by a special issue of the Journal of Retailing (2, 2015). In this vein multichannel retail management needs to be clearly distinguished from omnichannel retail management. Multichannel retail management focuses on the design, deployment, coordination, and evaluation of channels to improve the customer experience targeting one channel. In contrast, omnichannel retail management targets the customer experience across channels by focusing on the synergies between all channels and customer touchpoints (Neslin et al. 2006; Verhoef et al. 2015). The special issue includes articles

that cover three fields within multichannel and omnichannel retailing research: The influence of single or multiple channels on performance (Baxendale et al. 2015; Cao and Li 2015; Pauwels and Neslin 2015; Wang et al. 2015), different shopping behavior across retail channels (Bilgicer et al. 2015; Li et al. 2015; Melis et al. 2015), and the integration between retail channels, especially with regard to retail mix instruments (Emrich et al. 2015; Gong et al. 2015; Herhausen et al. 2015; Rapp et al. 2015). However, especially with regard to retail branding, the question arises whether the channel retail brands interact and whether further interdependencies between the retailers' channels exist.

Summarizing the aforementioned issues, retail managers are confronted with complex decisions regarding their retail brand strategies. These decisions regard (1) strategic retail-sector-compatible levers to enhance consumers' retail brand perceptions, (2) consumer perceptions of retail brand equity and the offered value in terms of utilitarian value (in terms of quality and price) and hedonic value (in terms of emotional and social states) as well as (3) channel-specific consumer perceptions within a multichannel environment. Hence, in the vein of the steadily growing competition in stationary retail markets, but also in the light of an increasing sales volume of e-commerce, the following key questions regarding retail brand equity arise:

(1) Which specific retail attributes most strongly predict retail brand equity in each retail sector and does the influence of retail brand equity on loyalty differ between retail sectors?

(2) How is the reciprocity between retail brand equity and perceived value characterized and which of these two has a stronger total effect on loyalty? Also, do these effects vary between retail sectors, especially when focusing on utilitarian value and hedonic value?

(3) Against the background of the growing relevance of multichannel retailing, do interdependent relationships between offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity and loyalty to a retailer exist? And furthermore, do the paths to loyalty vary when focusing on retail sectors and differently performing retailers?

These key questions and further—more detailed questions—are relevant for both scholars and retail managers. As pointed out before, retail brands are highly essential when aiming to induce or increase consumer loyalty, which

influences retail performance. Nonetheless, research that targets retail branding is still scant and several research areas regarding retail brand equity and related effects arise that have either not yet been fully addressed or that have revealed inconclusive results. Thus, these research areas need to be addressed.

2. Research Gaps and Literature Review

2.1. Overview

The subsequent literature review gives a profound overview of what the extant literature has variously addressed. A plethora of research areas exists with regard to retailing research. However, for the purpose of this introduction, the following literature review focuses on three major research streams in retail branding: first, studies that focus on retail brand equity or retail image and their antecedents in retail sectors, second, on studies that shed light on perceived value in retailing, and third, on studies that handle with channel-relations in a multichannel or multichannel retail setting. This section concludes by illuminating the key research objectives of this doctoral thesis that at the same time serve as a guideline for the studies that are presented in the following.

2.2. Retail Brand Equity and Retail Image in Retail Sectors

Studies on retail brand equity (see Figure A—2) are mostly based on the conceptualization of brand equity according to Keller (1993, 2003) and consider consumer-based retail brand equity as the differential effect of brand knowledge on the consumers' response to the marketing activities of the retailer (El Hedhli and Chebat 2009; Hartman and Spiro 2005; Jara and Cliquet 2012). Scholars show that retail brand equity is multi-facetted and is regarded as the information concerning a retailer in the consumers' mind. This information comprises the knowledge regarding a retailer and the associations of this retailer as a strong, attractive, unique, and favorable brand (e.g., Hartman and Spiro 2005). Within the extant literature, different approaches exist with regard to the measurement of retail brand equity. Yoo and Donthu (2001), show that retail brand equity consists of three main components that are brand loyalty, perceived quality, and awareness/associations. In contrast, Jara and Cliquet (2012) more strongly emphasize the role of brand image for the building of retail brand equity. The authors develop a two-dimensional measure that includes brand awareness and brand image. The latter is comprised out of five facets, namely perceived quality, price image, personalities, brand service, and store service. However, con-

ceptualizations also exist that are more closely linked to the common conceptualization of Keller (1993, 2003), such as the customer-based brand equity measure of Verhoef et al. (2007a) that was applied in car retailing and which is applied in the subsequent studies (see Chapter B to Chapter D).

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
Arnett et al. (2003)	The study aims to develop a parsimonious retailer equity index.	None	PLS n = 162 n = 124	Retailer equity is comprised out of five dimensions: retailer loyalty, retailer awareness, service quality, product quality, and perceived value. The external validity of the retailer equity index is assessed and it is shown, that retailer equity has a positive influence on the consumer's shopping intentions.
El Hedhli and Chebat (2009)	The paper aims to give a conceptualization of the shopper-based mall equity and to develop a measurement of this construct.	Conceptualization of brand equity and store equity according to Keller (1993) and Hartman and Spiro (2005)	CFA n = 905	The authors develop a third-order model of mall equity, which is a two-dimensional constructs that consists of mall image and mall awareness. Whereas mall awareness is a one-dimensional construct, mall image is—in contrast—conceptualized as a multidimensional construct that consists of convenience, environment, product quality, and services quality. Furthermore the authors show the necessity to recognize not only the image but the equity, as mall awareness is found to be twice as important as mall image when explaining mall equity.
Hartman and Spiro (2005)	The authors aim to shed light on the benefits of store equity as compared to store image.	Brand equity conceptualization according to Keller (1993)	Conceptual	The authors discuss the conceptualization and operationalization of consumer-based store equity. The conceptualization includes the differential effect of specific store knowledge to a comparable though different store. In this vein, store knowledge represents the store name node that is linked to store associations in memory, including store awareness and store image. Customer response builds a further component of store equity and is defined based on responses regarding the store's marketing mix.
Jara and Cliquet (2012)	The authors aim to conceptualize and develop a retail brand equity measurement.	Brand equity conceptualization according to Keller (1993)	PLS n = 54 n = 504	The authors show that retail brand equity is a two-dimensional concept composed of awareness and retail brand image. The latter consists of five subcomponents: perceived quality, price image, retail brand and retailer personality, brand service, and store service. Furthermore the authors show that retail brand awareness and perceived quality are the most important determinants of retail brand success, whereas price positioning is less important.
Verhoef et al. (2007a)	The authors examine how car dealers contribute to brand retention and how this contribution is affected by brand tier.	Theory of consumption systems	Logit model n = 970	The study's results show that car dealers that sell volume brands are able to increase brand retention, whereas car dealers selling prestige and economy brands cannot influence brand retention. For economy brand car dealers, it is shown that the extrinsic dealer service quality has the smallest effect, whereas dealer payment equity is most influential. The influence of extrinsic service quality and dealer payment equity varies for prestige, volume, and economy brand car dealers. Brand equity is positively connected to extrinsic service quality.
Yoo et al. (2000)	The study examines the effects between marketing mix elements and brand equity.	Brand equity model according to Aaker (1991)	SEM n = 569	The results show that brand loyalty, perceived quality, and brand awareness are linked to brand equity positively. Whereas frequent price promotions are shown to decrease brand equity, high advertising spending, high prices, a good store image as well as high distribution intensity are found to lead to high brand equity.

Figure A—2: Studies on conceptualization and measurement of retail brand equity

Source: Own creation

Regarding influencing factors scholars often study the role of retail attributes for store or retailer image (e.g., Martineau 1958; Mazursky and Jacoby 1986; Pan and Zinkhan 2006) and less frequently for retail brand equity (e.g., Beristain and Zorrilla 2011; Yoo et al. 2000). In this vein, most scholars analyze single retail

sectors, sometimes claiming that their results can be generalized to the retail industry as a whole. Jinfeng and Zhilong (2009) were among the first scholars to provide evidence of retail brand equity in grocery retailing, the sector that has received the most research attention (e.g., Allaway et al. 2011; Beristain and Zorrilla 2011; Swoboda et al. 2014), followed by studies of fashion retailing (mostly on image, Arnett et al. 2003; Berry 1969; Liljander et al. 2009).

Studies in other sectors are scarce. Darian et al. (2005) and Kukar-Kinney et al. (2007) for example have analyzed price and service effects on retail brand equity in electronics retailing. Swoboda et al. (2007), among few others, have compared various retail sectors in showing, for example, that retail attributes have different effects on retail brand equity. Nevertheless, the authors did not systematically conceptualize the role of retail attributes in the building of retail brand equity across retail sectors. Thus, research on retail brand equity across retail sectors is rare and limited.

2.3. Perceived Value and Retail Brand Equity in Retailing

Scholars have intensively analyzed the effects of perceived value and retail brand equity on important behavioral downstream variables (for reviews, see Jones et al. 2006; Swoboda et al. 2013a), but they have rarely analyzed the relationship between them. Scholars have argued that retail brand equity represents the knowledge and image of a firm in the minds of consumers (Ailawadi and Keller 2004; Hartman and Spiro 2005) and have examined the effects of retail attributes on brand equity and loyalty primarily for retail chains (e.g., Jinfeng and Zhilong 2009; Yoo et al. 2000).

Within the much broader value research, scholars have addressed the dimensions of perceived value, its antecedents and effects as well as mediating effects. With regard to the dimensions of perceived value (see Figure A—3) Babin et al. (1994) were among the first to empirically address the multidimensionality of the value construct in retailing. The authors distinguish between utilitarian and hedonic value. Utilitarian value is considered as the outcome that results from a conscious pursuit of an anticipated goal, whereas hedonic value is considered to reflect a prospective entertainment and emotional worth. The authors show that both dimensions are valid to measure the consumers' perceived shopping value that is provided by a shopping experience. In contrast, Rintamäki et al. (2007) and Smith and Colgate (2007) conceptually address the multifaceted nature of the value construct. Rintamäki et al. (2007) define value as the consumers' personal and holistic assessment on quality that is the subjective evaluation of the positive and negative consequences that result from the use of a product or service. The authors identify for key

dimensions of value: economic, functional, emotional, and symbol value. Economic value is regarded from a price-quality-ratio perspective, whereas the functional value of a shopping experience is derived, when the consumer is able to find products in store with minimal time effort as well as with less physical and cognitive effort. Emotional value is created, when the retailer has the ability to arouse affective states and finally, symbolic value relates to social states that are conveyed by the shopping experience. In this vein Smith and Colgate (2007) also distinguish between four value dimensions: functional/instrumental, experiential/hedonic, symbolic/expressive, and cost/sacrifice value. The functional/instrumental value that a consumer perceives is linked to the degree to which a product or service provides the expected utility, whereas experiential/hedonic value conveys experiences, feelings, and emotions that are connected to the product or service. The symbolic/expressive value, in contrast, delineates the degree to which the consumer assigns a psychological meaning to the product or service, whereas the cost/sacrifice value is connected to the consumers' perceived transaction costs that are the costs and sacrifice that are linked to the acquisition, the possession, and the use or consumption of the product or service.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
Babin et al. (1994)	The authors aim to develop and validate a scale to measure both hedonic and utilitarian shopping value.	None	Factor analysis n = 6 and 8 (Focus groups) n = 125	The authors show that distinct hedonic and utilitarian shopping value dimensions do exist and are related to a number of important consumption variables.
Mathwick et al. (2001)	The authors aim to develop an experiential value scale.	None	CFA n = 515 n = 213 n = 302	The experiential value scale is valuable as a measurement tool, useful in describing the perceived make-up of a retail value package and predicting differences in shopping preferences among consumers as well as patronage intention in multichannel retail systems. The scale distinguishes between the benefits derived from perceptions of playfulness, aesthetics, customer return on investment and service excellence.
Rintamäki et al. (2007)	Development of a framework for identifying competitive customer value propositions.	None	*Conceptual*	Four hierarchical key dimensions of customer value – economic, functional, emotional, and symbolic – are identified. Economic value and functional value are more likely to represent points of parity. Emotional value and social value represent points of difference for retail companies seeking gaining of competitive advantage.
Smith and Colgate (2007)	The authors aim to develop a conceptual framework on customer value.	None	*Conceptual*	Customer value is a central marketing concept that is a useful tool in regard to competitive advantages. The authors distinguish between functional, experiential/hedonic, symbolic/expressive, and sacrifice value.
Sweeney and Soutar (2001)	Development of measure that can be used to assess customers' perceptions of the value of a consumer durable good at brand level in a retail purchase situation.	None	CFA n = 6 (Focus groups) n = 273 (Stage one) n = 606 (Stage two) n = 636 (Stage three)	Four distinct value dimensions emerged: emotional, social, quality/performance, and price/value for money. Utilitarian value embraces the two functional dimensions: quality/performance and price/value, whereas hedonic value consists of the two psychological dimensions: emotional and social value. All four dimensions help significantly in explaining attitudes and behavior.

Figure A—3: Studies on dimensions of perceived value

Source: Own creation.

Furthermore, Mathwick et al. (2001) and Sweeney and Soutar (2001) both empirically address the dimensions of perceived value. Mathwick et al. (2001) emphasize experiential value and develop a measurement scale. Experiential value represents the consumers' perceived benefits from playfulness (i.e., mainly the perceived intrinsic enjoyment from an activity), aesthetics (i.e., mainly regarding the retail environment), the consumers' perceived economic utility as well as the utility that is derived from the efficiency of the exchange, and the service providers' ability to deliver expertise and task-related performance. Sweeney and Soutar (2001), on the contrary, do not address a single value dimension but furthermore aim to develop a value measurement that can be applied within retail purchase situations. The results of the study reveal four distinct value dimensions: emotional, social, quality/performance, and price/value for money. Whereas quality/performance as well as price/value for money can be ascribed to utilitarian/functional value the remaining dimensions of emotional as well as social value reflect hedonic/psychological value dimensions.

As shown, various conceptualizations of perceived value and relevant dimensions exist. All of them have common intersections but are also different with regard to specific value dimensions (e.g., experiential value). Still, perceived value highly depends on the context (e.g., product-specific vs. retailer-specific, purchase vs. post purchase situation) and thus conceptualizations may vary (Babin et al. 1994; Sweeney and Soutar 2001). However, within value research, the scale of Sweeney and Soutar (2001) is regarded as a well-established scale (Helkkula et al. 2012).

Considering antecedents of perceived value (Figure A—4) scholars have focused on psychological determinants. Arnold and Reynolds (2012) examine the influence of consumers' approach and avoidance motivation on hedonic motivation and hedonic value and find that both motivational types lead to an increase of hedonic value, whereas Babin and Darden (1995) investigate the influence of the consumer's self-regulation regarding utilitarian and hedonic value perceptions. On the other hand scholars also focus on store- or shopping-related factors that influence value perceptions. Kerin et al. (1992) examine the effect of the consumers' perceptions of the shopping experience, as well as merchandise quality and price perceptions on value perceptions. In contrast, Babin and Babin (2001) analyze the role of deviations from the perceived store-typicality on value perceptions. Finally Rayburn and Voss (2013) provide a framework that shows that retail atmosphere perceptions influence utilitarian and hedonic value likewise.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
Arnold and Reynolds (2012)	The authors investigate approach and avoidance motivations in a hedonic consumption context.	Motivational theory	SEM n = 1080	It is shown that approach and avoidance motivation both amplified hedonic shopping motivations and lead to an increase of hedonic shopping value.
Babin and Babin (2001)	Examining the effect of deviations from the perceived prototypicality of a retail store on affect, patronage intentions and shopping value.	Retail categorization process according to Ward et al. (1992)	ANOVA, SEM n = 133	The authors show that typicality has indirect effects on patronage behavior and on shopping value. Low typicality relates to excitement and discomfort which influence patronage intentions and perceived shopping value, whereas high typicality directly impacts patronage intentions which leads to an increase of utilitarian shopping value.
Babin and Darden (1995)	Considering the role of consumer self-regulation as a moderator of relationships between shopping emotions and consumer evaluations of the shopping experience.	Consumer self-regulation theory	SEM n = 130	It is shown that consumer self-regulation alters the effects of emotions, which are evoked by a retail store service scape, on consumer shopping behavior and perceived shopping value. Shoppers that are more state oriented are less likely to regulate their behavior and are more vulnerable to contextual influences in contrast to action oriented shoppers.
Kerin et al. (1992)	The authors examine the influence of store shopping experience on consumer price, quality, and value perceptions.	Means-end perspective	SEM n = 2 (Study 1) n = 1,193 (Study 2)	Merchandise price and quality perceptions mediate the influence of shopping experience on perceived value, though shopping experience has also a direct effect on perceived value. It is shown that store shopping experience has the strongest influence on consumers' value perceptions in comparison with merchandise price or quality perceptions.
Rayburn and Voss (2013)	Proposition of a model of holistic perceptions that relate to utilitarian and hedonic value, aiming to test whether the relationship differs for different retailers.	Perceived value theory	SEM n = 342	It is shown that perceived atmosphere is positively associated with both hedonic and utilitarian shopping value. Perceived organization and perceived modernness have a direct influence on value perceptions but their influence is also partially mediated by perceived atmosphere. Perceived style has no direct influence on perceived utilitarian and or hedonic value, but an indirect influence which is mediated by perceived atmosphere is shown.

Figure A—4: Studies on antecedents of perceived value

Source: Own creation.

Furthermore, scholars have also addressed the effects of perceived value on various consumer behavioral outcomes (see Figure A—5). Carpenter (2008) analyzes the effects of perceived value on satisfaction, word of mouth, attitudinal loyalty, and share of purchases by focusing on discount retail chains. The study shows that utilitarian value and hedonic value both influence satisfaction, which affects attitudinal loyalty but does not directly affect word of mouth and purchase intentions. Harris and Goode (2004) provide an analysis of the effects between service quality, perceived value, trust, satisfaction, and loyalty by focusing on book and travel retailing. The authors provide empirical evidence for the effects of perceived value on trust and loyalty. Jones et al. (2006) test their framework across a variety of retail industries to provide generalizable implications. The authors show that utilitarian value and hedonic value both interact with satisfaction. Overall hedonic value more strongly relates to satisfaction, word of mouth, and re-patronage anticipation, whereas utilitarian value more strongly influences re-patronage intentions. Finally, Lin et

al. (2005) focus on online retailing and show that perceived value has effects on post purchase behavior, satisfaction, and word-of-mouth.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
			Direct effects	
Carpenter (2008)	The authors strive to investigate the relationship between shopping value, satisfaction, and loyalty in discount retailing.	None	SEM n = 375	Utilitarian and hedonic shopping values influence satisfaction, which positively influences attitudinal loyalty. Attitudinal loyalty furthermore influences word of mouth and purchase intentions. Nevertheless hypotheses on effects regarding influences from satisfaction on word of mouth and from satisfaction on share of purchase were not supported.
Harris and Goode (2004)	The authors aim to develop and extend existing conceptualizations of service dynamics and propose and test a loyalty scale.	Interaction action theory, trust theory, social exchange theory	Correlation analysis, path analysis, SEM n = 294 (Study 1) n = 204 (Study 2)	It is shown that loyalty as a sequential, four-dimensional framework is directly and indirectly influenced by trust, perceived value, satisfaction, and service quality. Trust is shown to be the central driver of loyalty, concurrent with the direct and indirect influences of perceived value, satisfaction, and service quality.
Jones et al. (2006)	The authors examine how the complex interrelationships between satisfaction, hedonic and utilitarian shopping value, and important retail outcomes differ.	Theory of needs satisfaction, attitude theory	Multiple regression analysis n = 245	Satisfaction is influenced by hedonic and utilitarian value, though more strongly by hedonic value. Hedonic value influences word of mouth, loyalty, and re-patronage anticipation, while utilitarian value positively relates to re-patronage intentions and loyalty, while having a negative effect on re-patronage anticipation. The effect on word of mouth is stronger for hedonic than for utilitarian value, while the effect on patronage intentions is higher for utilitarian value. The increase of perceived hedonic value leads to a decrease of the influence of satisfaction and word of mouth, and an increase of perceived utilitarian value leads to a decrease of the influence of satisfaction on re-patronage intentions and loyalty.
Lin et al. (2005)	Proposition of an alternative model specification for a better conceptualizing of the customer perceived value construct.	Customer perceived value theory	SEM n = 356	Perceived value should be conceived as a formative construct that leads to an increase of consumer behavior, namely satisfaction, word-of-mouth and customer re-patronage intentions.
			Simultaneous effects	
Ou et al. (2014)	Examination of the moderating role of consumer confidence on the effect of value, brand, and relationship equity on loyalty and potential variance of the moderating role across service industries.	Economics theory, signal theory	Multi-level-analysis; meta-analysis n = 3592	Across industries the effects of value, brand, and relationship equity on loyalty are significantly positive. The relationship between value equity and customer loyalty is stronger for customers with lower consumer confidence and weaker for customers with higher consumer confidence, this means that customers carefully calculate value for money when deciding on a purchase. The results indicate that the variance of the interactions of value, brand, and relationship equity with consumer confidence stem from differences between industries.

Figure A—5: Studies on effects of perceived value

Source: Own creation.

Scholars have also addressed antecedents and effects of perceived value (see Figure A—6). Most scholars focus on store- or retailer-related antecedents and on consumer behavioral outcomes. Focusing on effects on loyalty scholars analyze the direct and mediated influence of retailer personality (Das 2014), conceptualize the impact of store image on loyalty that is mediated by perceived value (Grewal et al. 2004), and empirically show the effect of store perceptions (i.e., service, operations, appearance, quality, and price) on loyalty via perceived value (Sirohi et al. 1998). However, studies also address effects

on patronage intentions and show that store environmental cues influence value perceptions and thus the consumer's store patronage intentions (Baker et al. 2002). In this vein Stoel et al. (2004) show that mall attribute beliefs influence re-patronage intentions via hedonic value and utilitarian value. Within the research domain on the role of value as a mediator, the extant literature also focuses on the consumers' willingness to buy. Dodds et al. (1991) were among the first researchers that referred to associative/attitudinal concepts—such as retail brand equity—to fully illuminate perceived value antecedents and effects on consumer behavior. They showed that extrinsic cues like price, brand name, and store name influence consumer perceptions such as value and thus consumers' willingness to buy. In this vein, Sweeney et al. (1999) analyze the effect of various retailer-related quality perceptions and of perceived financial risk on value perceptions and willingness to buy. Grewal et al. (1998a) examine how price perceptions and perceived quality influence willingness to buy and search intentions through value perceptions, whereas Grewal et al. (1998b) focus on the effect of price discount, brand name, and store name on quality and image perceptions and thus perceived value. They show that perceived value positively influences purchase intentions. Finally, Arnold and Reynolds (2009) focus on consumer psychological antecedents and examine the influence of the consumers' prevention and promotion focus on utilitarian and hedonic value perceptions and word of mouth subsequently.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
			Value as mediator	
Arnold and Reynolds (2009)	Analysis of the relationship of regulatory focus, mood regulation, retail marketplace evaluations and hedonic and utilitarian value.	Affect regulation theory, regulatory focus theory	SEM n = 79 (Study 1) n = 578 (Study 2)	Mood regulations are related to the regulatory focus, i.e. promotion and prevention focus. The authors show that mood regulations have a direct influence on hedonic and utilitarian shopping value and furthermore mediate the influence of regulatory focus (promotion and prevention focus).
Baker et al. (2002)	Investigation of how store environment cues affect perceived merchandise value and patronage intentions.	Inference theory, schema theory, theory of affordances	SEM n = 297 (Study 1) n = 169 (Study 2)	Design cue perceptions have a negative effect on time/effort and psychic cost perceptions and are the only significant antecedent of merchandise quality perceptions, as an influence of employee and music perceptions is not found. Perceived merchandise value is significantly affected by merchandise quality, and monetary price and is besides service quality, time/effort costs, and psychic costs a driver of patronage intentions.
Das (2014)	Investigation of the relationship between retailer personality, perceived quality and purchase intention with retailer loyalty.	Theory of reasoned action	SEM n = 365	Retailer personality has a direct influence on perceived quality, loyalty, and purchase intentions. It is also shown that both, perceived quality and purchase intention positively relate to loyalty. The relationship between retailer personality and store loyalty is mediated by perceived quality.
Dodds et al. (1991)	Examination of the effects of price, brand, and store information on perceptions of product quality and value, as well as willingness to buy.	None	ANOVA n = 585	Empirical evidence that price has a positive effect on perceived quality, but relates negatively to perceived value and willingness to buy. Perceptions of quality and value, as well as consumers' willingness to buy are influenced by favorable brand and store information.

Figure to be continued

Figure A—6 continued

Grewal et al. (1998a)	Proposition of a model that examines the effects of store name, brand names and price discounts on store image, brand quality, internal reference prices, value perceptions and purchase intentions.	Congruity theory, adaption-level theory, assimilation-contrast theory, self-perception theory	SEM n = 309	Store name and quality of merchandise are found to influence perceived image. It is further shown that internal reference price is influenced by price discounts, brand name, and perceived quality. The influence of price discounts on a brand's perceived quality is minimal. The influence pf price discounts, internal reference price, and brand's perceived quality on perceived value is significantly. Perceived value and store image relate to purchase intentions positively.
Grewal et al. (2004)	The authors focus on how the internet influences price and non-price factors to contribute to value.	None	---	Focusing on superior value and customer loyalty may serve a firm to keep competition under control within online retailing, which is influenced by consumer online shopping characteristics and internet retailer characteristics. Value may serve as a mediator of the relationship between price and non-price factors influencing loyalty.
Grewal et al. (1998b)	Deliver an understanding of how price-comparison advertising could influence buyers' perceptions of value and set up a framework for addressing the deception issue.	Adaption-level theory	SEM n = 361 (Study 1) n = 328 (Study 2)	It is shown that the advertised selling and reference prices as well as consumers' perceptions of product quality influence the internal reference price. Furthermore the authors show that perceptions of transaction value mediates the effect of advertised selling price on consumers' acquisition value, while acquisition value mediates the effect of perceived transaction value on consumers' behavioral intentions.
Sirohi et al. (1998)	Examination of antecedents of loyalty intentions and of the effects of perceived value of the focal and second preferred store on loyalty.	None	SEM n = 16,096	Service quality strongly determines merchandise quality perceptions. Perceived value for money is strongly influenced by perceived relative price and sales promotion perception and less strongly influenced by service and merchandise quality. Service quality and merchandise quality both relate to loyalty. The role of perceived value in determining loyalty is especially crucial when a high degree of competitor attractiveness is present.
Stoel et al. (2004)	Investigation of the effects of mall attributes on shopping value and re-patronage intention.	None	SEM n = 276	Attribute perceptions positively impact time spent at a mall, as well as hedonic and utilitarian shopping value. Re-patronage intentions are found to be influenced by hedonic shopping value, though the same effect for utilitarian value could not be supported.
Sweeney et al. (1999)	The authors strive to examine the role of perceived risk within a model of the antecedents and consequences of perceived value.	None	SEM n = 609 n = 459	It is shown that perception of performance/financial risk is the dominant antecedent of value perceptions. Perceived product and service quality increase perceived value for money and reduce perceived risk. Perceived relative price effects value for money negatively. Finally, the authors find that willingness-to-buy is positively influenced by perceived value.
		Mediators of value		
Chaudhuri and Ligas (2009)	The authors aim to examine the simultaneous influence of merchandise value and store affect on loyalty and willingness to pay a price premium.	Theory of value according to Mandler (1982), confirmation-expectation theory	SEM n = 150 (Study 1) n = 150 (Study 2) n = 1966 (Study 3)	Merchandise value has a direct influence on repurchase loyalty, while the influence on attitudinal loyalty is indirect, as it is mediated by store affect. The effect of merchandise value on store affect is found to be moderated by retailer differentiation. Finally the authors show that attitudinal loyalty significantly relates to willingness to pay a price premium, while the effect between repurchase loyalty and willingness to pay a price premium is insignificant.
Overby and Lee (2006)	The authors examine whether traditional value dimensions are valid for online shopping and how they impact preferences and intentions.	None	SEM n = 817	It is found that hedonic and utilitarian value both relate to preferences which influence intentions. Utilitarian value influences preferences and intentions more strongly than hedonic value and is relevant for both frequent and infrequent online shoppers likewise. Hedonic value is found to play a significant role for infrequent shoppers but not for frequent shoppers.

Figure A—6: Studies on antecedents and effects of perceived value

Source: Own creation.

By contrast, some scholars have also conceptualized and tested the opposite relationship, in which perceived value is mediated for example by attitudinal variables. Overby and Lee (2006), analyze whether traditional value dimen-

sions are valid in the online shopping context. The results show that utilitarian value and hedonic value both influence the preference toward an Internet retailer, though utilitarian value has a stronger effect. Furthermore the authors show that the effect of utilitarian value on preference is stronger for frequent (vs. less frequent) shoppers. In contrast, the effect of hedonic value on preference has been found insignificant (significant) for frequent (less frequent) shoppers, which may be explained by an increasing task-orientation of frequent shoppers. The study of Chaudhuri and Ligas (2009) on the other side focuses on brick-and-mortar retailers. The authors show that merchandise value influences store affect that in turn has an influence on repurchase loyalty and attitudinal loyalty. The latter is also found to have a positive effect in willingness to pay a price premium. Thus, studies show that value influences consumer behavior via associative/attitudinal concepts. Finally, Ou et al. (2014) examine the simultaneous effects of both value and brand equity on loyalty. They show that value equity and brand equity are important factors when aiming to retain consumers, though the effects vary for different levels of consumer confidence and across industries (see Figure A—5).

In summary, extant research, to the best of our knowledge, analyzes either the effect of perceived value on retail brand equity—or related associative/attitudinal concepts—or the effect of retail brand equity on perceived value and is thus inconclusive regarding the directionality of effects. Thus, that it is unclear whether perceived value and retail brand equity have a reciprocal relationship and whether perceived value or retail brand equity has a stronger total effect (i.e., the sum of direct and indirect effects) on consumer behavior.

2.4. Cross-channel Effects in Multichannel Retailing

Scholars have often analyzed the interdependencies between retail channels by assessing effects on either a single channel or on multiple channels (see Figure A—7). Most studies address unidirectional relationships. Focusing on influences of one channel, scholars analyze the effects an introduction of a new website has on offline sales (Pauwels et al. 2011), on offline shopping trips and offline spending (Van Nierop et al. 2011), and on instore assistance levels and pricing strategies (Ofek et al. 2011). Furthermore studies also address effects on online consumer behavior. Kwon and Lennon (2009b) examine the influence of offline brand image on online brand image, online perceived risk and online customer loyalty, whereas Kuan and Bock (2007) analyze the effect of offline trust on online trust and thus online purchasing intentions. Finally, the study of Gupta et al. (2004) deals with consumers' switching behavior from offline to online stores.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
		Unidirectional effects of offline or online channels		
Gupta et al. (2004)	This study examines consumer's channel switching behavior and investigates what kinds of consumers are more likely to switch from traditional to online stores.	Information economics theory, theory of reasoned action, risk theory	Logistic regression analysis n = 337	The tendency to switch from the offline to the online channels is determined by differences in channel risk perceptions, price search intentions, evaluation effort, and waiting time. Consumers who are enticed to purchase online perceive a lower channel risk, search effort, evaluation effort, and waiting time online than offline and express stronger price search intentions online than offline, while consumers who are attracted to offline channels perceive lower search cost and higher price search intentions online than offline.
Kuan and Bock (2007)	Examine the building process of trust by new visitors of a website of a multi-channel retailer.	Social capital theory	SEM n = 246	Word-of-mouth, offline trust, and expected sanctioning power were significant in forming online trust. The influence of trust in the offline presence showed that customers rely on offline experiences as an information channel to build trust in the online presence.
Kwon and Lennon (2009b)	Investigating how online risk, online image, and offline image determine online loyalty.	Theory of cognitive dissonance	(M)ANOVA, MG-SEM n = 671	Offline brand image of a multi-channel retailer positively influences its online brand image, online perceived risk, and online loyalty intentions. While online brand image is positively related to online risk and online loyalty, online risk did not influence online loyalty.
Ofek et al. (2011)	The authors examine the effect of a newly introduced online shop on investments in instore assistance and price level.	None	Equilibrium model	Given little differentiation between the competing retailers, investments in instore assistance may increase as a result of the online shop introduction if price competition is high and product returns can be decreased herby. Profits will decrease as a result of the increased investments.
Pauwels et al. (2011)	What is the impact of introducing an informational website on offline sales?	Information processing and search theory	LCA, vector autoregressive model n = 6594	Informational web site introduction has a positive effect on offline revenue in the short run. The revenue impact in the long run depends on customer segment; it is stronger for sensory products compared to non-sensory products; it is also stronger for customers with higher spatial distance to the store or with higher web visit frequency. Online price promotions affect offline revenue in the short run while non-price communications affect it in the long run.
Van Nierop et al. (2011)	The authors investigate the effect of the introduction and use of informational websites on offline shopping trips and money spent offline.	None	Tobit model n = 436	For most customers the use of a newly introduced informational website results in fewer shopping trips, fewer purchases, and less money spent in the retailer's offline store.
		Unidirectional effects of offline and online channels		
Ahn et al. (2004)	Exploring user acceptance for Internet shopping malls.	Technology acceptance model	SEM n = 932	Offline features (product quality and delivery service) strengthen the perceived usefulness, the main driver of behavioral intention to use the Internet shopping mall.
Badrinaray anan et al. (2012)	Analyzing whether attitude and trust transfer from offline to online stores and if the congruence between offline and online image affects online trust and attitude.	Schema theory, categorization theory, theory of reasoned action	MG-SEM n = 533	Trust in the physical stores of a multi-channel retailer transfer to trust in its online store, while no such effect was found for attitude toward on- and offline stores. Image congruity strengthens the attitudes toward and the trust in the online store, which both form online purchase intentions.
Melis et al. (2015)	The study aims to analyze the effect of the multichannel retail mix on online grocery store choice and whether these drivers may change when shoppers gain online experience.	Cost-benefit framework	Multinomial logit analysis n = 3234	The study shows that when shoppers start to buy groceries online, they tend to choose the online store that belongs to the same chain as their preferred offline store, particularly when the integration of online and offline store is strong in terms of assortment. With an increase of online shopping experience, multichannel shoppers' focus moves from comparing within a chain across channels to comparing stores across chains within the online channel. This results from an increase of the importance of online assortments, especially in terms of assortment attractiveness, and online loyalty.
Verhagen and van Dolen (2009)	The authors assess the role of multi-channel store image on online purchase intentions.	None	SEM n = 630	Offline service, merchandise, atmosphere, and store layout all have a positive impact on their online counterparts. Offline merchandise, online merchandise, online store atmosphere, and online store navigation positively influence online purchase intentions.

Figure to be continued

Figure A—7 continued

Wallace et al. (2004)	The study addresses whether retailers which pursue a multichannel strategy receive payoff in terms of loyalty and whether multiple channels influence the drivers of satisfaction and loyalty.	None	Regression analysis n = 580	Multichannel retailing is found to be an effective mean for creating loyalty. When comparing multichannel to single channel customers satisfaction is a better predictor of loyalty. Multiple channel outputs and multiple points of contact ease the satisfaction-loyalty relationship for multichannel customers.
Wang et al. (2009)	The authors examine whether the congruity between a retailer's offline and online appearances affects the relation between (a) website performance, (b) offline attitudes and online attitudes.	Categorization theory	SEM n = 290	It is shown that customers carry over their attitudes toward physical stores of a retailer to its website. If there is high congruity between stores and website, the attitude toward the website relates more on offline attitudes and less on actual website performance.
Yang et al. (2011)	The study examines how perceived offline service quality, perceived online service quality, perceived entitativity, and self-efficacy influence behavior toward online channel extension.	Theory of entitativity	SEM n = 441	It is shown that perceived offline service quality influences perceived online service quality directly and indirectly through perceived entitativity. Thus, perceived offline service quality not only has a positive effect on an existing offline channel, but also has a cross-channel impact onto the new online channel. Self-efficacy for change directly effects behavior but also—and more importantly—impacts the perceived offline service quality and perceived online service quality relationship.
Yang et al. (2013)	The authors emphasize the effects of cross-channel synergies and dissynergies on channel evaluation and investigate the customer's online channel adaption behavior.	Brand extension theory, expectation-confirmation theory	SEM n=308	The authors illustrate that the effects of synergies and dissynergies across channels exist simultaneously during the process of channel extension. Both, the offline channel service quality and the confirmation of the offline channel service performance affect online channel extension decisions.

Figure A—7: Studies considering effects on single channels

Source: Own creation.

Scholars focusing on unidirectional effects of offline and online channels have addressed the role of image within multichannel retailing. Verhagen and van Dolen (2009) assess the role of offline and online image on online purchase intentions and show that the effect offline store atmosphere and offline store layout on online purchase intentions is fully mediated by their online counterparts, whereas multichannel service perceptions have no influence and offline store merchandise has a direct effect and a mediated effect on online purchase intentions. In contrast, Badrinarayanan et al. (2012) analyze the effects of offline-online congruence on online store attitude and online trust by illuminating the moderating role of consumers' informational processing styles. Furthermore authors also focus on other attitudinal concepts. Wang et al. (2009) examine the role of offline-online congruity on the effects of website performance and offline attitude on online attitude, whereas Yang et al. (2011) examine the role of perceived offline service quality and perceived online service quality for consumer behavior toward online channel extension.

In contrast, scholars also analyze multichannel effects on consumer behavior. Melis et al. (2015) focus on the influence of the multichannel retail mix on online grocery store choice and show that consumers that start online grocery shopping strongly tend to buy at the same chain as offline, though this effect diminishes over time when the consumer gains experience. Wallace et al. (2004) analyze the effect of a retailers' multichannel strategy on loyalty and satisfaction and show that multiple channels can are able to fulfill the consumer's complex needs which enhances satisfaction and thus retailer loyalty. The study of Yang et al. (2013) focuses on consumers' online channel adaption behavior and analyzes the effects of cross-channel synergies and dissynergies. The study shows first that offline service quality perceptions influence online service quality perceptions and thus online usage intentions and second that the positive offline channel performance perceptions negatively influence perceptions of relative online channel benefits. Finally, Ahn et al. (2004) examine the influence of offline and online features on the consumers' intention to use an online mall by applying the technology acceptance model. The authors provide empirical support for different effects of offline and online feature: Offline quality positively influences usefulness, whereas online quality positively influences perceived ease of use and playfulness.

Considering effects on multiple channels (e.g., online channel and offline channel retention and sales), Biyalogorsky and Naik (2003) examine the influence of online activities on offline sales and online sales and show that online purchase behavior leads to cannibalization effects with regard to offline sales which, however, are only marginal and thus of minor importance (see Figure A—8). In contrast, scholars also focus on cross-channel integration and show positive effects on firm sales growth (Cao and Li 2015) and positive effects on consumer behavior that are mediated by perceived service quality (Herhausen et al. 2015). Emrich et al. (2015) empirically address the role of assortment integration for patronage intentions. The results reveal that general merchandizers can especially benefit from asymmetrical assortment integration, whereas a full integration offers better benefits for broad-line retailers.

Furthermore studies also concentrate on cannibalization and synergy effects. Avery et al. (2012) analyze the occurrence of cross-channel elasticities over time when online retailers introduce a new offline channel, whereas Pauwels and Neslin (2015) examine how the introduction of an offline store influences the revenue of online channels and catalog channels. Studies also illuminate consumer behavior across channels in terms of the use of channels for information and purchases. Heitz-Spahn (2013) analyzes cross-channel free-riding behavior during the consumers' purchase decision and shows that the extent of free-riding behavior depends on product characteristics and shopping mo-

tives. Strebel et al. (2004) examine consumer behavior towards information channels during purchase decisions and show the important role of information quality for channel choice. Illuminating the harmonization of marketing variables across channels Van Baal (2014) demonstrates that the harmonization leads to an increase of cross-channel customer retention, cannibalization and customer loyalty.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
		Unidirectional effects of online channels		
Biyalogorsky and Naik (2003)	The authors aim to illuminate the effects of online activities on online purchase behavior and offline and online sales.	None	Simultaneous and dynamic equations	The study shows that online equity accounts for 38% of online sales, and illuminates the importance of online equity. Offline sales are cannibalized due to online purchase behavior in the same time period. This is negligible because the percentage of the cannibalization effect is low.
		Unidirectional effects of offline and online channels		
Avery et al. (2012)	The authors examine cannibalization and synergy effects occurring with the introduction of an offline retail store in addition to an existing online store.	None	OLS regression n = 550	The authors found that in the short run the introduction of an offline store cannibalizes sales in the catalog channel, but not in the Internet channel. Continued presence of the physical store however benefits both the Internet and catalog channels' sales, with the former profiting more. While these direct channels suffer repeat purchasing decreases in the short run, they profit from higher rates of first-time customers over time.
Cao and Li (2015)	The study aims to analyze whether cross-channel integration contributes to firm sales growth and it aims to detect the firm-level factors that increase or decrease the effects of cross channel integration sales growth.	Status quo bias theory, categorization theory	Regression analysis n = 71 (publicly traded retail firms)	The study confirms that cross-channel integration has a positive effect on firm sales growth; higher levels of channel integration are therefore expected to lead to higher sales growth. Also, the firms' online experiences as well as a larger physical store presence have a negative influence on the relationship between cross-channel integration and firm sales growth. Hence, the authors find that firms that have a stronger focus on a specific channel benefit less from cross-channel integration.
Emrich et al. (2015)	The authors seek to examine the influence of multichannel assortment integration, considering the moderating role of assortment structures.	Negativity bias theory	SEM n = 959 (Study 1) n = 2005 (Study 2)	The authors show that full integration dominates no integration across assortment relations, but asymmetrical integration—the strategy that is most often realized by multichannel retailers—can have a detrimental impact for substitutive relations compared with no integration. Asymmetrical integration can be more beneficial than full integration for independent relations, while customer outcomes differ less for complementary relations.
Heitz-Spahn (2013)	The study explores the potential relation between channel and retailer switching behavior during decision making.	None	Logistic regression analysis n = 741	The study shows that consumers adopt a more complex multichannel behavior and visit several channels in order to find information on products and to evaluate those. Cross-channel free-riding behaviors are more likely for consumers who purchase products with similar characteristics such as electronics or furniture. When purchasing products such as apparel or accessories other consumer behavior occurs instead.
Herhausen et al. (2015)	This study analyzes online-offline integration and the effect of this integration on consumer behavior.	Technology adaption theory, diffusion theory	Regression analysis n = 107 (Study 1) n = 129 (Study 2) n = 138 (Study 3)	The study shows that that online-offline integration directly increases perceived service quality of the Internet store and that perceived service quality of the Internet store increases overall as well as Internet outcomes. Also online-offline integration indirectly increases overall and Internet outcomes via perceived service quality of the Internet store. The effects are found to be moderated by customers' Internet shopping experience. Furthermore the integration is not found to have a negative influence on the physical store.

Figure to be continued

Figure A—8 continued

Pauwels and Neslin (2015)	The authors investigate whether the physical store cannibalizes online and catalogue operations and how consumer behavior might change when purchasing among channels.	None	Vector autoregression analysis n = 13,492 n = 14,993	The authors find that store introductions decreased purchase frequency in the catalogue channel but increased purchase frequency overall. Furthermore, store introductions lead to an increase of returns and exchange frequency, whereas the transaction size of purchases, returns, and exchanges was not influenced by the introduction of a new store. Still it directionally increased exchange value. The authors identify customer retention to be the main benefit of the introduction of a store as opposed to customer development or acquisition.
Strebel et al. (2004)	The authors aim to investigate how perceived information quality among others influences the consumer's information-channel-choice behavior.	Utility maximization framework	Regression analysis n = 350	It is shown that an increase of the quality of information obtained in an information channel increases the probability that the consumer accesses that information channel during the search process. When information quality is observed, information channels operate as substitutes. The probability of search in another channel is decreased when the quality of information in one channel is increased.
Van Baal (2014)	The author examines the harmonization of marketing variables connecting both advantages and disadvantages of harmonization for channels.	Social judgement theory, cognitive dissonance theory	SEM n = 1000	The study shows that an increase in harmonization leads to an increase in cross-channel customer retention, cannibalization and customer loyalty. Seen from another point of view, the study shows that cross-channel customer retention, cannibalization, and customer loyalty are not completely exogenous. Therefore, retailers can influence these constructs, which seems apparent only in the case of loyalty. The finding that cross-channel customer retention and cannibalization can partly be controlled shows that these constructs are not purely the result of a deterministic process.

Figure A—8: Studies considering effects on multiple channels

Source: Own creation.

Few studies address bidirectional relationships (see Figure A—9), which are important to fully understand the interdependencies. Montoya-Weiss et al. (2003) focus on cross-channel synergies and analyze whether the perceptions of alternative channels have an influence on online channel use and satisfaction and show that the consumers' online channel usage intention is influenced by the online offer. Badrinarayanan et al. (2014) examines how the congruity between offline and online channels influences the consumers' trust on the online store as well as the consumers' attitude toward the online store and thus purchase intentions. The authors show support for their framework and indicate the necessity for retailers to focus on the perceived congruity between their channels. Focusing on multiple channels, Kwon and Lennon (2009a) apply an experimental design and show that cross-channel effects between brand beliefs, brand attitudes, and purchase intentions for fashion retailers with strong (vs. weak) prior offline brand images and with positive (vs.) negative online performances exist. In contrast, Verhoef et al. (2007b) address the research shopper phenomenon and analyze consumers' search and purchase behavior across retail channels. The authors show that channel choice is influences by search- or purchase-specific channel attributes and channel attractiveness which is further determined channel lock-in and channel synergies. Chiu et al. (2011) investigate the determinants of cross-channel free-riding be-

havior. The authors show that such behavior can be increased by multichannel self-efficacy and perceived attractiveness of competitor stores, whereas within-firm lock-in leads to a decrease.

Author(s) and year	Research question	Theory/ framework	Sample and method	Core findings
		Bidirectional relationships on single channels		
Badrinaray anan et al. (2014)	The authors investigate the role of congruity between offline and online stores as well as between self-image and online store image in building online trust and attitude.	Theory of reasoned action, categorization theory	SEM n = 316	Congruity between online and offline stores increases trust in the online store directly and attitude toward the online store indirectly, mediated by trust. Also the store congruity exerts a positive overall effect on purchase intentions, mediated on the one hand by trust and attitude (Congruity → Trust → Attitude → Purchase Intentions), and on the other hand by trust alone (Congruity → Trust → Purchase Intentions). Image congruity reinforces both trust and attitude.
Montoya-Weiss et al. (2003)	The study aims to investigate how alternate channel assessments influence channel use and overall satisfaction in a multichannel context.	Technology adaption theory, diffusion theory	SEM n = 1137 (Study 1) n = 493 (Study 2)	Information content, navigation structure, and graphic style influence online channel usage and overall satisfaction. Multichannel service quality has complimentary effects on overall satisfaction. Also, offline channel service quality has competitive effects on the use of the online channel. Cross-channel synergies and dissynergies can be used to deliver service quality to the customer.
		Bidirectional effects on multiple channels		
Chiu et al. (2011)	The authors investigate driving factors of cross-channel free-riding behavior.	Push-pull-mooring paradigm	SEM n = 322	Perceived risk of purchasing online increases the attractiveness of (competitors') offline retail stores. Attractiveness of competing offline retail stores increases cross-channel free-riding intentions. Firms can avoid cross-channel free-riding through the development of within-firm lock-ins.
Kwon and Lennon (2009a)	Decode the reciprocal relationship between a multichannel retailer's offline and online brand images.	Summative model of attitude, theory of reasoned action, theory of cognitive dissonance	(M)ANOVA, MG-SEM n = 630 (Experiment 1) n = 650 (Experiment 2)	The authors verify the existence of positive intra- and cross-channel effects of brand beliefs on brand attitudes. Offline brand attitude affects both offline and online purchase intention; online brand attitude only drives online purchase intention. Furthermore consumers underlie a positive bias when evaluating the performance of a website related to a strong offline brand.
Verhoef et al. (2007b)	The study aims to investigate how customers choose a channel to use for search and purchase.	Theory of reasoned action	Regression analysis n = 396	The study shows evidence for cross-channel synergies due to positive coefficients for Internet search → store purchase, catalog search → Internet purchase, and catalog purchase → Internet search. Negative effects are found for catalog purchase → store search, and store search → catalog purchase relations. Negative cross-channel synergies occur, as consumers which perceive the catalog as attractive for purchases perceive the store to be less attractive for search and vice versa. Channel lock-in is non-significant for the internet channel the Internet is open to the research shopper.

Figure A—9: Studies considering bidirectional effects between channels

Source: Own creation.

In summary, the extant literature highlights the need for studies with bidirectional approaches to fully illuminate cross-channel synergies and interdependencies. Scholars mostly apply unidirectional approaches which might not fully reveal synergies that exist between channels. Former brick-and-mortar retailers that add an online channel to their existing channel(s) and extent their multichannel activities show the rising need for knowledge on interdependencies

between channels for strategic decisions (Neslin et al. 2006; Van Bruggen et al. 2010; Zhang et al. 2010).

The literature review revealed several areas that need further research. Therefore the following section will give an overview of the gaps in the extant literature and will develop the key research objectives that result from these gaps.

2.5. General Research Objectives

The first literature gap revealed that research on retail brand equity across retail sectors is rare and limited. In particular, it is unclear whether retail attributes are equally relevant for strong brand associations across retail sectors and which specific retail attributes most strongly predict retail brand equity in each retail sector. Thus, a broader, theoretically based conceptualization of retail brand equity predictors and effects is compelling. Therefore the aim of this doctoral thesis is to advance the literature by providing a more nuanced account of retail sectors as moderators in analyzing whether perceived retail attributes predict retail brand equity and, in particular, which specific attributes are the strongest predictors of retail brand equity across retail sectors. Important decisions on store choice, for example, are related to retail attribute associations that also influence brand associations and thus the building of a strong, attractive, unique, and favorable retail brand.

The second literature gap that has been identified refers to possible reciprocal effects between perceived value and retail brand equity. Existing research uses unidirectional approaches and either addresses effects from perceived value on retail brand equity or other related attitudinal concepts or addresses the opposite effect from retail brand equity on perceived value. In this vein, the existing research does not provide insights into this probable reciprocal relationship between perceived value and retail brand equity in differing settings. Theoretically, this understanding is important because retail brand equity and perceived value may interact differently, because the relevance of brands may vary across retail sectors, and because retail firms may focus on different aspects of value when approaching markets.

The third identified literature gap refers to interdependent effects within today's typical retail channel structures that are structures of former brick-and-mortar retailers that decided to extend their portfolio by adding an online channel. Extant research has, in particular, left the crosswise and reciprocal relationships among offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity, and consumers' loyalty unaddressed. Crosswise relationships apply effects between downstream variables (e.g., offline brand

beliefs and online retail brand equity) between channels, whereas reciprocal relationships apply feedback loops between variables on the same hierarchical level (e.g., offline retail brand equity and online retail brand equity) between channels. In multichannel structures, these bidirectional relationships are important as they represent interdependencies between offline and online channels that relate to consumer channel perception, long-term retail brand equity and loyalty to the retailer.

To shed light on these complex issues, three studies have been designed to pursue three key research objectives:

- The first research objective is to determine which retail attributes dominantly predict retail brand equity and to determine whether the importance of the retail attributes differs when comparing the most important retail sectors.
- The second research objective is to explore whether perceived value and retail brand equity have a reciprocal relationship and how they influence loyalty by comparing grocery retailing and fashion retailing.
- The third research objective is to investigate the interdependent effects of offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity and loyalty within typical multichannel retail structures. These interdependencies are analyzed in grocery retailing and fashion retailing and by taking retailers' varying offline and online performances into account.

These three key research objectives all deal with effects on retail brand equity and effects of retail brand equity. In this vein, they take either a single-channel or a multichannel perspective and illuminate either the antecedents of retail brand equity or the reciprocal relationships of retail brand equity with related constructs. In the following, each of the key research objectives is addressed and profoundly explored in a single study that addresses specific research questions. On the basis of the results of the three studies that are conducted, Chapter E includes the summary and the evaluations of the results of the three studies with regard to the three key research objectives. An overview of the overall framework of this doctoral thesis is provided subsequently.

3. Structure and Contribution of the Studies

3.1. Predictors and Effects of Retail Brand Equity

The main research objective of Study 1 is to determine which retail attributes dominantly predict retail brand equity and to determine whether the im-

portance of the retail attributes differs when comparing the most important retail sectors. The study pursues this research objective, because even though retail firms increasingly seek to position themselves as strong, attractive, and unique brands, little is known about potential differences in retail branding in different retail sectors. In this study, the importance of perceived retail attributes for consumer-based retail brand equity, particularly the varying roles of the retail attributes in important retail sectors, and the effects of retail brand equity on intentional loyalty are analyzed.

The underlying motivation for this study is twofold: First, from a theoretical perspective this research offers novel and valuable insights, because scholars already have analyzed the role of retail attributes for retail image in single retail sectors (e.g., Berry 1969; Diallo 2012; Martineau 1958; Mazursky and Jacoby 1986; Pan and Zinkhan 2006) but did less concentrate on retail brand equity (e.g., Beristain and Zorrilla 2011; Yoo et al. 2000). To the best of our knowledge the existing literature still lacks a systematic conceptualization and analysis of retail attribute effects on retail brand equity across retail sectors. However few sector comparisons exist (e.g., Swoboda et al. 2007). Second, from a managerial perspective retailers can benefit from this study results with regard to strategically complex decisions on retail brand equity. For instance with regard to investments in brand management the study offers insights on the question which retail attributes retail managers should focus on when aiming to maximize their returns on investment.

In detail, the following two research questions are examined:

- Are the retail attributes equally relevant for strong brand associations across retail sectors?
- Which are the specific retail attributes that most strongly predict retail brand equity in each retail sector?

The conceptual framework of the study 1 is twofold and is built on theories that regard retail brands and retail attributes as associations in consumer memory (Hartman and Spiro 2005; John et al. 2006; Keller 1993, 2003; Krishnan 1996), on motivational theories that help explain differences in consumer behavior between the observed retail sectors (Barsalou 1983, 1985, 1991; Kruglanski et al. 2002; Puccinelli et al. 2009), and on empirical studies. The first assumption is that specific retail attributes exist that dominantly influence retail brand perceptions and that these retail attributes vary between grocery, fashion, electronics, and DIY retailing. Two mechanisms underline this assumption. First, consumers store information about a retailer in a network of dependent associations. Hence retail brand equity can be regarded as a brand

node in consumer memory that is linked to various associations such as retail attributes. Second, the links between the associations are highly likely to vary due to different dominating shopping motivations in the retail sectors and a varying shopping frequency. The second assumption is that retail brand equity equally affects consumers' intentional loyalty when comparing retail sectors. The mechanism behind this assumption is that the retail brand node is of equal importance for consumers in decision situations. Furthermore, the effects of retail brand equity on consumer loyalty have been shown in previous studies (e.g., Allaway et al. 2011; Martenson 2007; Swoboda et al. 2013b).

To provide insight into these issues the empirical analysis of Study 1 is based on 2,112 consumer evaluations of retail firms in the grocery, fashion, electronics, and DIY sectors. These four retail sectors are chosen, because they represent the four largest retail sectors in Germany (Destatis 2015) and because consumer behavior is known to vary among these selected retail sectors (Pan and Zinkhan 2006; Schenk et al. 2007). Four cross-sectional designs have been applied in one typical medium-sized German city. The respondents were randomly selected over a period of one weak for each study. Each respondent was first asked to list three retailers from which he/she frequently shopped at in the observed retail sector. The interviewer then selected one retailer of these previously listed ones for the respondent to evaluate in the course of the standardized interview. The collected data were analyzed using non-recursive multi-group structural equation modeling. This method was selected, because it enables simultaneous testing differences between the observed retail sectors with regard to the effects of retail attributes on retail brand equity and the effects of the latter on loyalty.

The results of Study 1 offer fruitful and valuable contributions to current knowledge. First, the results extend retailing research, especially with regard to research on sector-specific differences of the predictors of retail brand equity and research on consumer behavior. It is indicated that the importance of retail attributes for retail brand equity varies among the observed retail sectors. However, a strong and stable link between retail brand equity and consumers' intentional loyalty is evident across grocery, fashion, electronics, and DIY retailing. Second, the sector-specific and cross-sectoral observations in this study provide managers with specific knowledge on the main levers of retail brand equity in different retail contexts. Thus, the finding of this study give managers a valuable guidelines to understand consumer perceptions in their respective retail sectors which can help to adjust their branding efforts in an efficient manner.

3.2. Reciprocal Effects of Perceived Value and Retail Brand Equity

The importance of perceived value (i.e., hedonic and utilitarian value) and consumer-based retail brand equity depends on the ability of a retail firm to alter shopper reactions and behavior. However, there is an increasing need for bidirectional models to assess the effects of both retail brand and perceived value on consumer behavior because both constructs are likely to interact and then might differently affect consumer behavior than the extant research suggests. Therefore the main research objective of Study 2 is to determine whether perceived value and retail brand equity have a reciprocal relationship and how they influence loyalty by comparing grocery retailing and fashion retailing. In addition Study 2 examines how the reciprocity between retail brand equity and perceived value but also their total effects on loyalty are characterized in fashion and grocery retailing when focusing on the perceived value dimensions (i.e., utilitarian value and hedonic value).

The underlying motivation for this study is twofold. First, from a theoretical perspective Study 2 refers to schema theoretical reasoning as well as goal and motivational theoretical reasoning to explain the reciprocity between perceived value and retail brand equity and their effects on loyalty as well as differences of these effects between retail sectors. These theories offer explanations for the directionality of effects between concepts in combination with information retrieval as well as for a varying strength of linkages between specific information in consumer memory. Second, from a managerial perspective, this study enhances the understanding of the interplay between perceived (utilitarian and hedonic) value and retail brand equity and their role for loyalty, which in turn is known to be a strong predictor of retail performance and a key indicator of competitive advantage (e.g., Deng et al. 2010). Thus, retail managers may gain valuable insights that may help guiding budget allocations within customer retention management, for example.

In detail, the following two research questions are examined:

- How is the reciprocity between retail brand equity and perceived value characterized and has retail brand equity or perceived value a stronger total effect on conative loyalty?
- Are the reciprocal effects between retail brand equity and perceived utilitarian and hedonic value and their total effects on conative loyalty stable or do they vary between retail sectors?

To provide insight into this issue, the conceptual framework of Study 2 is twofold and refers to schema theoretical and goal/motivational theoretical reasoning. First, the study analyzes the reciprocal relationship between retail brand

equity and perceived value and their effects on consumer loyalty. The underlying mechanism for this reciprocal relationship is based on the premise that information regarding the retail brand and the retailer's offered value is stored as a network of interrelated associations in the memory of the consumer (Barsalou 1991; Nelson et al. 1993).The retrieval of information occurs through the spread of activation, thus the linkages between concepts can point in both directions (Anderson 1983; Malle and Horowitz 1995; Puligadda et al. 2012). Furthermore it is known that the activation of a schema can lead to behavioral intentions such as loyalty (e.g., Swoboda et al. 2013a). Second, the study analyzes whether the reciprocity between perceived value and retail brand equity varies between fashion and grocery retailing when disentangling the perceived value construct into its two dimensions that are utilitarian and hedonic value. The underlying rationale for differences between the two sectors is grounded in goal-theoretical/motivational approaches. Consumers shopping goals provide the framework in which information is organized in an associative network and determine the relative salience of retailer's attributes for consumers within decision situations (Puccinelli et al. 2009). Furthermore, we know that consumer decision patterns differ between retail sectors (e.g., Schenk et al. 2007).

The analysis is based on two longitudinal studies in fashion retailing (N = 241) and grocery retailing (N = 240). The application of the longitudinal design addresses the shortcomings of cross-sectional designs with regard to the analysis of reciprocal effects such as equilibrium and stationary (Kline 2011, p. 108-109). The survey was conducted in a mid-sized German city in three waves and over a time period of nine months with the same respondents using standardized in-home interviews. Prior to the study the respondents were first asked to list fashion or grocery retailers they know and to name four retailers from which they frequently purchase either textiles or groceries. Out of these four retailers one retailer was selected on random for the respondents to evaluate in the subsequent waves. The obtained longitudinal data were analyzed using a cross-lagged autoregressive structural design.

The results of Study 2 suggest different conclusions for unidirectional versus reciprocal paths and indicate unequal mechanisms with regard to how retailers brand and utilitarian value or hedonic value affect consumers' conative loyalty in both retail sectors. For example, based on the reciprocal relationship of perceived value and retail brand equity the total effect on loyalty is stronger for retail brand equity than for perceived value in both retail sectors. When disentangling the value concept, surprisingly the effects of hedonic and utilitarian value on retail brand equity in fashion retailing are almost equal, whereas the effect of retail brand equity on value is stronger for hedonic value. Retail man-

agers need to strategically focus on both, offered value and brand strength, but they need to particularly understand the interdependencies between them.

3.3. Interdependent Effects of Multichannel Retailers' Brand Beliefs and Retail Brand Equity

Understanding consumer behavior across channels is the fundamental basis for implementing successful multichannel retailing strategies. Thus, the main research objective of Study 3 is to analyze the interdependent effects of offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity and loyalty within typical multichannel retail structures. These interdependencies are analyzed in grocery retailing and fashion retailing and by taking retailers' varying offline and online performances into account. In detail, Study 3 focuses on fashion and grocery retailing and examines the crosswise relationship between offline brand beliefs, online brand beliefs, offline retail brand equity and online retail brand equity. In addition the total effects of offline and online brand beliefs on loyalty are observed. Furthermore the effects are contrasted against for retailers with a strong (vs. weak) offline (online) channel performance. Finally the study illuminates the reciprocal relationship between offline and online retail brand equity and the effects of both on loyalty.

The motivation for this view is twofold. First, from a theoretical perspective this study refers to the theory of reasoned action and the summative model of attitudes (Ajzen and Fishbein 1980; Fishbein and Ajzen 1975) as well as the theory of cognitive dissonance (Festinger 1957; Festinger and Carlsmith 1959). Both theoretical streams foster the conceptualization of crosswise and reciprocal effects between consumer perceptions of multichannel retail systems. Second, from a managerial perspective valuable and novel insights are provided that show multichannel retail managers the necessity of taking interdependencies into account when developing successful multichannel retail systems.

In detail, the following research questions are examined:

- Do offline brand beliefs and online brand beliefs crosswise determine offline retail brand equity and online retail brand equity loyalty to a retailer and how do the paths to loyalty vary when focusing on retail sectors and differently performing retailers?
- Do reciprocal relationships between offline retail brand equity and online retail brand equity exist and how do they influence conative loyalty in the two retail sectors?

To provide insight into this issue, the conceptual framework of Study 3 refers to two well-established theories. According to the theory of reasoned action the consumers brand beliefs (offline and online) influence the building of an attitude towards an object (e.g., retailer) such as offline retail brand equity or online retail brand equity. Interdependent relations are likely, because salient beliefs that those are experienced most recently and/or frequently and can be attributed to either the offline or the online channel (Ajzen et al. 1995; Fishbein and Ajzen 1975). However effects may vary between retail sectors and for retailers with differing offline (online) channel performances. In line with the theory of cognitive consonance (Festinger 1957; Festinger and Carlsmith 1959) the mechanism behind these differences is that consumers that hold perceptions of prior weak (strong) channel performances in memory strive to achieve internal consistency among their retail brand associations and may therefore adapt their perceptions or their attitudes when necessary to achieve cognitive consonance.

The analysis is based on two longitudinal studies that were conducted in fashion retailing (N = 271) and grocery retailing (N = 274). Prior to the studies strong and weak offline and online performing retailers were selected using pre-tests. The selected retailers were then used in the main survey. As in Study 2, the application of the longitudinal design facilitates the analysis of reciprocal effects and addresses the shortcomings of cross-sectional designs such as equilibrium and stationary (Kline 2011, p. 108-109). The survey was conducted in a mid-sized German city in three waves and over a time period of nine months with the same respondents by the use of standardized in-home interviews. The obtained data were analyzed using two non-recursive cross-sectional designs and two cross-lagged autoregressive structural designs.

The results contribute to current knowledge in several ways and offer novel insights. It is shown that former brick-and-mortar retailers are able to significantly increase consumers' loyalty to the firm by primarily designing offline (secondary online) attributes and beliefs. Surprisingly, this holds true for retailers in the most important retail sectors—i.e., stronger effects in fashion vs. grocery retailing—as well as for retailers with weak vs. strong prior brand performance. However, indirect effects indicate that online brand beliefs and offline retail brand equity are the central strategic levers for prior strong (vs. weak) retailers. Reciprocal relationships between online and offline retail brands underline important channel interdependencies. For multichannel retail managers the necessity to pay attention to the scientific evidence on crosswise and reciprocal effects when designing multichannel retail systems determine, for example, how synergies can be realized or how resources should be allocated in order to bond consumers.

4. Further Remarks

The three studies this doctoral thesis consists of explore the aforementioned research issues with regards to retail brand equity. Thereby, each study is clearly organized according to the following principle:

- Introduction
- Conceptual Framework and Development of Hypotheses
- Empirical Study, including Sample Design, Measurement, Method
- Results
- Discussion and Conclusions with Theoretical and Managerial Implications
- Limitations and Directions for Further Research

This structure is given, irrespective of the applied theory. Study 1 is primarily based on theories that deal with associations in consumer memory, on motivational theories and on empirical studies. Study 2 employs schema theoretical and goal/motivational theoretical reasoning, whereas the conceptual framework of Study 3 rests on the theory of reasoned action, the summative model of attitudes and the theory of cognitive dissonance. Besides, the structure is also irrespective of the applied methodology, because even though each study focuses on retail brand equity, the specific research questions require an individual approach. Study 1 applies multi-group structural equation modelling to compare consumer evaluations on retailers from four retail sectors: grocery retailing, fashion retailing, consumer electronics retailing, and DIY-retailing. Study 2 applies autoregressive cross-lagged structural equation modelling to analyze longitudinal consumer evaluations of stationary grocery retailers and fashion retailers. Finally, in Study 3 consumer data on multichannel grocery and fashion retailers is analyzed first with non-recursive crosswise structural equation modelling and second with autoregressive cross-lagged structural equation modelling.

This doctoral thesis is organized as follows: After the specific research questions are illuminated in the three studies (Chapter B to Chapter D) a summery is given with regard to the general research questions in Chapter E. Finally, the thesis concludes with an outline of further research objectives.

B. Study 1: Sector-specific Antecedents of Retail Brand Equity

1. Introduction

Consumer-based retail brand equity that refers to the consumers' overall assessment of a retailer's channels as strong, attractive, and unique brands (Hartman and Spiro 2005; Keller 1993), is known to affect retailer performance and consumer behavior (e.g., Baldauf et al. 2009; Grewal et al. 2009). Following the longtime practice of brand manufacturers, retail firms increasingly seek strategies to manage their retail brand equity because having strong brands is of paramount importance (e.g., when attracting consumers or recruiting employees). Target and Walmart, for example, consider their retail brand to be a critical element of their business strategies, and they continue investing in their stores and retail attributes with the goal of delivering on customer propositions (Target 2014; Walmart 2015). In other sectors, Best Buy or Kingfisher, for example, also focus on their retail brands and regard them as valuable resources (Planet Retail 2015). Because retail brand associations in consumers' memory, particularly the attributes that affect retail brand equity (e.g., assortment, price), are likely to vary between retail sectors, we study the effects of retail attributes on retail brand equity and the effects of retail brand equity on consumers' intentional loyalty to retailers in important sectors. Intentional loyalty, which refers to consumers' readiness to repurchase at a retailer or to recommend it to others (Johnson et al. 2006), is examined because it is a well-researched outcome variable that facilitates the evaluation of our observations, because it is related to retail brand equity (e.g., Jinfeng and Zhilong 2009), and because it remains worthy of further research (Puccinelli et al. 2009).

Scholars often study the role of retail attributes for store or retailer image (e.g., Martineau 1958; Mazursky and Jacoby 1986; Pan and Zinkhan 2006) and less frequently for retail brand equity (e.g., Beristain and Zorrilla 2011; Yoo et al. 2000). Most scholars have analyzed a single retail sector, sometimes claiming that their results can be generalized to the retail industry as a whole (see Figure B—1). Jinfeng and Zhilong (2009) were among the first scholars to provide evidence of retail brand equity in grocery retailing, the sector that has received the most research attention (e.g., Allaway et al. 2011; Beristain and Zorrilla 2011; Swoboda et al. 2014), followed by studies of fashion retailing (mostly on image, Arnett et al. 2003; Berry 1969; Liljander et al. 2009). Studies in other

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sectors are scarce (e.g., price and service effects on retail brand equity in electronics retailing, Darian et al. 2005; Kukar-Kinney et al. 2007). Swoboda et al. (2007), among few others, have compared various retail sectors in showing, for example, that retail attributes have different effects on retail brand equity. Nevertheless, the authors did not systematically conceptualize the role of retail attributes in the building of retail brand equity across retail sectors. Thus, research on retail brand equity across retail sectors is rare and limited. In particular, we do not know whether retail attributes are equally relevant for strong brand associations across retail sectors and which specific retail attributes most strongly predict retail brand equity in each retail sector. Thus, a broader, theoretically based conceptualization of retail brand equity predictors and effects is compelling. We aim to advance the literature by providing a more nuanced account of retail sectors as moderators in analyzing whether perceived retail attributes predict retail brand equity and, in particular, which specific attributes are the strongest predictors of retail brand equity across retail sectors. Important decisions on store choice, for example, are related to retail attribute associations that also influence brand associations. These associations theorized in cognitive and motivational theories (as shopping behavior is known to vary across retail sectors, Schenk et al. 2007) constitute the framework of this study because these two perspectives offer a strong theoretical foundation to study retail brand equity across sectors.

We seek to offer important contributions to the extant literature by extending the knowledge of retail brands across retail sectors, a contribution that is important because retail brand equity, particularly the knowledge of which retail attributes are relevant to the building of a strong, attractive, and unique retail brand, is advantageous for retailers. In particular, we contextualize the attribute–retail brand equity–loyalty relationship by investigating the grocery, fashion, electronics, and DIY retail sectors, which are the most important retail sectors in most countries and are known to show different patterns in consumers' shopping behavior (e.g., Planet Retail 2015). A comparison of these sectors contributes to the extant research, which has not yet systematically analyzed the role of sectoral differences. For retailers that work in heterogeneous contexts it should be clear which attributes affect retail brand equity most in each retail sector to maximize the returns on investments in brand management. For diversified retailers that operate in several retail sectors like Kroger, Metro Group, or the Swiss Coop this study contributes to strategically quite complex decisions on retail brand equity.

	Allaway et al. (2011)	Arnett et al. (2003)	Baker et al. (1994)	Beristain and Zorrilla (2011)	Berry (1969)	Birtwistle et al. (1999)	Cornelius et al. (2010)	Das (2015)	Delgado-Ballester et al. (2014)	Diallo (2012)	El Hedhli and Chebat (2009)	Gil-Saura et al. (2013)	Hartman and Spiro (2005)	Herstein et al. (2013)	Hsu et al. (2010)	Jara and Cliquet (2012)	Jinfeng and Zhilong (2009)	Kremer and Viot (2012)	Kunkel and Berry (1968)	Liljander et al. (2009)	Lindquist (1974)	Martineau (1958)	Mazursky and Jacoby (1986)	Merrilees et al. (2007)	Pan and Zinkhan (2006)	Pappu and Quester (2006)	Pappu and Quester (2008)	Rich and Portis (1964)	Schiffman et al. (1977)	Steenkamp and Wedel (1991)	Swoboda et al. (2014)	Swoboda et al. (2007)	Yoo et al. (2000)	Zentes et al. (2008)	Zimmer and Golden (1988)
Study on																																		
▪ Store/retailer image			x	x	x	x	x		x	x	x			x	x			x	x	x	x	x	x	x	x			x	x	x			x	x
▪ Retail brand equity[1]	x	x		x				x			x	x	x			x	x									x	x				x	x	x	
Retail sector	1	2	6	1	5	2	2,3,6	5	1	1	5	1,2,6	-	2	1	1	1		-	2	-	-	5	2	-	2/5	2	5	3/5	1	1	1-4,6	2-3	1-3,6	5
Study type	e	e	e	e	e	e	e	e	e	e	e	e	c	e	e	e	e	e	c	e	c	c	e	e	m	e	e	e	e	e	e	e	e	e
Retail attributes																										-	-						-	
▪ Assortment[2]	x	x	x	x	x	x		x	x	x	x	x		x	x	x		x	x	x	x		x	x	x			x	x	x	x	x	x	x
▪ Price[3]	x	x		x	x	x		x	x			x		x		x	x	x	x		x		x	x	x			x	x	x	x	x		x
▪ Layout[4]	x		x	x	x	x		x	x	x	x	x			x	x	x		x	x	x	x	x	x	x			x		x	x	x		
▪ Communication[5]					x		x	x				x		x	x				x		x	x		x						x	x	x		
▪ Service[6]	x	x	x	x	x	x			x	x	x	x		x	x	x	x	x	x		x	x	x		x			x	x		x	x		x
▪ Location[7]	x				x				x		x				x		x		x		x		x		x			x	x		x			x
▪ Guarantee/refund policy						x																	x						x					
▪ After sales efforts[8]	x																				x													
▪ Community involvement	x			x																														
▪ Institutional factors																	x				x													
▪ Symbols														x								x												
▪ Personal and social aspect														x																				
▪ Opening hours									x																									
▪ Clientele																					x													

Figure B—1: Literature review on retail brand equity and retail image

Source: Own creation.

The remainder of this study is structured as follows. Drawing from theory and literature on consumer behavior in retail sectors, we derive hypotheses on the sector-specific role of retail attributes for retail brand equity and on the retail brand equity-loyalty link, and we test them with data obtained from 2,112 face-to-face interviews. After presenting the results, we discuss the implications of the study and avenues for further research.

2. Conceptual Framework and Hypothesis Development

In contrast to retail image, which is conceptualized based on retail attributes (e.g., Martineau 1958, already identified layout, communication, and personnel as important image dimensions), consumer-based retail brand equity represents information about a retailer in consumers' memory, that is their knowledge and associations of a retailer as a strong, attractive, and unique brand (Hartman and Spiro 2005; Swoboda et al. 2013a). Retail brand equity is a latent construct (sometimes resembling a gestalt view of retailers as brands, Keaveney and Hunt 1992) that is—similar to manufacturers' brands—affected by marketing-mix elements that are perceived retail attributes and that in turns affects consumers' loyalty behavior. In the conceptual model in Figure B—2, five retail attributes are included for several reasons: despite the lack of common agreement on the retail attributes that are relevant to retail image and brand research, the attributes of assortment, price, layout, communication, and service are frequently used in extant studies (see Figure B—1). These attributes are important for both stationary retailers and multichannel retailers in all four retail sectors, and they can be included in a sector comparison.

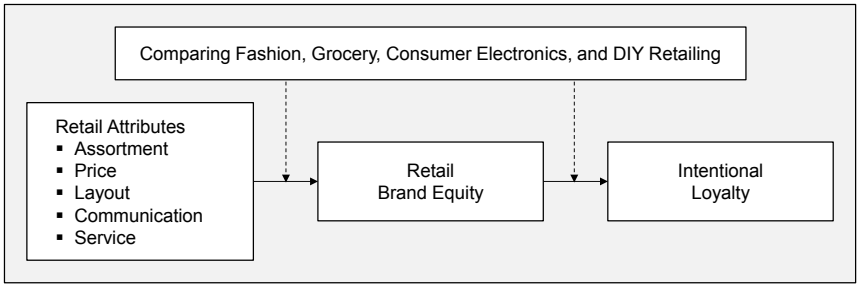

Figure B—2: Conceptual framework

Source: Own creation.

To address our research aims, we primarily build on theories that regard retail brands and retail attributes as associations in consumers' memory (Hartman and Spiro 2005; Keller 1993; Krishnan 1996), on motivational theories and on

empirical studies to better understand the different contexts of retail sectors concerning retail brand building and effects.

Many scholars understand retail attributes as firm signals and suggest that customers perceive specific stimuli as information cues to form attitudes toward a retailer (e.g., Jinfeng and Zhilong 2009). Particularly under highly uncertain conditions, customers search for more information before making a decision to minimize their losses, for example, whereas retailers provide customers with information using signals that influence consumer attitudes, which in turn affect their shopping decisions (e.g., to be loyal, Allaway et al. 2011). Consumers, especially loyal consumers, possess information about a retailer that is learned and stored in memory as a network of dependent associations (e.g., Krishnan 1996). Scholars tend to regard retail brand equity as a brand node in customers' memory that is linked to various associations and other nodes, such as retail attributes (e.g., Puligadda et al. 2012). The strength and number of links between nodes can be explained by the degree of activation (e.g., information retrieval, Anderson 1983; Malle and Horowitz 1995). The behavioral importance of these associations arises as consumers access information in memory about retail brands in decision situations. Following this reasoning, scholars highlight the effects of retail brand equity on consumer loyalty (e.g., Swoboda et al. 2013b). Thus, two mechanisms theoretically explain the attribute–retail brand equity–loyalty relationship: the perceived stimuli of a retailer and associations learned in different contexts and stored in memory.

The predictors and effects of retail brand equity are likely to differ between retail sectors. Consumers' dominant shopping motivations in retail sectors (e.g., utilitarian vs. hedonistic motives) and varying purchasing frequency (e.g., twice a weak vs. every second month on average in grocery vs. fashion retailing) probably affect the use of stimuli and retrieval-based retailer associations in decision situations (e.g., Arnold and Reynolds 2012; Ghemawat and Nueno 2003; Melis et al. 2015). Shopping goal theory, for example, constitutes a framework in which shopping goals determine the relative salience of dominant retail attributes for consumers (Puccinelli et al. 2009) by either supporting or inhibiting the links between shopping goals and the means to achieve them (Kruglanski et al. 2002). Goals motivate consumers to search for relevant information and constitute the hub of an information network (Barsalou 1991), including the appropriate paths to achieve specific goals. For example, most grocery shoppers primarily satisfy supply-oriented goals by relying on functional information such as assortment and price, and they are likely to evaluate retailer brands on this basis. In goal-organized associative networks, consumers dominantly access those retail attributes that relate to the shopping goals that they are pursuing. Attributes that are linked to both retail brand equity and

consumer goals are activated by motivated information retrieval. Loyal consumers, for example, have well-linked, organized information, and because of their goal-driven behavior, they use the best available information based on their experiences (Puccinelli et al. 2009). Thus, the theoretical rationales for sector-specific predictors and effects of retail brand equity may be linked to consumers' dominant motivations in each sector, which is the focus in this study—with the recognition that other less dominant motivations exist—and which affect consumers' dominant use of specific stimuli and associations in a decision situation.

2.1. Specific Attributes and Retail Brand Equity in Retail Sectors

In this section, we examine which specific attributes most strongly affect retail brand equity in the four retail sectors by referring to theoretical rationales and empirical studies and by characterizing each retail sector first to better understand the different contexts. Differences across retail sectors are then hypothesized. Using identical conceptualizations for all retail sectors and multi-group analysis facilitates comparisons in generating and testing the hypotheses.

Grocery retailing. The grocery retail sector is highly concentrated in most developed countries; in fact, the top five retailers hold more than 70% of the market share, and retailers face strong intra- and inter-format competition by focusing on efficient supply chain processes and primarily relying on assortments and prices to position themselves as brands in the minds of consumers (e.g., Cleeren et al. 2010). Consumers primarily shop for groceries motivated by supply-oriented goals when satisfying their day-to-day needs. They choose grocery retailers primarily based on utilitarian attributes such as assortment and price—along with location, which is not analyzed in this study— because the motivation for consumer behavior is largely task oriented (Kaltcheva and Weitz 2006). Thus, consumer-based retail brand equity should largely be based on these two retail attributes, additionally because grocery retailers differentiate themselves in spatial competition based on these attributes, such as hypermarkets vs. discounters with large vs. narrow assortments and high-low vs. everyday low pricing strategies (Cleeren et al. 2010; Solgaard and Hansen 2003). Other retail attributes are expected to be less relevant to retail brand equity. Although some scholars have identified service as an important attribute (e.g., Gómez et al. 2004; Jinfeng and Zhilong 2009; Solgaard and Hansen 2003) and although we observe increased communication in grocery retailing (e.g., TV and e-commerce information in addition to direct mailings), we expect a weaker role of service and communication for retail brand equity because, for example, an increase in competitive advertising inferences is said to de-

crease brand recall and attitudes (Danaher et al. 2008). Similar, store layout has been recognized as a less important driver of retail brand equity in grocery retailing (Allaway et al. 2011).

Theoretically, given their generally supply-oriented shopping motivation, consumers are likely to primarily perceive assortment and price as stimuli and to retrieve these two attributes the most in grocery shopping. Strong, attractive, and unique grocery retail brands are likely to be linked to assortment and price associations, whereas the links to service, communication, and layout associations should be weaker. Thus, consumers' dominant shopping motivations and their learned retrieval-based associations lead to the following hypothesis:

H1. In grocery retailing, (a) assortment and (b) price perceptions affect retail brand equity most strongly.

Fashion retailing. The fashion retail sector is highly trend driven and less concentrated, with 50 or more firms often accounting for approximately two-thirds of sector sales (Planet Retail 2015). Vertical firms, apparel and footwear specialists, warehouses, and discounters engage in competition. Large firms offer wide selections of clothing and have advantages in purchasing, distribution, and marketing, while small stores compete by offering unique assortments, targeting specific segments, or serving a local market and by providing superior service. Thus, in fashion retailing, a wide range of attributes can be combined to build a strong, attractive, and unique retail brand and to customize offers to target groups (e.g., Birtwistle et al. 1999; Moore and Fairhurst 2003). However, most fashion consumers pursue hedonic shopping goals and tend to associate retail brands with such goals. Highly arousing stores and attractive, broad, unique, or frequently changing assortments are believed to be of particular importance for fashion retailers' images (e.g., Foster and McLelland 2015; Kaltcheva and Weitz 2006). Because unique assortments of retailers (e.g., different product brands) hinder consumers' price comparisons to a certain degree, price perceptions might be less important as an antecedent of retail brand equity. However, because price is believed to affect fashion retailers' images (e.g., Herstein et al. 2013), we expect it to be an important predictor of retail brand equity as well. Furthermore, communication is expected to be a less important driver of retail brand equity, whereas service might be of particular importance for retail brand equity in fashion retailing because consumers require a certain level of support during such shopping experiences (e.g., Kumar and Kim 2014).

Conceptually, the fashion sector might be the most heterogeneous retail sector, in which diverse offers are likely to affect retail brands (even online, e.g., Kwon and Lennon 2009a). Nevertheless, based on most fashion consumers' dominant shopping motives and information retrieval, we expect retail brand equity to be strongly linked to assortment, price, store layout, and service because most consumers seek those stimuli and base their brand associations on them. We therefore hypothesize the following:

H2. In fashion retailing, (a) assortment (b) price, (c) layout, and (d) service perceptions affect retail brand equity most strongly.

Electronics retailing. The electronics retail sector is driven by new technologies, strong price competition, and continuously declining prices. As the largest consumer electronics retailers, big-box stores compete with broad-based retailers and warehouses, e-commerce specialists and small specialized stores that sell consumer electronics or white goods, for example, and that offer superior customer service (Planet Retail 2015). Consumer shopping motives and retail offers are determined by rapid innovation rates and short life cycles of electronic products whose prices facilitate easy comparison. We therefore believe that price will be one of the main drivers of retail brand equity, while assortment will contribute less to retail brand equity (Darian et al. 2005; Kukar-Kinney et al. 2007). Because of a high percentage of complex products, relative lower purchase frequency and greater involvement of shoppers, the requirement for product information seems obvious. Thus, assistance from sales personnel, the possibility of after-sales services (e.g., Ballantine et al. 2010; Darian et al. 2005), and further communication through various channels such as mass media, websites, or communities should be particularly important to the building of a strong retail brand. Because store layout or atmosphere scarcely corresponds to the shopping goals of most consumers in this sector, we believe that such stimuli and associations have less effect on retail brand equity (Carpenter and Balija 2010).

Given the specific retail sector context and the rationales of dominant consumer shopping motives, strong, attractive, and unique electronics retail brands are likely to be linked to price, service and communication associations, whereas the links to assortment and layout associations should be weaker. We hypothesize as follows:

H3. In electronics retailing, (a) price, (b) communication, and (c) service perceptions affect retail brand equity most strongly.

DIY retailing. The DIY retail sector is highly concentrated in most countries, as it is controlled by a relative small number of retailers that offer similar retail formats and that compete with efficient purchase and supply chain processes and attractive assortments (Williams 2004, 2008). DIY shoppers have specific motivations because they often undertake DIY projects with higher investments and simultaneously seek a wider range of available products. Following scholars who emphasize assortment as an important differentiation criterion in DIY (Van Kenhove et al. 1999; Vogel et al. 2008), we assume that assortment is the most important attribute for retail brand equity. Price is expected to be less important, and previous studies show contradictory results regarding the strong or weak importance of price in relation to consumers' shopping goals. Consumers who purchase DIY products for difficult jobs, for example, are less price-sensitive than consumers who buy large quantities (e.g., Van Kenhove et al. 1999). Furthermore, shopping goals in DIY retailing appear to be less linked to price consciousness because of the higher incomes of consumers who renovate houses and who more strongly rely on assortment quality. Because of the relatively lower purchase frequency in this sector and the complex nature of DIY products, most consumers seek the specific services that they need in their situation (Foster 2004; Sands et al. 2009). We also assume that layout perceptions may emerge as a main predictor of retail brand equity because layout contributes to visually depicting DIY projects and thus may lead consumers to alter their planned projects and to choose alternative retailers (Wolf and McQuitty 2011). Communication is expected to affect retail brand equity less because consumers—because of both the nature of DIY products and their shopping motives—more strongly rely on service or interpersonal recommendations than on mass communication.

Referring to the abovementioned consumer shopping motives in DIY retailing and early empirical findings, we expect assortment, service, and layout stimuli and associations to be particularly linked to retail brand associations, whereas the links to price and communication associations should be less important. Thus, we hypothesize as follows:

H4. In DIY retailing, (a) assortment, (b) layout, and (c) service perceptions affect retail brand equity most strongly.

Comparing retail sectors. As illustrated, retail sectors vary in the specific combinations of retail attributes that are most applicable—especially with respect to their importance in attracting and retaining consumers. For example, in grocery retailing, retailers primarily emphasize assortment and price, whereas in fashion retailing, retailers focus on assortment and layout (e.g., Foster and

McLelland 2015; Kaltcheva and Weitz 2006). We have linked these differences to higher (vs. lower) probabilities with which consumers are confronted with the particular retailer attribute and that consumers' retrieval processes will involve the dominant attributes when choosing retail brands as well as consumers' dominant motives when shopping for groceries, textiles, electronics, and DIY products based on their different shopping goals and different paths to achieve these goals stored in memory (e.g., Schenk et al. 2007). Because we expect retail attributes (i.e., assortment, price, layout, communication, and service) to have varying levels of relevance to retail brand equity across retail sectors and following Swoboda et al. (2007), we hypothesize as follows:

H5. The importance of retail attributes for retail brand equity differs across retail sectors.

2.2. Retail Brand Equity Effects in Retail Sectors

Retail brand equity is expected to affect consumer loyalty across retail sectors. We analyze intentional loyalty (Johnson et al., 2006) because it is a predictor of shopping frequency and expenses (e.g., Chiou and Droge 2006; Pan and Zinkhan 2006), because it is a key indicator of competitive advantage (e.g., Deng et al. 2010), and because it aids in assessing our observations.

As mentioned previously, the importance of brand associations theoretically arises because such associations are accessed by loyal consumers in particular; information is activated in memory in decision situations that are highly important and strong, and that have many links to other information. As a strong and important overall assessment indicator of a retailer, consumer-based retail brand equity is believed to have considerable effects on consumer loyalty (e.g., Grewal et al. 2009; Swoboda et al. 2013a). In goal-motivated shopping behavior across retail sectors, loyal consumers access information based on their experience and rely on the best available information in associative networks, such as considering the strength of a brand when making a store choice. We therefore posit a stable role of retail brand equity for intentional loyalty across retail sectors although the importance of retail brand equity is likely to differ in retail sectors because, for example, both retail brands and product brands are particularly important for fashion shoppers, who generally access brand associations in memory more often than grocery shoppers do. Even scholars analyzing a single retail sector underline the strong effects of retail brand equity on loyalty intentions (in fashion: Arnett et al. 2003; in electronics: Darian et al. 2005; in grocery: Jinfeng and Zhilong 2009; and in DIY: Vogel et al. 2008). We therefore expect a strong retail brand equity–loyalty relationship across retail sectors and propose the following hypothesis:

H6. The effects of retail brand equity on consumer loyalty are stable across the grocery, fashion, electronics, and DIY retail sectors.

3. Empirical Study

3.1. Context and Sampling Method

To test our hypotheses, we conducted four studies in the retail sectors in a medium-sized city in Germany. As mentioned previously, the grocery, fashion, electronics, and DIY sectors were chosen because they are the largest retail sectors (shares of 48% in grocery and 8-11% each in fashion, electronics, and DIY, out of the total retail market volume of approximately 490 bn €, Destatis 2015), because consumer behavior differs among these sectors, and because they enable the results to be generalized to the retail industry to a certain extent. The particular city was chosen for the field studies because it is a typical medium-sized city, with approximately 250,000 inhabitants in the region, and because of the local presence of nearly all well-known retailers in the concentrated grocery, electronics, and DIY retailing sectors as well as a strong concentration of fashion retailing in the city center. No other medium-sized cities are within a one-hour driving distance, which enables a certain level of control of consumer streams of inhabitants in the analyzed city. However, because we observe one city and one competitive context, our results are limited in this respect.

To obtain the consumer samples, we used a cross-sectional design and randomly selected inhabitants at the city center equally throughout each day and over a period of one week for each study. We calculated the appropriate sample size following Bartlett et al. (2001). For the chosen values of the confidence level (97.5%), the estimate of variance (.50), and the acceptable margin of error (.05), the appropriate sample size is 502. We chose to employ a quota sampling procedure for 553 consumers in each study—adding 10% to account for potential item or unit non-response—based on age and gender according to the national census. Quota sampling facilitates sector comparison but limits the results because it does not consider sector-specific target groups (e.g., women shop for textiles more often than they shop for DIY products). Every third person who passed the trained, experienced interviewers and fulfilled the sample quota was asked to participate in the study (following Orth and Holancova 2004). To further reduce possible selection bias, every interviewer questioned equal numbers of inhabitants by using a standardized questionnaire (Patterson and Smith 2003); the approximate interview duration was 15 minutes. To further reduce social desirability bias, the questionnaire was ad-

ministered anonymously, and the respondents were assured of the confidential treatment of their responses for scientific purposes only (King and Bruner 2000). Each respondent was first asked to name as many as three retailers that he/she knew and frequently shopped at in the observed sector. The interviewers then randomly selected one of the previously mentioned retailers for the respondents to evaluate during the course of the interview. In total, seven grocery, twenty-four fashion, five electronics, and four DIY retail chains were evaluated, which may be regarded as representative of the retail structures in these sectors.

N = 2,112	Realized sample (in %)												Planned quota sample (in %)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age groups	*Grocery (n = 516)*			*Fashion (n = 521)*			*Electronics (n = 542)*			*DIY (n = 533)*					
Age 15-24	9.5	7.6	17.1	8.8	12.9	21.7	9.4	12.2	21.6	8.4	11.4	19.9	9.4	10.6	20.0
Age 25-34	13.8	16.7	30.4	8.4	11.5	11.5	11.8	10.1	22.0	14.1	10.3	24.4	12.0	11.8	23.8
Age 35-44	4.8	7.9	12.8	7.3	7.1	14.4	8.5	6.8	15.3	9.8	8.4	18.2	7.8	8.2	16.0
Age 45-54	8.5	7.0	15.5	9.8	7.5	17.3	8.1	5.9	14.0	9.8	6.8	16.5	8.4	7.1	15.5
Age 55-64	6.6	6.0	12.6	5.4	6.1	11.5	7.9	6.1	14.0	8.6	5.1	13.7	6.5	6.4	12.9
Age over 64	5.2	6.4	11.6	6.7	8.4	15.2	6.8	6.3	13.1	4.5	2.8	7.3	5.6	6.2	11.8
Total	48.4	51.6	100.0	46.4	53.6	100.0	52.6	47.4	100.0	55.2	44.8	100.0	49.7	50.3	100.0

Table B-1: Sample characteristics

Source: Own creation.

Against this background, we collected data from a total of 2,212 respondents. After the removal of 44 incomplete questionnaires and after the defection of outliers according to the Mahalanobis distance, 2,112 cases remained. The realized sample distribution largely satisfied the planned sample quota (see Table B-1). Tests for normality showed no deviations from univariate and multivariate normality; hence, the maximum-likelihood estimator was chosen to test the hypotheses.

3.2. Measurement

For the measurement of variables, we first considered the hierarchy of effects by applying an appropriate questionnaire design (e.g., randomizing the question order), and we also relied on previous studies using seven-point Likert-type scales (ranging from 1 for strongly disagree to 7 for strongly agree, see Table B-2). We measured intentional loyalty using three adapted items (Bouzaabia et al. 2013; Zeithaml et al. 1996) and measured retail brand equity using four items according to Verhoef et al. (2007a). This measure was chosen because it has been specifically developed for the retail context and has been used in most retail studies of retail brand equity and because it is based on common, but different consumer-based brand equity measures in other

sectors (e.g., Keller 1993, 2003). As mentioned previously, because different inventories of retail attributes and items for measuring retail attributes have been provided in the literature, we chose to measure five retail attributes, and for each attribute, we used four items (adapted from extant studies). The retail attributes were selected through the use of two focus groups (n = 5) that involved a discussion of the importance of the most common retail attributes based on the literature; the scales were then chosen for an additional pretest. The selected scales were then pre-tested quantitatively (n = 120 for each of the four retail sectors based on quota sampling), and the results yielded satisfactory values for reliability and validity. However, the study is limited in this respect because the chosen items for each attribute are likely to affect the results and because we are unable to test alternative measures.

Item	MV/Std.	FL	KMO	ItTC	α	CR	λ
Assortment - *Adapted from Chowdhury et al. (1998); Jinfeng and Zhilong (2009)*							
ASS1: The assortment at _ has very good quality.	5.7/1.0	.777		.626			.578
ASS2: _ I can find all the products I need very easily.	5.1/1.5	.631	.741	.522	.736	.730	.575
ASS3: The products are always available at _.	5.4/1.3	.598		.513			.705
ASS4: _ offers plenty of own brands.	5.3/1.2	.630		.512			.761
Price - *Adapted from Grewal et al. (1998a); Yoo et al. (2000)*							
PRI1: The prices at _ are always reasonable.	5.7/1.0	.779		.692			.807
PRI2: _ offers products at favorable prices over a long period.	5.2/1.3	.829	.805	.748	.842	.847	.801
PRI3: The special offers by _ are very attractive.	5.5/1.0	.782		.692			.706
PRI4: The price/performance ratio at _ is very good.	5.0/1.5	.709		.656			.785
Layout - *Adapted from Chowdhury et al. (1998); Baker et al. (1994)*							
LAY1: I like the store layout of _ very much.	5.0/1.3	.648		.582			.743
LAY2: I can find my way around easily at _.	5.6/1.0	.808	.730	.661	.783	.790	.705
LAY3: The shopping atmosphere at _ is very pleasant.	5.5/1.2	.747		.607			.697
LAY4: I feel comfortable when shopping at _.	5.5/1.3	.590		.533			.656
Communication - *Adapted from Hansen and Deutscher (1977); Yoo et al. (2000)*							
COM1: _ has excellent advertising.	4.8/1.5	.845		.762			.860
COM2: The advertising by _ appeals to me.	4.6/1.7	.813	.782	.753	.871	.868	.780
COM3: The communication by _ is very informative.	4.3/1.6	.811		.729			.845
COM4: The communication by _ is helpful.	4.6/1.8	.719		.670			.692
Service - *Adapted from Chowdhury et al. (1998); Jara and Cliquet (2012)*							
SER1: The service at _ is very good.	5.0/1.4	.887		.785			.901
SER2: The employees at _ are very friendly and honest.	5.1/1.4	.906	.795	.804	.862	.867	.910
SER3: The employees at _ are very competent.	4.6/1.5	.847		.775			.832
SER4: Employees are always available at _.	4.7/1.6	.532		.509			.525
Retail brand equity - *Verhoef et al. (2007a)*							
RBE1: _ is a strong brand.	4.1/1.5	.716		.616			.703
RBE2: _ is a well-known brand.	4.3/1.6	.678	.787	.588	.793	.790	.638
RBE3: _ is an attractive brand.	4.8/1.3	.786		.668			.812
RBE4: _ is a unique brand.	4.5/1.6	.638		.554			.653
Loyalty - *Adapted from Bouzaabia et al. (2013); Zeithaml et al. (1996)*							
LOY1: I consider __ my first choice.	5.5/1.0	.921		.678			.883
LOY2: I will shop more at _ in the next few months.	5.6/1.2	.660	.635	.556	.741	.755	.701
LOY3: I encourage friends and relatives to do business with _.	5.5/1.1	.550		.479			.544

Confirmatory model fit: CFI .923; TLI .911; RMSEA .059; SRMR .049; $\chi^2(303) = 2499.394$.
Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; MV/Std. = Mean values and standard deviations; FL = Factor loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5).

Table B-2: Reliability and validity

Source: Own creation.

Because the sample structure does not fully comply with the quota sample and because consumer behavior in retail sectors is likely to differ based on gender

(0 = male; 1 = female) and age (e.g., Meneely et al. 2009; Noble et al. 2006), we controlled for both factors as well as for familiarity with the retailer (which was measured using a single item, consumers' retailer visit frequency, Inman et al. 2009).

3.3. Method

Methodologically, we proceeded in three steps. The measurements were tested for reliability, validity, and possible biases; tests for measurement invariance between sectors were performed; and the hypotheses were tested.

To confirm the reliability of the measurements, we scrutinized the factor loadings of the respective constructs and the corrected item-to-total correlations (see Table B-2). The values exceeded the recommended thresholds. To assess construct reliability, we computed Cronbach's alpha and the level of composite reliability. These values exceeded the recommended thresholds (Bagozzi and Yi 1988; Nunnally 1978). Face validity was assessed using pretests. To determine construct validity, we examined all of the factor loadings of the confirmatory factor analysis (CFA) (Hair et al. 2014, p. 605) and the average variance extracted (AVE), which provide support for the convergent validity of the measures (Bagozzi and Yi 1988; Hair et al. 2014, p. 605). We tested for discriminant validity (see Table B-3) by assuring that all calculated AVEs exceeded the squared correlations between the constructs (Fornell and Larcker 1981). Finally, the fit values for the confirmatory model were found to be satisfactory except for the χ^2/df ratio (Hu and Bentler 1999), which is, however, highly sensitive to sample size, and we thus considered a ratio beyond the recommended threshold to be acceptable (Hair et al. 2014, p. 578).

	Constructs	1	2	3	4	5	6	7
1	Assortment	**.552**						
2	Price	*.082*	**.563**					
3	Layout	*.487*	*.076*	**.614**				
4	Communication	*.118*	*.107*	*.144*	**.573**			
5	Service	*.379*	*.025*	*.460*	.068	**.521**		
6	Retail brand equity	*.319*	*.204*	*.438*	*.176*	*.373*	**.543**	
7	Loyalty	*.494*	*.187*	*.402*	*.130*	*.288*	*.534*	**.554**

Confirmatory model fit: CFI .923; TLI .911; RMSEA .059; SRMR .049; $\chi^2(303) = 2499.394$.

Note: values in italics represent squared correlations between constructs; values in bold represent the AVE (≥.5) of the construct; Loyalty = Intentional loyalty.

Table B-3: Discriminant validity

Source: Own creation.

We attempted to reduce the probability of non-response bias in several ways. We ensured the respondents of the confidentiality of the survey, particularly emphasized the questionnaire design, and offered incentives motivating the

respondents to participate (e.g., Castiglioni et al. 2008). Because approximately 100-150 inhabitants declined to participate in each study, we compared the respondents' demographics to those of our census-based quota using a χ^2 test and did not find differences in the percentage distribution of gender and age.

	Unweighted sample CFA		Weighted sample CFA		Parameter comparison
Item	Λ	λ	Λ	λ	*t*-value
Assortment					
ASS1	1.000	.578	1.000	.580	.140
ASS2	.848	.575	.848	.577	.190
ASS3	.943	.705	.951	.707	.201
ASS4	.837	.761	.830	.763	.214
Price					
PRI1	1.000	.807	1.000	.807	.000
PRI2	.756	.801	.752	.799	-.231
PRI3	.994	.706	.994	.706	.000
PRI4	.717	.785	.722	.790	.722
Layout					
LAY1	1.000	.743	1.000	.742	-.059
LAY2	1.121	.705	1.229	.706	.104
LAY3	1.045	.697	1.043	.692	-.250
LAY4	1.079	.656	1.096	.660	.390
Communication					
COM1	1.000	.860	1.000	.851	-1.134
COM2	.943	.780	.945	.777	-.258
COM3	.973	.845	.976	.849	.667
COM4	.933	.692	.927	.683	-.592
Service					
SER1	1.000	.901	1.000	.902	.000
SER2	1.017	.910	1.017	.912	.603
SER3	.980	.832	.982	.834	.485
SER4	.673	.525	.671	.524	-.021
Retail brand equity					
RBE1	1.000	.703	1.000	.704	.218
RBE2	.911	.638	.915	.639	.125
RBE3	.995	.812	.999	.805	-1.347
RBE4	.937	.653	.944	.655	.250
Loyalty					
LOY1	1.000	.883	1.000	.884	.218
LOY2	.897	.701	.899	.699	-.258
LOY3	.640	.544	.646	.547	.354

Confirmatory model fit (unweighted sample): CFI .923; TLI .911; RMSEA .059; SRMR .049; $\chi^2(303)$ =2499.394.
Confirmatory model fit (weighted sample): CFI .920; TLI .907; RMSEA .055; SRMR .049; $\chi^2(303)$ =2240.539.
Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; MV/Std. = Mean values and standard deviations; FL = Factor loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); Λ = Unstandardized Factor Loadings; λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5).
[a] Item deleted due to a low item-to-total correlation.

Table B-4: Unweighted and weighted sample CFA comparison

Source: Own creation.

As non-response bias could have affected our data we applied weighting class adjustment (WCA) to test whether the sample-estimated values match previously determined population values. The procedure corrects for over- and underrepresentation of specific groups (Groves 2006). We choose to use post-stratification weighting, as it is known to be conditionally unbiased and as it leads to efficiency gains (Holt and Elliot 1991). In a first step we calculated the adjustment weights for each case by the use of census data. The second step consists of the estimation using the weighted instead of the unweighted val-

ues. The parameter estimates are compared by a t-test. Because the unweighted and weighted parameter estimates are not statistically distinct we conclude, that the threat of non-response bias is diminished in our data (see Table B-4).

We aimed to diminish the threat of common method variance (CMV) by using an appropriate questionnaire design and administration a priori. The design and administration included first that respondents were assured that the study was anonymous and confidential and that their answers could neither be right or wrong. Second, the question order was randomized and the study started with the measures of the dependent variables (Chang et al. 2010; Weiber and Mühlhaus 2014, p. 359-360). CMV was addressed a posteriori using a single-factor test. The model with all items loading on a single factor (CFI .536; TLI .497 RMSEA .139; SRMR .111; $\chi^2(324) = 13530.433$) showed significantly worse fit values than the proposed model did ($\Delta\chi^2 = 11031.039$ (21); $p < .001$). Furthermore, we applied the marker variable technique (Williams et al. 2010) and use job as marker variable as it is theoretically unrelated to the constructs of the model (Lindell and Whitney 2001). The technique consists of three successive phases. The results of the model comparisons (phase I) point out that the correlations between the latent constructs are not biased through the presence of the marker variable (Method-U vs. -R). The results of the following reliability decomposition (phase II) indicate that the amount of method variance, associated with the measurement of the substantive latent constructs, is less than 12 percent. As the impact of method variance in the study of Williams et al. (2010) was above 12.5 percent, we found that the present results could be decreased. The results of the sensitivity analysis (phase III) show that marker-based method variance has a very low effect on construct correlations (see Table B-5).

Phase I – Results of the model comparisons

Model	χ^2	df	CFI	TLI	RMSEA	SRMR
CFA	2573.452	323	.921	.908	.057	.048
Baseline	2631.616	331	.919	.908	.057	.050
Method-C	2617.485	330	.920	.908	.057	.049
Method-U	2311.010	304	.930	.913	.056	.042
Method-R	2323.956	325	.930	.919	.054	.043
ΔModels	$\Delta\chi^2$	Δdf	p			
Baseline with Method-C	14.131	1	***			
Method-C with Method-U	306.475	26	***			
Method-U with Method-R	12.946	21	ns			

Phase II – Reliability decomposition

	Reliability baseline model	Decomposed reliability from Method-U-Model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Assortment	.752	.687	.064	8.5%
Price	.858	.816	.050	5.8%
Layout	.794	.751	.057	7.1%
Communication	.874	.834	.048	5.5%
Service	.878	.824	.052	5.9%
Retail brand equity	.796	.752	.055	7.0%
Loyalty	.760	.693	.089	11.7%

Table to be continued

Table B-5 continued

Phase III – Sensitivity analysis					
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Assortment with price	.286	.287	.350	.374	.381
Assortment with layout	.698	.698	.671	.664	.661
Assortment with communication	.343	.343	.343	.341	.340
Assortment with service	.616	.616	.579	.571	.569
Assortment with retail brand equity	.565	.565	.568	.570	.571
Assortment with loyalty	.703	.703	.710	.710	.710
Price with layout	.275	.276	.315	.329	.333
Price with communication	.327	.327	.338	.344	.346
Price with service	.158	.159	.206	.222	.226
Price with retail brand equity	.451	.452	.469	.475	.477
Price with loyalty	.432	.432	.452	.462	.465
Layout with communication	.380	.380	.373	.370	.369
Layout with service	.678	.678	.653	.645	.643
Layout with retail brand equity	.662	.662	.652	.650	.649
Layout with loyalty	.634	.634	.624	.621	.620
Communication with service	.260	.260	.254	.250	.249
Communication with retail brand equity	.420	.420	.417	.416	.416
Communication with loyalty	.360	.537	.356	.355	.354
Service with retail brand equity	.611	.611	.613	.613	.613
Service with loyalty	.537	.537	.533	.530	.529
Retail brand equity with loyalty	.731	.731	.728	.727	.727
Job with assortment	.139	.000	.000	.000	.000
Job with price	-.060	.000	.000	.000	.000
Job with layout	.108	.000	.000	.000	.000
Job with communication	.046	.000	.000	.000	.000
Job with service	.135	.000	.000	.000	.000
Job with retail brand equity	.051	.000	.000	.000	.000
Job with loyalty	.034	.000	.000	.000	.000

Table B-5: Marker variable technique

Source: Own creation.

We tested measurement invariance using CFA to determine whether the measurements are equivalent across the four retail sectors (see Table B-6). Because full metric measurement invariance was not attained, partial metric invariance was ascertained by freely estimating some of the factor loadings (Byrne et al. 1989). The partial metric invariance model was then used in testing the hypotheses.

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (≥.90) ΔCFI (≤ .01)	TLI (≥.90) (ΔTLI)	RMSEA (≤ .08) (ΔRMSEA)
Configural invariance	3334.404/1212 (.000)	-	.928 (-)	.916 (-)	.058 (-)
Full metric invariance	3745.087/1272 (.000)	410.683 (.000)	.916 (.012)	.907 (.009)	.061 (.003)
Partial metric invariance[a]	3375.441/1245 (.000)	41.037 (.159)	.927 (.001)	.918 (.002)	.057 (.001)

[a] Factor loadings are freed for the items: ASS3, PRI1, PRI3, LAY1, LAY4, COM2, COM4, SER3, RBE3.

Table B-6: Measurement invariance

Source: Own creation.

To test the hypotheses, we conducted non-recursive multi-group structural equation modelling (SEM) using Mplus 7.3. This method facilitates simultaneous testing of the differences between the effects of retail attributes on retail

brand equity and the effects of retail brand equity on loyalty across the retail sectors. The significance of the difference in the effects between sectors was assessed using χ^2 difference tests (see Table B-7). The fit values for the multi-group structural model were satisfactory (CFI .916; TLI .904; RMSEA .056; SRMR .058; $\chi^2(1522) = 4038.217$). In addition to applying our proposed model, we also estimated rival models (for details, see Appendix E.1.1). Rival model I included direct effects of retail attributes on intentional loyalty. We analyzed this rival model because it is theoretically reasonable that both attribute and retail brand associations might directly affect loyalty. The fit of the rival model (CFI .915; TLI .906; RMSEA .055; SRMR .067; χ^2 (1496) = 4088.066) was significantly poorer than the fit of the proposed model ($\Delta\chi^2 = 49.789$ (26); $p < .01$). Using rival model II, we tested a revised relationship (i.e., the retail brand equity-attributes-loyalty relationship), and the model fit (CFI .898; TLI .884; RMSEA .061; SRMR .068; χ^2 (1528) = 4570.899) was significantly poorer than the fit of the proposed model ($\Delta\chi^2 = 532.682$ (6); $p < .001$). According to these results and to the parsimony principle, we chose to use the proposed model (Kline 2011, p. 102).

3.4. Results

In this section, the results regarding the effects of retail attributes on retail brand equity are presented for each sector based on a comparison of standardized structural coefficients (see Table B-7) followed by the results regarding the predictors and effects of retail brand equity across retail sectors by comparing unstandardized structural coefficients (e.g., Raines-Eudy 2000).

In the *grocery sector*, the results show that assortment ($\beta = .326$; $p < .001$) and price perceptions ($\beta = .279$; $p < .001$) affect retail brand equity most strongly; thus, the results support H1a and H1b. By contrast, store layout ($\beta = .192$; $p < .001$), communication ($\beta = .124$; $p < .01$) and service perceptions ($\beta = .184$; $p < .001$) are less important for retail brand equity. We conclude that assortment and price in particular are predictors of a strong, attractive, and unique retail brand in grocery retailing, and we discuss these results subsequently. In the *fashion sector*, retail brand equity is affected most by assortment perceptions ($\beta = .356$; $p < .001$) followed by price ($\beta = .337$; $p < .001$) and then layout perceptions ($\beta = .297$; $p < .01$). These results support H2a, H2b, and H2c. The importance of service (H2d) is not supported ($\beta = .121$; $p < .01$), and the importance of communication is weak ($\beta = .095$; $p < .05$). As the implications of these results extend the hypothesized relationships, they will be discussed subsequently. In the *electronics sector*, price ($\beta = .200$; $p < .001$), communication ($\beta = .309$; $p < .001$), and service ($\beta = .370$; $p < .001$) most strongly affect

retail brand equity, whereas the effects of assortment (β = .150; p < .01) and layout (β = .137; p < .001) are less important for retail brand equity. These findings support H3a, H3b and H3c. Finally, in the *DIY sector*, the results reveal that assortment (β = .287; p < .001), layout (β = .190; p < .01), and service (β = .344; p < .001) affect retail brand equity most strongly; this finding supports H4a, H4b and H4c. By contrast, price (β = .120; p < .001) and communication (β = .115; p < .01) have the weakest effects on retail brand equity.

(N = 2112)	1 - Grocery			2 - Fashion			3 - Electronics			4 - DIY			Difference tests between retail sectors					
Effects	b	β	*p*	b	β	*p*	b	β	*p*	b	β	*p*	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4
ASS → RBE	.443	.326	***	.459	.356	***	.265	.150	**	.464	.287	***	ns	ns	ns	ns	ns	ns
PRI → RBE	.342	.279	***	.374	.337	***	.407	.200	***	.211	.120	***	ns	ns	**	ns	***	**
LAY → RBE	.183	.192	***	.230	.297	**	.112	.137	***	.143	.190	**	*	ns	ns	ns	ns	ns
COM → RBE	.097	.124	**	.068	.095	*	.256	.309	***	.101	.115	**	ns	***	ns	***	ns	***
SER → RBE	.160	.184	***	.085	.122	**	.347	.370	***	.309	.344	***	ns	**	*	***	***	ns
RBE → LOY	.736	.791	***	.759	.766	***	.627	.797	***	.650	.830	***	ns	ns	ns	ns	ns	ns
R^2 LOY		.746	***		.610	***		.638	***		.672	***						
Covariates																		
Gender	.091	.045	ns	.024	.014	ns	-.016	-.009	ns	.034	.020	ns	ns	ns	ns	ns	ns	ns
Age	-.045	-.074	*	.023	.046	ns	-.024	-.046	ns	-.062	-.111	**	*	ns	ns	ns	**	ns
Familiarity	.274	.241	***	.087	.057	ns	.019	.011	ns	.005	.004	ns	**	***	***	ns	ns	ns

Structural model fit: CFI .916; TLI .904; RMSEA .056; SRMR .058; $\chi^2(1522) = 4038.217$.
Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; b = unstandardized coefficient; β = standardized coefficients.
*** p < .001; ** p < .01; * p < .05; † p < .10; ns = not significant.

Table B-7: Results

Source: Own creation.

Across retail sectors, the retail attributes affect retail brand equity in different ways. Surprisingly, differing effects across retail sectors were not observed for all retail attributes. The effects of assortment and layout on retail brand equity do not differ significantly across all retail sectors (p > .05). The effect of price on retail brand equity is equally strong among the grocery, fashion, and electronics retail sectors (p > .05), but different effects were observed when these three sectors were compared with DIY retailing (p < .01 for grocery and DIY retailing; p < .001 for electronics retailing). For communication we found equal effects on retail brand equity among the grocery, fashion, and DIY retail sectors (p > .05), whereas a comparison of these three sectors with electronics retailing shows significantly stronger effects in electronics retailing (p <. 001). For service, we found that the effects are equal in grocery and fashion retailing (p > .05) as well as in electronics and DIY retailing (p > .05). The differences arising between these units (e.g., between fashion and DIY retailing, p < .001) show that service perceptions play a stronger role for retail brand equity in electronics and DIY retailing than in grocery and fashion retailing. In sum, differences between retail sectors were observed, and H5 is thus supported.

The effects of retail brand equity on intentional loyalty are significant in all four retail sectors ($b_{grocery}$ = .736; $b_{fashion}$ = .759; $b_{electronics}$ = .627; b_{DIY} = .650; p < .001). We observed the discussed tendencies concerning the role of retail brand equity in the building of consumers' intentional loyalty. The assumed stable effects of retail brand equity on loyalty across retail sectors posited in H6 are thus supported (given the non-significant χ^2-difference tests between the sectors).

With respect to the covariates, we find largely non-significant results, except that for example younger (vs. older) consumers are less loyal in DIY retailing, whereas retailer familiarity affects intentional loyalty significantly in grocery retailing. These additional observations seem plausible, and we do not discuss them further.

4. Discussion and Conclusions

To determine whether perceived retail attributes predict strong brand associations, particularly the specific retail attributes that most strongly predict retail brand equity when we compare sectors, and to ascertain whether retail brand equity affects consumer loyalty equally across retail sectors, we examine the under-researched topic that is important for retail firms such as Target and Walmart that increasingly seek to attract customers by following brand manufacturers' longtime practice in seeking to position themselves as retail brands. Although our study is based on evaluations of only four important sectors in one German city, whose competition and consumer behavior may differ more extensively than is reflected in our theoretical reasoning regarding the major shopping goals in each sector, we discuss important theoretical implications and provide suggestions for managers.

Concerning our first research aim, although all retail attributes were found to influence the building of a strong, attractive, and unique retail brand for retailers operating in any of these sectors, the results underline the varying roles of dominant retail attributes among the grocery, fashion, electronics, and DIY retail sectors. Because the results fully support the hypothesized relationships in three retail sectors and offer partial support for the fashion retail sector, we can recognize the value in our theoretically deduced mechanisms of signals/retrieval information that depend on the predominant shopping goals in each retail sector (e.g., Kruglanski et al. 2002; Puligadda et al. 2012). However, further research may extend this conceptual framework, and thus, we subsequently discuss the sector-specific results in view of our theoretical reasoning and the extant literature.

- In *grocery retailing*, assortment and price particularly affect retail brand equity. The results support the research focus of many scholars on these two attributes in grocery retailing (for a review, see Cleeren et al. 2010). For retail branding in the highly supply-motivated purchase of groceries, assortment (i.e., quality, availability, and convenience) and price (i.e., reasonable price or a favorable price or price ratio) are predominant. However, layout and service perceptions affect retail brand equity notably less strongly than do price perceptions. This result conditionally reflects—from a consumer perspective—the recent ongoing changes in price-sensitive competition in the German grocery sector, where the market share of supermarkets has been growing and where supermarkets have gained some of the 40% of the market shares of discounters (Planet Retail 2015). We conclude that consumers largely perceive assortment and price and that they save and retrieve information in memory related to the retail attributes. The dominant use of assortment and price in consumer decision situations in grocery retailing might also be highly related to the utilitarian shopping motives that are dominant in this sector. Further research may theoretically argue that consumers' perceived dominant signals, information retrieval, and motivations may vary among different situations (for different countries, see Gómez et al. 2004; Jinfeng and Zhilong 2009).

- In *fashion retailing*, we find that assortment, price, and layout perceptions are important for retail brand equity, as hypothesized; surprisingly, however, service is not among the important drivers of retail brand equity. This result contradicts our reasoning that service might be relevant because of the unique assortments that hinder price comparisons. This finding may reflect changes in consumer behavior—enhancing our primarily hedonically based motivational reasoning (e.g., Arnold and Reynolds 2012)—and may also reflect changes in competition: the German fashion sector has been affected by discounters and aggressive price competition from vertical firms that have been rapidly gaining market share within the context of generally decreasing market volume (Planet Retail 2015). This finding might also be reflected in consumer behavior; hence, consumers are interested in highly arousing stores that offer the most up-to-date assortments as well as low prices, and they may thus be willing to consider the retailer's service to a lesser degree. Thus, consumers often retrieve information in their memory concerning attributes that are related not only to hedonic motives but also to price information. These results are insightful because few studies of retail brand equity have solely addressed fashion retailing. These findings also extend the few existing studies that compare v across retail sectors and focus on fashion retailing (Swoboda et al. 2007).

- As hypothesized for *electronics retailing*, price, communication, and service perceptions constitute the main predictors of retail brand equity. This result seems plausible, as stationary electronics retailing is price driven, and because of the low purchase frequency and high innovation rates of complex products, there is a high need for service from service personnel as well as a need for further communication/information (Darian et al. 2005). It is perhaps surprisingly that service and communication affect v to significantly different degrees (i.e., the effects are stronger than in grocery and fashion retailing). However, only two studies have addressed retail brand equity or retail image in this clearly distinct sector, whereas comparative studies of electronics and other retail sectors have underlined the importance of service, price, and communication (e.g., Cornelius et al. 2010; Kukar-Kinney et al. 2007). Future research may address our thesis that wide and narrow assortments are important but not essential for retail brand equity for most consumers who are motivated to shop at big-box electronics stores, whereas consumers are not attracted to retailers with outstanding store layouts—which could be a possible advantage against e-commerce specialists—but are more attracted to stores with outstanding service that is still an advantage. In contrast, consumers that are motivated to buy at small specialized stores are strongly attracted to such stores based on the service that they offer and big-box electronics stores lose their previous advantages.
- In *DIY retailing*, retail brand equity is primarily affected by service, followed by assortment and layout, which are the three retail attributes that were hypothesized and consistently addressed in the few extant studies of DIY retailing (e.g., Sands et al. 2009; Van Kenhove et al. 1999). Our theoretical reasoning seems to hold, as DIY shopping is often motivated by specific projects related to broad product offers, a considerable array of in-store services, and store layout enabling consumers to visualize solutions, for example, by motivating them to change planned projects and shopping decisions (Wolf and McQuitty 2011). Because price effects on retail brand equity are significantly weaker in DIY than in all other retail sectors (see the χ^2-difference tests), we conclude that DIY shoppers retrieve and rely on price information less in their decision processes.

In summary, our theoretical reasoning largely appears to be supported by the results of this study. However, future research may more deeply analyze whether information signals or retrieval contributes more to explaining these effects; whether additional motives—beyond the conceptually most important ones—affect sector-specific results; or whether these motives vary for different shopping occasions, purchase expenses, or products purchased (e.g., King

and Balasubramanian 1994; Noble et al. 2006). Because of the complex nature of this study and our theoretical objective of analyzing the dominant attributes in retail sectors, we were unable to analyze the abovementioned issues, which may be explored in future research.

Our second aim—to analyze the stability of the effects of retail brands on consumers' intentional loyalty—is highly relevant because previous studies have not compared whether the effects of retail brand equity on loyalty vary across the major retail sectors or whether a strong, attractive, and unique retail brand shows similar effects among all retail sectors. Because we find significant effects of retail brand equity on intentional loyalty throughout all sectors (compliant with extant studies, e.g., Allaway et al. 2011, in grocery; Kukar-Kinney et al. 2007, in electronics; Merrilees et al. 2007, in fashion) and because these effects are equally strong across the observed sectors, we conclude that consumers' overall assessment of a retailer as a strong, attractive and unique brand pays off. Theoretically, retail brand equity represents a valuable stimulus and a particularly strong association stored in consumers' memory that is relevant in different retail sectors. Hence, retailers should emphasize the building of strong, attractive, and unique retail brands (Keller 1993, 2003) to attract and retain consumers. However, future research should address different measures of loyalty because our cross-sectional measure captures only one aspect of loyalty (e.g., Oliver 2015, p. 453-454), or future studies could use more objective measures, such as purchase data.

For managers, it is important to know that retail brand equity strongly attracts consumers (and possibly potential employees as well) and to know which retail attributes are most beneficial in building a strong retail brand in a particular retail sector. Because we chose the evaluated retailers randomly, the results indicate starting points for retail brand management in those particular sectors. The paths to intentional loyalty show sector-specific levers (i.e., specific and largely consumer-perceived attributes as predictors of retail brand equity) but stable retail brand equity-loyalty relationships across retail sectors. For example, while a grocery retailer should primarily focus on assortment followed by price, a consumer electronics retailer should devote more attention to service, communication, and price to build a strong retail brand and to promote loyalty to the same extent as a grocery retailer. By doing so, a retailer can increase the probability of strong consumer loyalty intentions (Van Lin and Gijsbrechts 2014). Retailers may wish to consider sector-specific levers when building firm-specific unique retail brand equity and when determining the appropriate and most important predictors.

Furthermore, as all of the retail attributes have a positive influence on retail brand equity in the analyzed retail sectors, it might be valuable for managers to address less important attributes in their branding strategies—in addition to emphasizing the most important levers in their particular sector, as their competitors will also likely do. In doing so, managers can differentiate their firms from their competitors based on such a criterion. However, investments in these drivers of retail brand equity must be carefully evaluated and contrasted when planning a strategy for strengthening retail brand equity, because these attributes are perceived less strongly by consumers and contribute less to retail brand equity. However, emphasizing a lever that has a relatively small influence on retail brand equity might still be beneficial, even if it addresses only a small number of consumers. Successful attribute-related strategies cannot be easily transferred from one retail sector to another; indeed, such strategies must be transferred very carefully and must involve weighing possible flaws that may weaken the retail brand or may affect retail brand equity less and therefore fail to compensate for the investments intended to influence attribute and brand perceptions. For diversified retailers, sector-specific branding strategies are required.

5. Limitations and Directions for Further Research

To better understand predictors and effects of retail brand equity in retail sectors, additional research is needed because the present study is not without limitations. We seek to highlight three issues of this nature.

Although we devoted special attention to the data collection, analyzing the four most important retail sectors in a German city, using a census-based quota sample, and merging the evaluations of retailers in each sector limits the scope of this study. Broadening the data used in future studies would mitigate these limitations and enable additional conclusions. For example, although our sampling facilitated sector comparisons, sector-representative quota samples would more precisely reflect the specific effects. We merged the data of randomly chosen retailers to conduct a sector-specific evaluation although the relative contribution of each retailer might be hierarchically analyzed (as the respondents are nested within retailers). Alternatively, the leading retailers in a sector might be observed in a more thorough analysis of retail brand equity predictors and effects within different retail branding strategies or formats (Gonzalez-Benito et al. 2005). Although we analyzed important sectors in Germany, we cannot eliminate the possibility that the results may differ when observing different sectors and local contexts. Finally, focusing on the retail brand equity of e-commerce retail chains in addition to stationary chains is ad-

vantageous because multichannel retailing has been increasing and because retailers have different offline and online chain images and brand perception levels and must therefore manage their crosswise and reciprocal relationships (e.g., Kwon and Lennon 2009a; for store levels, see Swoboda et al. 2013a).

Alternatives exist for the applied measurements. Compared with Yoo and Donthu (2001, who include loyalty in their retail brand equity measure, for example) and Jara and Cliquet (2012, who strongly link retail brand equity to store image) , customer-based retail brand equity (Verhoef et al. 2007a) more strongly emphasizes common conceptualizations of brand equity (Keller 1993, 2003). However, the measures offer similar levels of convergent validity and explanatory power. As mentioned previously, addressing alternative measurements of loyalty (e.g., Oliver 2015, p. 453-454), additional retail attributes (given the lack of agreement on attributes and their valid measurement) and the dimensionality of measures (e.g., emphasizing the breadth and depth of assortments) may extend the conclusions that can be drawn from such a study. Further research should rigorously use pretests to identify relevant attributes in their respective context (e.g., across retail sectors as in this study).

Future research may also extend the proposed conceptual framework. Analyzing additional predictors of retail brand equity would be fruitful because, for example, perceived value comprehensively reflects customers' evaluations of the utility and expectations of retail offers (Zeithaml 1988). Alternatively, institutional factors were shown to affect retail brand equity, while perceptions of local competitor retail brand equity were shown to diminish the retail brand equity of focal retailers who strongly link retail brand equity to store image (e.g., Jinfeng and Zhilong 2009; Swoboda et al. 2013a). Finally, analyzing the specific shopping motives of consumers in each sector would extend our conclusions regarding the predictors and effects of retail brand equity (e.g., Arnold and Reynolds 2012).

C. Study 2: Reciprocity between Perceived Value and Retail Brand Equity

1. Introduction

Perceived value is defined as customers' evaluations of the utility of and expectations for received retail offers (Zeithaml 1988), whereas retail brand equity refers to the overall assessment of a retailer as a strong, attractive, and unique brand (Keller 1993). Both constructs have enjoyed a surge of popularity in the literature, as both strongly determine consumer behavior (Chaudhuri and Ligas 2009; Jinfeng and Zhilong 2009). For retailers such as Tesco (2014), which aim to strengthen their brands through the value offered to customers, understanding how brand and value perceptions interact in affecting customers is crucial. Theoretically, this understanding is important because retail brand equity and value may interact differently, because the relevance of brands may vary across retail sectors, and because firms focus on different aspects of value. For example, Wal-Mart and Tesco emphasize offering more utilitarian, functional value in terms of quality and price, whereas H&M and Zara focus on hedonic, psychological value in terms of emotional and social states (Babin et al. 1994; Sweeney and Soutar 2001). Following bidirectional studies (Swoboda et al. 2013a), this study assumes varying conclusions regarding reciprocal and unidirectional mechanisms of how retail brand equity and value influence loyalty in major retail sectors of fashion and grocery.

Scholars have intensively analyzed the effects of perceived value and retail brand equity on important behavioral downstream variables, but they have rarely analyzed the relationship between them. Scholars have argued that brand equity represents the knowledge and image of a firm in the minds of consumers (Ailawadi and Keller 2004; Hartman and Spiro 2005) and have examined the effects of retailers' attributes on brand equity and loyalty primarily for retail chains (e.g., Jinfeng and Zhilong 2009; Yoo et al. 2000). Within the much broader value research (see Figure C—1), Dodds et al. (1991) were among the first researchers to note that scholars should refer to associative/attitudinal concepts—such as brand equity—to fully understand value antecedents and effects on consumer behavior. Among other researchers, Grewal et al. (2004) and Das (2014) provide conceptual and empirical evidence of the important mediating role of value. By contrast, some scholars have also conceptualized and tested the opposite relationship, in which perceived value is mediated by attitudinal variables (e.g., Chaudhuri and Ligas 2009; Overby and Lee 2006). Finally, Ou et al. (2014) examine the simultane-

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ous effects of both value and brand equity on loyalty. Thus, extant research, to the best of our knowledge, analyzes either the effect of perceived value on retail brand equity or the effect of retail brand equity on perceived value and is thus inconclusive regarding the directionality of effects—that is, whether perceived value and retail brand equity have a reciprocal relationship and whether perceived value or retail brand equity has a stronger total effect (i.e., the sum of direct and indirect effects) on consumer behavior. In this vein, the existing research does not provide insights into this probable reciprocal relationship between value and retail brand equity.

Antecedents of perceived value	Effects of perceived value	Antecedents and effects of perceived value
Direct effects	*Direct effects*	*Value as mediator*
▪ Arnold and Reynolds (2012)	▪ Carpenter (2008)	▪ Arnold and Reynolds (2009)
▪ Babin and Babin (2001)	▪ Harris and Goode (2004)	▪ Baker et al. (2002)
▪ Babin and Darden (1995)	▪ Jones et al. (2006)	▪ Das (2014)
▪ Kerin et al. (1992)	▪ Lin et al. (2005)	▪ Dodds et al. (1991)
▪ Rayburn and Voss (2013)		▪ Grewal et al. (1998a)
	Simultaneous effects	▪ Grewal et al. (2004)
Dimensions of perceived value	▪ Ou et al. (2014)	▪ Grewal et al. (1998b)
▪ Babin et al. (1994)		▪ Sirohi et al. (1998)
▪ Mathwick et al. (2001)		▪ Stoel et al. (2004)
▪ Rintamäki et al. (2007)		▪ Sweeney et al. (1999)
▪ Smith and Colgate (2007)		
▪ Sweeney and Soutar (2001)		*Mediators of value*
		▪ Chaudhuri and Ligas (2009)
		▪ Overby and Lee (2006)
		Reciprocal effects
		▪ This study

Figure C—1: Literature review on the role of perceived value within consumer behavior

Source: Own creation.

Therefore, the first aim of this study is to examine how the reciprocity between retail brand equity and value is characterized and to determine whether retail brand equity or value has a stronger total effect on loyalty. The relevant assumption that retail brand equity, which is primarily affected by the retailer's marketing mix, and perceived value, which is largely affected by consumer shopping motives, interact in influencing consumer loyalty enhances existing unidirectional studies. Loyalty to the retailer is analyzed because it is still worthy of further research and because it is a well-researched consumer-based outcome variable that facilitates the assessment of this study's observations (Puccinelli et al. 2009). Second, as the reciprocal effects between retail brand equity and value and the total effects of both factors on loyalty have not yet been addressed, it has not been determined whether these effects are stable or whether they vary between retail sectors, formats, or retail firms. These mechanisms are therefore illuminated by focusing on utilitarian/hedonic value and retail brand equity in two important sectors.

This study offers valuable contributions to the extant literature by providing a broad conceptualization of the reciprocity between perceived value and retail brand equity and their joint influence on loyalty based on schema theoretical and goal/motivational reasoning. Although effects of retail brand equity or value dimensions on various consumer-related outcomes variables have been analyzed, their reciprocal relationship has not been considered. In contrast, the literature and recent definitions of marketing illuminate the importance to mainly create value for customers (American Marketing Association 2013). Furthermore current research leaves room for studying the directionality and reciprocity of relationships, an area of study that can extend the understanding of retailer success. Thus, the conceptual references and the few existing empirical insights into reciprocity (Ailawadi and Keller 2004; Swoboda et al. 2013a) are further developed in the current study. Second, this work examines the reciprocal and total effects of retail brand equity and value in different contexts (referring to calls, see Carpenter 2008; Sweeney and Soutar 2001) and therefore further develops schema theoretical and goal/motivational reasoning in retailing research. Consumers' patronage patterns vary among sectors and therefore this study illuminates the theoretical mechanisms that constitute the theoretical base for differences in consumer behavior between sectors and thus differences in reciprocal and total effects. A strong brand and hedonic value, for example, might be important in fashion retailing, whereas utilitarian value might dominate in grocery retailing, for which retail brand equity might have no effect on loyalty. For managers, a closer examination of the particular effects is useful in guiding budget allocations within customer retention management.

This study is organized as follows. Drawing from theory and literature, we derive hypotheses and test them empirically. We analyze the reciprocal effects based on two longitudinal studies conducted in the fashion and grocery retail sectors of a typical midsize city. We use 240 and 241 consumer evaluations, respectively, and cross-lagged structural equation modeling. After presenting the results, we discuss implications and avenues for further research.

2. Conceptual Framework and Hypothesis Development

To address these research aims, theoretical considerations from two research streams are used as a basis for this work. Following research on associative concepts (Hartman and Spiro 2005; Keller 1993; Krishnan 1996), schema theoretical reasoning is used to explain the reciprocal and direct relationships between brand and value associations that are stored in consumer memory. Goal-theoretical/ motivational approaches are used to provide a better under-

standing of these relationships with particular regard to the role of utilitarian/hedonic value in different sectors. Combining both theories broadens existing arguments, and the framework of this study proposes effects of the interdependencies between perceived value, retail brand equity, and loyalty over time by illuminating the reciprocity between value and retail brand equity and by exploring their total effects on loyalty in a comparison of fashion and grocery retailing (see Figure C—2).

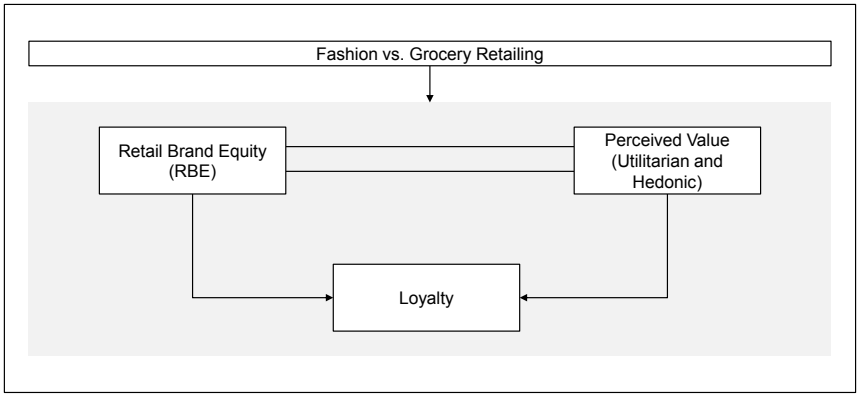


Figure C—2: Conceptual framework

Source: Own creation.

Schemata are organizing cognitive mechanisms that refer to situations or objects. The rationale for this study is based on the premise that information regarding retail brands and value propositions is stored in consumer memory as a network of interrelated associations (Barsalou 1991; Nelson et al. 1993). In particular, associative network theory assists in explaining the links between brand and value perceptions (Collins and Loftus 1975). Consumers who are confronted with value information (e.g., functional value information such as new price information from a retailer) integrate this information into their associations with a retail brand to form attitudes toward the firm and to transfer brand information to perceived value, such as offerings by a new retailer branch. The frequent activation of perceived utilitarian value leads a consumer to ascribe value both to a retail brand and to the retailer as a whole. In turn, halo effects are likely to emerge, in which the retail brand affects the evaluation of perceived value: consumers who perceive a retailer to have a strong, attractive, and unique brand will accordingly assess the value endowed by its retail brand more positively. Those reciprocal relationships and varying total effects can be explained by information retrieval, which occurs through the

spread of activation in one or both directions (Malle and Horowitz 1995; Puligadda et al. 2012).

Consumers' motivations orient their behavior in a particular direction; for example, utilitarian/hedonic consumers strive for a certain value dimension (e.g., Arnold and Reynolds 2012). In particular, shopping goals combine to form a framework in which knowledge is organized in an associative network that provides an organizational structure for retailer cognitions and affect. Goal systems theory implies that goals determine the relative salience of a retailer's attributes for consumers (Puccinelli et al. 2009) by either supporting or inhibiting the links between consumption goals and the means to achieve these goals (Kruglanski et al. 2002). Goals motivate consumers to search for relevant information and constitute the hub of an information network (Barsalou 1991), informing consumers of the paths appropriate to achieve specific goals. For example, grocery shoppers satisfy supply-oriented goals by using functional information that may be related to quality value. In their goal-organized associative networks, they access only retailer characteristics that relate to salient retailer features. These retailer characteristics, such as offered value, which is linked to both retail brand equity and consumer goals, are activated by motivated information retrieval. Within the later stages of goal-driven consumer behavior—for instance, if a consumer is loyal to a retailer—linked information is well organized, and consumers use the best available information based on their experiences with the salient goal (Puccinelli et al. 2009). This argumentation is also supported by motivational theory concerning utilitarian vs. hedonic motives, for example, which are not mutually exclusive because they appear in varying degrees (Okada 2005) and because the importance of motives differs in retail sectors.

Based on these theoretical assumptions, this study first examines the reciprocity between retail brand equity and perceived value as well as their total effects on loyalty. Subsequently, the different roles of utilitarian and hedonic value in fashion and grocery retailing are hypothesized.

2.1. Reciprocity between Perceived Value and Retail Brand Equity and their Effects on Loyalty

Schema theory and goal approaches imply interdependent relationships between perceived value and retail brand equity. Associative network theory implies that consumers' cognitive representations include the retail brand node and various interconnected nodes, such as offered value (Keller 1993; Krishnan 1996). When consumers link the brand node to the value nodes of a retailer and to those of certain competitors, bidirectional relationships are likely

to emerge (Malle and Horowitz 1995). The links between a brand and value, for example, depend on information retrieval, which may occur through activation spreading in one or both directions (Anderson 1983; Puligadda et al. 2012). A loyal consumer's cognitive representation of a retailer such as Wal-Mart can be activated via external information, such as the firm's communications. This information adds to the consumer's associations with this retail brand and, consequently, to value nodes through associative linkages. Conversely, the activation of value nodes through shopping motives results in spreading activation to other nodes, such as retail brand equity and its related cognitions and affect. Although these mechanisms are based on active cognitive processes, reciprocal activation across nodes occurs in the minds of consumers.

Reciprocity is also considered within these goal approaches. Barsalou (1991) links goals to schemata. Goals reside within a network hub of information regarding retailers, retail brands, and associated concepts such as perceived value, which assist consumers in attaining their goals and aspirations. Consumers strive to achieve goals when choosing a particular retailer and therefore rely on information regarding the retailer's value proposition and retail brand. Consumers' information retrieval relies on their goals (Puccinelli et al. 2009): consumers who primarily follow utilitarian motives such as price or quality are likely to choose retailers on the basis of utilitarian dimensions of value. However, these consumers may consider retail brand equity to be a halo when selecting from a range of retailers with similar utilitarian offers, or they may link value perceptions of certain retailers with the overall strength or uniqueness of these retailers. By contrast, when consumers are more strongly driven by hedonic goals and strive to attain goals such as social acceptance, they are likely to rely on this dimension of value when choosing a retailer while also strongly relying on retail brand equity, given the symbolic meaning of the brand. Based on this reasoning, the following hypothesis is proposed:

H1. Perceived value and retail brand equity have a reciprocal relationship.

Determining whether retail brand equity or perceived value influences consumer loyalty more strongly is difficult in light of their different interdependencies. To understand these effects, studies arguing that schemata can explain consumer loyalty (i.e., the intention and readiness to repurchase at a store or to recommend a store; Grewal et al. 2009; Swoboda et al. 2013a) are consulted. This definition of loyalty describes conative loyalty (Harris and Goode 2004), which is previously used in reciprocal studies (Swoboda et al. 2013a) as a core predictor of consumer spending (Macintosh and Lockshin 1997) and which facil-

itates the assessment of this study's observations. The strength of the direct and the total effect of retail brand equity and perceived value on loyalty may be explained by the degree of activation. The number of connections between nodes and the strength of a pathway between two concepts such as perceived value and retail brand equity increases with practice and thus depends on the amount of concept-related information that is processed (Anderson 1983; Krishnan 1996). Given this reasoning and given that the strength of the links is related to the degree of repetition, practice, and experience (Anderson 1983; Malle and Horowitz 1995), retailer node-related associations (i.e., concerning perceived value and retail brand perceptions) are likely to be activated and updated frequently—that is, with each shopping experience—for loyal consumers. However, loyal consumers may rely more strongly on overall brand associations although they also consider particular perceptions such as value perceptions (Fabrigar et al. 2006). In this vein, retail brand equity is likely to serve as a halo for consumers' overall decision to be loyal to a retailer, that affects loyalty directly but also via value perceptions.

By contrast, goal approaches imply that consumers with different motivations evaluate value propositions in specific ways when they choose a retailer. Information that is highly relevant to a goal is believed to be strongly related to the goal itself and to goal-related cognition (i.e., the mental representation of the goal and the means to achieve it) and affect (i.e., the specific actions to achieve the goal) (Puccinelli et al. 2009). Goals are linked to both retail brand and value perceptions, because both factors represent goal-relevant information and therefore contribute to consumers' goal achievement, thus leading to increased loyalty. However, perceived value is expected to be assessed more often during consumers' goal achievement process because value motivates consumers to choose among a set of alternatives (Walker and Olson 1991) and is more directly linked to the underlying goal than retail brand equity is. Therefore, perceived value is likely to directly and indirectly (i.e., via brand perceptions) contribute more strongly to the consumer's loyalty behavior. This reasoning is also supported by the literature, which demonstrates consumers' strong reliance on value perceptions (e.g., Arnold and Reynolds 2012; Overby and Lee 2006).

In summary, through careful consideration of these opposed theoretical positions, this study followed goal/motivational approaches and expected consumers to base their loyalty intentions more strongly on perceived value, which further determines the context in which schemata are developed: value determines how information is processed within consumer memory. Thus, consumers are likely to evaluate value perceptions first because such perceptions are

directly linked to their underlying goals. Therefore, the following hypothesis is proposed:

H2. Perceived value has a stronger total effect on loyalty than retail brand equity does.

2.2. Utilitarian and Hedonic Value in Retail Sectors

This section examines whether the reciprocal effects of retail brand equity and utilitarian/hedonic value and the total effects on loyalty vary in different retail contexts. Fashion and grocery retailing are chosen because they are the most important retail sectors in most Western economies (e.g., Deloitte 2014); this choice therefore aids in ensuring the generalizability of this study's findings. One underlining rationale is based on schema theory, whereby experience-based knowledge on sector-specific associations is stored in consumers' memory (Grewal et al. 1998a). Concerning goal theory and value information retrieval, hedonic (utilitarian) value is likely to dominate in fashion (grocery) retailing, thus explaining different consumer orientations. Utilitarian value is strongly functional by nature and strongly relates to product and service knowledge. Hedonic value more strongly relates to consumers' self-concept because of its psychological nature and its more symbolic effect (Sirgy 1982). Based on these assumptions consumers' orientations differ when they purchase textiles compared to groceries.

Fashion shoppers more often pursue shopping goals that are emotional and socially oriented in nature, and thus, they tend to search for and evaluate fashion stores on this basis. Fashion retailers rely less on particular format differences and customize their retail offers individually by focusing on the self-concepts of their target groups. Fast fashion retailers such as Forever 21 and H&M offer rather comparable assortments and prices; however, these retailers differ in the hedonic value dimensions of their offerings. As a result, each fashion retailer is rather specific in its offering, which prevents joint evaluation by consumers. In other words, fashion retailers are evaluated separately based on consumers' hedonic goals, which allows consumers to easily justify their related choices and goals.

By contrast, status motives are less relevant in grocery retailing, as most consumers merely satisfy their day-to-day food needs and consider hedonic value, such as emotional or social states, to a lesser extent. Furthermore, grocery shopping is regarded as a supply-oriented purchase related to functional consumption, as grocery shoppers primarily pursue supply-oriented shopping goals (Puccinelli et al. 2009). Consumers search and evaluate grocery stores

primarily based on functional value, considering such factors as price or quality. This behavior is plausible because grocery retailers differentiate themselves in spatial competition by largely basing their offers on this value; examples include hypermarket vs. discounter formats with wide or narrow assortments and high-low or everyday low prices (e.g., Cleeren et al. 2010). Customers find it easier to justify utilitarian consumption because the primarily utilitarian consumption setting is likely to impede the justification of hedonic-driven consumption (Okada 2005).

In summary, this reasoning suggests that hedonic (utilitarian) value more strongly drives consumer behavior in fashion (grocery) retailing through various mechanisms: The dominating value dimension in a particular retail sector, as it is more closely linked to the consumers' shopping goals, is more often accessed and therefore has stronger links to retail brand equity than the less dominant value dimension (e.g., hedonic value in grocery retailing). As a result, the reciprocal effects that involve the dominating value dimension, as well as the total effects (i.e., the sum of direct and indirect effects) will be stronger than those for the less dominating dimension. The links between the value dimension and retail brand equity will be stronger due to the higher frequency that they are accessed with in consumer memory. The following hypotheses are thus proposed:

H3. In fashion retailing, (a) the reciprocal relationship between perceived value and retail brand equity and (b) the total effects of perceived value and retail brand equity on loyalty are stronger for hedonic value than for utilitarian value.

H4. In grocery retailing, (a) the reciprocal relationship between perceived value and retail brand equity and (b) the total effects of perceived value and retail brand equity on loyalty are stronger for utilitarian value than for hedonic value.

3. Empirical Studies

3.1. Sample Designs

Two empirical studies on fashion and grocery retailing were conducted using longitudinal designs. To develop the samples, quota sampling (representing the national distribution of the population based on age and gender according to the national census) was employed, and 300 respondents per sector were recruited by telephone from an existing consumer panel in 2013. After pretests were administered, the sampling procedure was conducted in a midsized city

in three waves over a nine-month period, with four months between each wave and with the same respondents. Prior to the study respondents were asked to list known local fashion or grocery retailers and then to name four retailers from which they frequently purchased either fashion or groceries. This was done prior to the first wave to assure that respondents are not immediately confronted with the retail brand within the main study, which could affect value and retail brand evaluations. To diminish the threats of potential interviewer bias and of non-response bias, 20 trained and experienced interviewers conducted scheduled face-to-face in-home interviews with standardized questionnaires in which items were read to respondents. Interviewer training was conducted following the method of Fowler and Mangione (1991). The average interview duration was 30 minutes. All interviewers surveyed equal numbers of respondents for both sectors. To reduce attrition, vouchers were used as incentives for completing all waves of the survey.

Age groups	Realized quota sample (in %)			Realized quota sample (in %)			Planned quota sample (in %)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Fashion sector (N = 241)			*Grocery sector (N = 240)*					
Age 15-24	12.4	10.8	23.2	11.7	10.4	22.1	12.6	12.0	24.6
Age 25-49	22.8	20.3	43.2	25.0	20.9	45.9	17.4	17.1	34.5
Age 50-64	8.3	7.5	15.8	7.1	6.3	13.4	10.1	10.3	20.4
Age above 64	6.2	11.6	17.8	5.8	12.9	18.8	8.8	11.8	20.6
Total	49.8	50.2	100.0	49.6	50.4	100.0	48.8	51.2	100.0

Table C-1: Sample characteristics

Source: Own creation.

In the first wave, one of the retailers from which the respondents frequently purchased fashion or groceries was randomly chosen for each respondent to be subsequently evaluated. The analysis included respondents who participated in all three survey waves. The response rates were 82% for the fashion sample and 83% for the grocery sample. The Mahalanobis distance was used to identify outliers, and the results revealed six and ten striking cases for the fashion and grocery samples, respectively, which were excluded from the analysis. This procedure resulted in a total of 241 (fashion) and 240 (grocery) observations per wave. With respect to the intended quotas, the 25-49 age group was slightly overrepresented in both samples (see Table C-1). In summary, the interviewees assessed twenty-nine fashion retailers with different fashion style focuses and fourteen grocery retailers with different formats.

Normality tests showed that both samples deviated from multivariate normality. Thus, the mean-adjusted maximum likelihood estimator (MLM) was chosen to test the hypotheses, as it provides a robust chi-squared test and handles potential threats within the data structure (Asparouhov 2005). Chi-

squared difference tests were conducted using scaling corrections (Satorra and Bentler 2001).

3.2. Measurements

Regarding the measures, general aspects such as the hierarchy of effects were considered; second, scales from previous studies (seven-point Likert-type scales from 1 to 7, ranging from strongly disagree to strongly agree) were used; and third, the model complexity and goodness of the measurements were methodologically addressed (see Table C-2 and Table C-3).

Construct	Item
Perceived value - *Sweeney and Soutar (2001)*	
Quality value (VAL1)	QV1: Retailer__has consistent quality.
	QV2: Retailer__offers products that are well made.
	QV3: Retailer__has an acceptable standard of quality.
	QV4: Retailer__offers products of poor workmanship.[a]
	QV5: Retailer__offers products that would not last a long time.[a]
	QV6: Retailer__performs consistently.
Price value (VAL2)	PV1: Retailer__offers reasonable prices.
	PV2: Retailer__offers good value for money.
	PV3: Retailer__offers good products for the price.
	PV4: Retailer__is economical.
Social value (VAL3)	SV1: Retailer__helps me feel acceptable.
	SV2: Retailer__improves the way I am perceived.
	SV3: Retailer__makes a good impression on other people.
	SV4: Retailer__gives its customers' social approval.
Emotional value (VAL4)	EV1: Shopping at Retailer__is something that I enjoy.
	EV2: Visiting Retailer__makes me want to shop.
	EV3: Retailer__is one that I feel relaxed about shopping at.
	EV4: Shopping at Retailer__makes me feel good.
	EV5: Shopping at Retailer__gives me pleasure.[a]
Retail brand equity - *Verhoef et al. (2007a)*	
	RBE1: Retailer__is a strong brand.
	RBE2: Retailer__is a well-known brand.
	RBE3: Retailer__is an attractive brand.
	RBE4: Retailer__is a unique brand.
Loyalty - *Adapted from Sirohi et al. (1998)*	
	LOY1: I am certain that I will shop at Retailer__again.
	LOY2: In the future, I will make more purchases at Retailer__than at any other retailer.
	LOY3: I would recommend Retailer__to friends and others.
Shopping motives - Adapted from Rintamäki et al. (2006)	
	SM1: I like to save money when I shop.
	SM2: I like to make my purchases conveniently.
	SM3: I feel that I belong to the customer segment of Retailer__.
	SM4: I feel like a smart shopper. I'm always sure I made successful purchases.
	SM5: I enjoy shopping trips themselves, not just because I am able to get my purchases done.
	SM6: I want to explore/touch/try different products while shopping.
Marketing mix - *Adapted from Chowdhury et al. (1998)*	
	MM1: The service at Retailer__is excellent.
	MM2: The appearance of Retailer__is appealing.
	MM3: The communication of Retailer__is informative.
	MM4: It is easy to get into the store of Retailer__.

Table C-2: Measurements

Source: Own creation.

All scales were pretested by two consumer focus groups and additional quantitative surveys based on quota sampling (fashion: N = 160; grocery: N = 154) to assure that the measures that were developed and tested separately are discriminant. Perceived value was measured by differentiating between utilitarian, more functional value (i.e., quality and price) and hedonic, more psychological value (i.e., emotional and social states) using the scale of Sweeney and Soutar (2001), which is an established scale within value research (Helkkula et al. 2012).

Retail brand equity was measured using the frequently used scale of Verhoef et al. (2007a), and loyalty was measured by adapting the scale of Sirohi et al. (1998); both measures have been used in previous reciprocal studies, thus facilitating the assessment of this study's observations (Swoboda et al. 2013a). The pretests yielded satisfactory results for reliability and validity, except for three items from the perceived value scale, which were excluded from the main studies. Shopping motives, which represent a core antecedent of perceived value in retailing (Arnold and Reynolds 2012) and marketing mix, which represents a core antecedent of retail brand equity (Ailawadi and Keller 2004), were measured using six items (Rintamäki et al. 2006) and four items (Chowdhury et al. 1998). Both were included as instrumental variables (IVs). Because consumer behavior may be influenced by gender (0 = male, 1 = female) and age, this study controlled for both variables as well as for store familiarity, which was measured using a single item (according to Inman et al. 2009).

3.3. Method

For the six models—two general and four utilitarian versus hedonic value models in the sectors—item parceling for perceived value was used. The method offers the advantages to reduce model complexity, assure a more optimal ratio of variables to sample size and more stable estimates. However, to overcome possible shortcomings of the method, we tested the reliability and validity of the perceived value scale and its four dimensions, and ensured the unidimensionality of the value dimensions prior to item parceling, (Bandalos 2002). The results were satisfactory (for details see Appendix E.2.1). For the general models, including perceived value with parcels, construct and composite reliability were ensured for each construct and time point (see Table C-3). Face validity and construct and discriminant validity were assessed. Although, the AVE was below the recommended threshold for one construct in models 1 and 2, the construct was still used for three reasons (see Table C-4): the AVE was only slightly below the threshold, the factor loadings and the composite reliability showed satisfactory values, and the inclusion of the construct in the analysis permitted a comparison of the results for both samples. Finally, the fit values for the con-

firmatory models were satisfactory, with the exception of the χ^2/df value, whose deviation from the threshold can be accepted because it is sensitive to sample size (Wheaton 1987). For the utilitarian and hedonic value models, an identical procedure was chosen to ensure reliability and validity (for details, see Appendix E.2.2). The fit values for all four confirmatory models were satisfactory.

		Time Point 1					Time Point 2					Time Point 3				
Construct	Item	MV/SD	ItTC	α [b]	CR	λ	MV/SD	ItTC	α [b]	CR	λ	MV/SD	ItTC	α [b]	CR	λ
Fashion sector																
Perceived value with parcels	VAL1	5.3/0.9	.672	.757	.755	.880	5.4/1.0	.663	.738	.739	.914	5.4/1.1	.697	.786	.780	.914
	VAL2	5.4/0.9	.501			.498	5.5/0.9	.422			.494	5.4/1.1	.537			.514
	VAL3	5.7/1.0	.546			.685	5.7/1.0	.516			.648	5.7/1.1	.570			.705
	VAL4	4.4/1.2	.528			.588	4.3/1.2	.550			.600	4.1/1.2	.580			.598
Retail brand equity	RBE1	5.7/1.2	.800	.874	.887	.887	5.7/1.1	.769	.859	.859	.847	5.6/1.1	.691	.816	.820	.803
	RBE2	5.9/1.1	.668			.925	5.9/1.0	.675			.898	5.8/1.0	.606			.853
	RBE3	5.7/1.2	.814			.684	5.7/1.1	.762			.700	5.6/1.1	.711			.652
	RBE4 [a]	4.7/1.7	-			-	5.0/1.5	-			-	4.9/1.5	-			-
Loyalty	LOY1	6.4/0.9	.530	.745	.773	.860	6.3/0.9	.668	.835	.851	.899	6.2/0.8	.633	.820	.840	.871
	LOY2	5.3/1.5	.593			.694	5.5/1.3	.730			.798	5.5/1.2	.723			.804
	LOY3	5.7/1.2	.668			.613	5.8/1.1	.754			.708	5.8/1.1	.719			.669
Grocery sector																
Perceived value with parcels	VAL1	5.2/1.1	.532	.718	.731	.824	5.2/1.0	.537	.732	.886	.843	5.3/0.9	.610	.753	.759	.864
	VAL2	5.3/1.1	.333			.538	5.4/1.0	.364			.579	5.5/0.9	.430			.623
	VAL3	5.3/1.1	.618			.801	5.3/1.0	.621			.809	5.4/1.0	.591			.782
	VAL4	4.1/1.2	.562			.656	4.2/1.2	.590			.653	4.3/1.2	.597			.652
Retail brand equity	RBE1	5.5/1.2	.712	.787	.811	.747	5.5/1.1	.751	.818	.851	.832	5.5/1.1	.661	.814	.818	.830
	RBE2	6.0/1.1	.498			.810	5.9/1.1	.586			.910	5.9/1.1	.592			.864
	RBE3	5.2/1.2	.730			.773	5.2/1.2	.755			.794	5.3/1.2	.761			.785
	RBE4 [a]	4.2/1.8	-			-	4.4/1.7	-			-	4.5/1.6	-			-
Loyalty	LOY1	6.5/0.9	.401	.616	.650	.694	6.4/0.8	.362	.646	.694	.749	6.3/0.8	.473	.683	.704	.792
	LOY2	5.4/1.5	.463			.645	5.5/1.4	.509			.722	5.7/1.2	.522			.760
	LOY3	5.6/1.3	.478			.571	5.7/1.4	.556			.491	5.7/1.1	.539			.510

Confirmatory model fits:
Time point one (fashion sector): CFI .945; TLI .923; RMSEA .084; $\chi^2(32) = 86.868$; SCF = 1.05.
Time point two (fashion sector): CFI .938; TLI .913; RMSEA .096; $\chi^2(32) = 102.687$; SCF = 1.07.
Time point three (fashion sector): CFI .937; TLI .911; RMSEA .089; $\chi^2(32) = 93.052$; SCF = 1.11.
Time point one (grocery sector): CFI .935; TLI .906; RMSEA .072; $\chi^2(32) = 69.796$; SCF = 1.19.
Time point two (grocery sector): CFI .922; TLI .887; RMSEA .088; $\chi^2(32) = 88:571$; SCF = 1.19.
Time point three (grocery sector): CFI .931; TLI .899; RMSEA .082; $\chi^2(32) = 80:40$; SCF = 1.17
[a] Item deleted due to low ItTC. [b] Following (Hair et al. 2014) and aiming for equal measurements in all time points and retail sectors, α is considered acceptable for α ≥ .60.

Table C-3: Reliability and validity of measurements

Source: Own creation.

	Time Point 1			Time Point 2			Time Point 3		
	1	2	3	1	2	3	1	2	3
Fashion sector									
1 Perceived value	**.543**			**.499**			**.495**		
2 Retail brand equity	*.394*	**.706**		*.578* [a]	**.709**		*.461*	**.677**	
3 Loyalty	*.256*	*.468*	**.528**	*.442*	*.417*	**.672**	*.371*	*.387*	**.664**
Grocery sector									
1 Perceived value	**.514**			**.567**			**.642**		
2 Retail brand equity	*.526* [a]	**.581**		*.584* [a]	**.683**		*.626*	**.634**	
3 Loyalty	*.477* [a]	*.301*	**.431**	*.489*	*.305*	**.517**	*.503*	*.294*	**.578**

Confirmatory model fits:
Time point one (fashion sector): CFI .945; TLI .923; RMSEA .084; $\chi^2(32) = 86.868$; SCF = 1.05.
Time point two (fashion sector): CFI .938; TLI .913; RMSEA .096; $\chi^2(32) = 102.687$; SCF = 1.07.
Time point three (fashion sector): CFI .937; TLI .911; RMSEA .089; $\chi^2(32) = 93.052$; SCF = 1.11.
Time point one (grocery sector): CFI .935; TLI .906; RMSEA .072; $\chi^2(32) = 69.796$; SCF = 1.19.
Time point two (grocery sector): CFI .922; TLI .887; RMSEA .088; $\chi^2(32) = 88:571$; SCF = 1.19.
Time point three (grocery sector): CFI .931; TLI .899; RMSEA .082; $\chi^2(32) = 80:40$; SCF = 1.17.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table C-4: Discriminant validity

Source: Own creation.

To determine measurement invariance over time, confirmatory factor analysis was applied following the three steps proposed by Raykov and Amemiya (2008). This approach requires a sequence of successive tests in which each step is mandatory for the following step. We first assured configural invariance by assessing the model fit of the baseline model in which the factor loadings and intercepts are freely estimated for each time point. Within the second step, we estimated a factor-loading-invariant model in which the factor loadings of each single item are constrained to be equally estimated across time points. The goodness-of-fit statistics for the second model are then compared to the corresponding values for the first model. We applied several differences-in-fit indices to determine measurement invariance such as chi-square difference tests and ΔCFI. In the third step we then fixed the intercepts of each item across all time points. When a good comparison between the factor loading invariant model and the third model is obtained, measurement invariance is confirmed. As full measurement invariance was not accomplished for both samples, partial invariance was ascertained (Byrne et al. 1989) by freeing several intercept and factor-loading values (see Table C-5). The results indicated a satisfactory fit for all constructs within all models (for details on measurement invariance for the utilitarian and hedonic value models see Appendix E.2.3).

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (Δ CFI)	TLI (Δ TLI)	RMSEA (Δ RMSEA)	SCF for MLM
Fashion sector						
Model 1:	578.355/348	-	.961	.951	.052	1.14
Configural invariance	(.000)					
Model 2:	607.521/362	29.702	.959	.950	.053	1.13
Full factor loading invariance	(.000)	(.008)	(.002)	(.001)	(.001)	
Model 3:	591.767/360	12.541	.961	.953	.052	1.13
Partial factor invariance[a]	(.000)	(.403)	(.-)	(.002)	(-)	
Model 4:	659.065/374	85.527	.952	.944	.056	1.13
Partial factor loading and full intercept invariance	(.000)	(.000)	(.009)	(.007)	(.004)	
Model 5:	612.906/371	34.066	.959	.952	.052	1.13
Partial factor loading and partial intercept invariance[b]	(.000)	(.064)	(.002)	(.001)	(-)	
Grocery sector						
Model 1:	607.642/348	-	.947	.933	.057	1.16
Configural invariance	(.000)					
Model 2:	618.171/356	10.156	.948	.937	.055	1.16
Full factor loading invariance	(.000)	(.254)	(.001)	(.004)	(.002)	
Model 3:	661.121/372	55.019	.943	.933	.057	1.15
Full factor loading and full intercept invariance	(.000)	(.000)	(.004)	(-)	(-)	
Model 4:	643.129/371	34.866	.946	.937	.055	1.15
Full factor loading and partial intercept invariance[c]	(.000)	(.054)	(.006)	(.004)	(.002)	

[a] Factor Loadings are freed for the following items: LOY3 time points one, two and three.
[b] Intercepts are freed for the following items: LOY1 time point three, VAL4 time point three, LOY2 time point one.
[c] Intercepts are freed for the following items: LOY1 time point three.

Table C-5: Measurement invariance tests across time points (general models)

Source: Own creation.

To account for endogeneity the IVs, shopping motives and marketing mix were parceled due to the model complexity. F-tests underlined the predictor strength

of the IVs (the F-values were above the threshold of 10; Antonakis et al. 2014). In addition to the efficient (proposed) models, consistent models including the IVs were estimated, and the Hausman (1978) test was used to test whether the path estimates changed. The t-values were partially above the critical value of 1.96, suggesting the existence of endogeneity. One consequence of this result would indicate the need to use the consistent model. Nevertheless, the efficient models were used for three reasons. First, the global fit measures were better for the efficient models. Second, the structure of the results for the consistent and efficient models was nearly equal, and both contributed equally to the test of the hypotheses; therefore, the parsimony principle was followed, with a preference for the less complex model (Kline 2011, p. 102). Third, Kline (2011, p. 156), states that an IV can be endogenous or exogenous, though an exogenous IV is preferable (for details, see Appendix E.2.4).

Finally, CMV was accounted for by an appropriate questionnaire design and by applying a longitudinal survey design (Chang et al. 2010; Weiber and Mühlhaus 2014, p. 360) collecting data at different points in time. Additionally, single-factor tests were conducted for both sectors and all time points, and the correlational marker technique (Williams et al. 2010). The results of the single-factor test showed that the models with all items loading on a single factor had a significantly worse fit than our proposed models did in both sectors and in all time points (see Table C-6).

	CFI	TLI	RMSEA	SCF	χ^2(df)	*p*-value of difference
General models						
Fashion sector						
Time point one: CFA	.945	.923	.084	1.05	86.868 (32)	***
Time point one: SFT	.739	.664	.176	1.05	296.833 (35)	
Time point two: CFA	.938	.913	.096	1.07	102.687 (32)	***
Time point two: SFT	.759	.690	.181	1.06	310.037 (35)	
Time point three: CFA	.937	.911	.089	1.11	93.052 (35)	***
Time point three: SFT	.723	.644	.178	.113	302.170 (35)	
Grocery sector						
Time point one: CFA	.891	.847	.086	1.19	89.384 (32)	***
Time point one: SFT	.695	.607	.142	1.18	196.049 (35)	
Time point two: CFA	.885	.839	.106	1.22	118.304 (32)	***
Time point two: SFT	.774	.710	.142	1.22	204.949 (35)	
Time point three: CFA	.916	.882	.089	1.19	93.219 (32)	***
Time point three: SFT	.803	.747	.131	1.18	178.713 (35)	
Utilitarian value models						
Fashion sector						
Time point one: CFA	.969	.949	.075	1.10	40.207 (17)	***
Time point one: SFT	.841	.777	.157	1.09	139.162 (20)	
Time point two: CFA	.974	.958	.074	1.12	39.659 (17)	***
Time point two: SFT	.804	.725	.190	1.09	193.483 (20)	
Time point three: CFA	.965	.943	.078	1.15	42.075 (17)	***
Time point three: SFT	.785	.699	.179	1.15	175.170 (20)	
Grocery sector						
Time point one: CFA	.951	.919	.061	1.23	32.288 (17)	***
Time point one: SFT	.647	.505	.151	1.29	129.440 (20)	
Time point two: CFA	.968	.947	.062	1.25	32.733 (17)	***
Time point two: SFT	.841	.778	.127	1.32	97.919 (20)	
Time point three: CFA	.982	.971	.045	1.22	25.390 (17)	***
Time point three: SFT	.840	.776	.125	1.22	95.340 (20)	

Table to be continued

Table C-6 continued

			Hedonic value models			
Fashion sector						
Time point one: CFA	.967	.945	.079	1.00	42.264 (17)	***
Time point one: SFT	.834	.767	.162	1.00	145.773 (20)	
Time point two: CFA	.982	.971	.060	1.09	31.553 (17)	***
Time point two: SFT	.790	.705	.188	1.07	191.222 (20)	
Time point three: CFA	.965	.942	.075	1.12	40.097 (17)	***
Time point three: SFT	.774	.684	.175	1.15	168.348 (20)	
Grocery sector						
Time point one: CFA	.931	.886	.077	1.21	41.049 (17)	***
Time point one: SFT	.675	.545	.154	1.21	133.341 (20)	
Time point two: CFA	.911	.853	.111	1.15	67.095 (17)	***
Time point two: SFT	.780	.692	.160	1.19	143.595 (20)	
Time point three: CFA	.924	.875	.098	1.21	56.487 (17)	***
Time point three: SFT	.780	.692	.154	1.19	134.301 (20)	

Note: CFA = Model fit of the confirmatory factor analysis; SFT = Model fit of the single factor test; SCF = Scaling correction factor for MLM; difference testing was conducting using χ^2-difference tests; *** $p < .001$.

Table C-6: Single-factor test

Source: Own creation.

The correlational marker technique was implemented using the job variable as a marker variable because it is theoretically unrelated to the study's constructs (Rindfleisch et al. 2009). The correlational marker technique consists of three successive phases. The results of the model comparisons for the general models (phase I) point out that the correlations between the latent constructs are not biased through the presence of the marker variable (Method-U vs. -R) and are all in support of the Method-C Model (see chi-square differences of model comparison tests in Table C-7). The results of the following reliability decomposition (phase II) indicate that the measurement of the substantive latent variables yielded sufficient overall reliability values (see Table C-8). The amount of method variance, associated with the measurement of the substantive latent constructs, ranges between 1.74 and 10.8 percent. Based on these observations and as the impact of method variance in the study of Williams et al. (2010) was above 12.5 percent, we conclude that the threat of CMV is decreased. Finally, the results of the sensitivity analysis (phase III) show that marker-based method variance only slightly effects construct correlations and that the factor correlations remain significant throughout the sensitivity analysis (see Table C-9). Thus, based on these findings, we conclude that the threat of CMV within our data is minimized (An identical procedure was chosen for the utilitarian and hedonic value models which led to the same conclusions. For details see Appendix E.2.5).

	Time point 1							Time point 2							Time point 3						
Model	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF
Fashion																					
CFA	119.697	42	.927	.904	.088	.055	1.01	124.106	42	.929	.908	.090	.061	1.06	107.838	42	.934	.913	.081	.055	1.09
Baseline	120.806	43	.926	.906	.087	.055	1.00	132.410	43	.924	.902	.093	.065	1.04	103.885	43	.938	.921	.077	.057	1.07
Method-C	120.543	42	.926	.903	.088	.055	1.00	126.971	42	.927	.905	.092	.063	1.05	102.072	42	.939	.920	.077	.052	1.07
Method-U	90.240	33	.946	.910	.085	.045	1.01	94.283	33	.948	.913	.088	.046	1.05	91.493	33	.941	.901	.086	.049	1.10
Method-R	89.156	36	.950	.923	.078	.046	1.02	94.883	36	.950	.923	.082	.046	1.04	90.476	36	.945	.916	.079	.049	1.11
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*					$\Delta\chi^2$	Δdf	*p*					$\Delta\chi^2$	Δdf	*p*				
Baseline with Method-C	.263	1	ns					5.439	1	*					1.813	1	ns				
Method-C with Method-U	30.303	9	***					32.688	9	***					10.579	9	***				
Method-U with Method-R	1.084	3	ns					.600	3	ns					1.017	3	ns				
Grocery																					
CFA	102.171	42	.889	.854	.077	.067	1.14	133.687	42	.882	.845	.096	.064	1.17	103.648	42	.916	.890	.078	.056	1.15
Baseline	98.046	43	.891	.846	.080	.063	1.15	135.162	43	.881	.848	.095	.065	1.15	104.777	43	.916	.892	.078	.056	1.14
Method-C	101.278	42	.889	.844	.080	.063	1.14	134.681	42	.880	.843	.096	.063	1.16	104.059	42	.915	.889	.079	.056	1.14
Method-U	94.146	33	.887	.811	.088	.060	1.15	115.775	33	.893	.822	.102	.057	1.20	93.119	33	.918	.863	.087	.052	1.15
Method-R	93.552	36	.894	.837	.082	.061	1.16	115.773	36	.897	.843	.096	.058	1.20	92.290	36	.923	.883	.081	.052	1.16
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*					$\Delta\chi^2$	Δdf	*p*					$\Delta\chi^2$	Δdf	*p*				
Baseline with Method-C	1.911	1	ns					.481	1	ns					.718	1	ns				
Method-C with Method-U	7.132	9	***					18.906	9	***					10.940	9	***				
Method-U with Method-R	.594	3	ns					.002	3	ns					.829	3	ns				

Note: SCF = Scaling correction factor for MLM; *** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant.

Table C-7: Results of the model comparisons (phase I) for the general models

Source: Own creation.

	Time point 1			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.770	.715	.055	7.14
Retail brand equity	.875	.821	.054	6.17
Perceived value	.765	.735	.030	3.92
Grocery				
Loyalty	.630	.562	.068	10.79
Retail brand equity	.752	.700	.053	7.05
Perceived value	.793	.740	.052	6.56
	Time point 2			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.846	.781	.065	7.68
Retail brand equity	.858	.793	.065	7.58
Perceived value	.746	.722	.024	3.22
Grocery				
Loyalty	.659	.605	.054	8.19
Retail brand equity	.852	.803	.049	5.75
Perceived value	.741	.702	.038	5.13
	Time point 3			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.827	.773	.057	6.89
Retail brand equity	.748	.735	.013	1.74
Perceived value	.785	.751	.035	4.46
Grocery				
Loyalty	.746	.664	.080	10.72
Retail brand equity	.750	.726	.024	3.20
Perceived value	.759	.727	.033	4.35

Table C-8: Results of the reliability decomposition (phase II) for the general models

Source: Own creation.

	Time point 1				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.548	.548	.555	.559	.556
VAL with LOY	.696	.698	.698	.688	.686
RBE with VAL	.763	.762	.786	.823	.829
JOB with LOY	.106	.000	.000	.000	.000
JOB with RBE	-.033	.000	.000	.000	.000
JOB with VAL	.118	.000	.000	.000	.000
Grocery					
RBE with LOY	.684	.684	.676	.669	.668
VAL with LOY	.505	.506	.498	.495	.495
RBE with VAL	.627	.628	.621	.612	.607
JOB with LOY	-.106	.000	.000	.000	.000
JOB with RBE	-.131	.000	.000	.000	.000
JOB with VAL	-.044	.000	.000	.000	.000
	Time point 2				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.644	.646	.633	.617	.632
VAL with LOY	.665	.665	.666	.680	.690
RBE with VAL	.758	.760	.780	.797	.781
JOB with LOY	.023	.000	.000	.000	.000
JOB with RBE	-.211	.000	.000	.000	.000
JOB with VAL	-.049	.000	.000	.000	.000

Table to be continued

Table C-9 continued					
Grocery					
RBE with LOY	.272	.271	.275	.313	.324
VAL with LOY	.686	.687	.675	.640	.627
RBE with VAL	.601	.601	.609	.641	.650
JOB with LOY	.213	.000	.000	.000	.000
JOB with RBE	.018	.000	.000	.000	.000
JOB with VAL	.194	.000	.000	.000	.000
		Time point 3			
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.615	.622	.626	.619	.618
VAL with LOY	.612	.609	.609	.601	.599
RBE with VAL	.682	.679	.667	.675	.671
JOB with LOY	.080	.000	.000	.000	.000
JOB with RBE	-.145	.000	.000	.000	.000
JOB with VAL	-.127	.000	.000	.000	.000
Grocery					
RBE with LOY	.537	.537	.540	.525	.522
VAL with LOY	.705	.705	.699	.694	.693
RBE with VAL	.787	.788	.801	.803	.802
JOB with LOY	-.012	.000	.000	.000	.000
JOB with RBE	-.142	.000	.000	.000	.000
JOB with VAL	.063	.000	.000	.000	.000

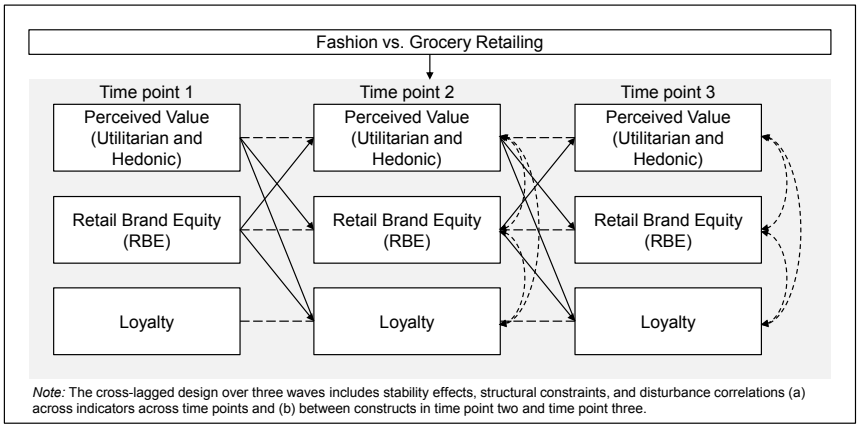
Note: LOY = Loyalty; RBE = Retail brand equity; VAL = Perceived hedonic value; JOB = Job.

Table C-9: Results of the sensitivity analyses (phase III) for the general models

Source: Own creation.

To test the hypotheses, a cross-lagged design (see Figure C—3) for the obtained longitudinal data was applied for structural equation modeling (Finkel 1995) using Mplus 7.11. The cross-lagged design facilitates an analysis of reciprocal effects (Finkel 1995) and is based on two assumptions. First, a variable X_t can be predicted by X_{t-1}, and second, cross-lagged influences on X_t can occur by further variables Y_{t-1}. The cross-lagged design includes stability effects of each variable over time (e.g., the modeled path from retail brand equity at time point one to retail brand equity at time point two), thus we modeled the respective effects. Also, cross-lagged designs include disturbance correlations with respect to the indicators (Burkholder and Harlow 2003). We therefore modeled disturbance correlations between the same indicators across all three time points. Another characteristic of cross-lagged panel models is that the same effects are constrained to be equal over time (e.g., the effect from retail brand equity at time point one on perceived value at time point two and the respective effect from time point two to time point three are equally estimated). Furthermore, we included disturbance correlations between all constructs at time point two and integrated them at time point three. The same disturbance correlations between time points two and three are constrained and thus estimated equally (Finkel 1995) for example, the disturbance correlation between retail brand equity and perceived value at time point two is estimated equally at time point three. Relying on longitudinal data for the analysis of reciprocal effects offers advantages over the use of cross-sectional data, as it overcomes the shortcomings of a cross-sectional design in terms of equilibrium and stationary (i.e., the

assumption that the effects are in a steady state, manifest, and do not change over time, Kline 2011, p. 108-109). Hence, using cross-sectional data would only depict a snapshot of a continuing process and thus not fully account for reciprocal effects of observed variables that both act as cause and effect of another variable, which would lead to biased estimates (Kaplan et al. 2001). The fit values were satisfactory for all models.



Note: The cross-lagged design over three waves includes stability effects, structural constraints, and disturbance correlations (a) across indicators across time points and (b) between constructs in time point two and time point three.

Figure C—3: Cross-lagged design

Source: Own creation

3.4. Results

Models 1 and 2 support H1 in both sectors by underlining the positive reciprocal relationship between perceived value and retail brand equity (see Table C-10). The effects of perceived value on retail brand equity (fashion: $\beta_{1\text{-}2}$ = .137, p < .001; $\beta_{2\text{-}3}$ = .194, p < .001; grocery: $\beta_{1\text{-}2}$ = .104, p < .001; $\beta_{2\text{-}3}$ = .130, p < .001) and the effects of retail brand equity on perceived value (fashion: $\beta_{1\text{-}2}$ = .329, p < .001; $\beta_{2\text{-}3}$ = .251, p < .001; grocery: $\beta_{1\text{-}2}$ = .097, p < .001; $\beta_{2\text{-}3}$ = .136, p < .001) are significant over time. The results contradict H2 because the total effect on loyalty is not stronger for perceived value; rather, the effect of retail brand equity is stronger (fashion: β_{RBE} = .197, p < .001 vs. β_{VAL} = .134, p < .001; grocery: β_{RBE} = .178, p < .001 vs. β_{VAL} = .111, p < .001). This result is underlined by a t-test (fashion: t = 2.876; p < .001; grocery: t = 2.587; p < .01). These results support and enhance previous conceptualizations (e.g., Das 2014; Grewal et al. 2004) and should be discussed further because the mechanisms behind the similar total effects vary between the two sectors. In the fashion sector, for example, retail brand equity dominates the path of the model by di-

	General models				Fashion sector models				Grocery sector models			
	Model 1: Fashion sector		Model 2: Grocery sector		Model 3: Utilitarian value		Model 4: Hedonic value		Model 5: Utilitarian value		Model 6: Hedonic value	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
VAL(1) → RBE(2)	.137	***	.104	***	.117	***	.100	**	.257	***	.151	**
RBE(1) → VAL(2)	.329	***	.097	***	.316	***	.385	***	.355	***	.101	*
VAL(1) → LOY(2)	.131	***	.085	***	.106	***	.149	***	.093	*	.057	†(p=.069)
RBE(1) → LOY(2)	.181	***	.125	***	.122	***	.115	**	.091	***	.057	***
VAL(1) → VAL(2)	.536	***	.502	***	.500	***	.490	***	.690	***	.881	***
RBE(1) → RBE(2)	.744	***	.771	***	.748	***	.737	***	.812	***	.809	***
LOY(1) → LOY(2)	.693	***	.511	***	.636	***	.624	***	.673	***	.570	***
VAL(2) → RBE(3)	.194	***	.130	***	.159	***	.144	**	.180	***	.112	**
RBE(2) → VAL(3)	.251	***	.136	***	.259	***	.309	***	.333	***	.102	*
VAL(2) → LOY(3)	.124	***	.094	***	.108	***	.157	***	.064	*	.057	†(p=.071)
RBE(2) → LOY(3)	.113	***	.121	***	.090	***	.085	**	.080	**	.060	***
VAL(2) → VAL(3)	.617	***	.798	***	.566	***	.565	***	.502	***	.853	***
RBE(2) → RBE(3)	.700	***	.857	***	.736	***	.737	***	.732	***	.629	***
LOY(2) → LOY(3)	.399	***	.601	***	.511	***	.491	***	.697	***	.737	***
R^2 LOY	.294	***	.515	***	.377	***	.400	***	.594	***	.623	***
I. Total effect of RBE(1) on LOY(3)	.197	***	.178	***	.163	***	.180	***	.151	***	.096	***
II. Total effect of VAL(1) on LOY(3)	.134	***	.111	***	.119	***	.158	***	.130	**	.102	*
Differences in total effects (*t*-values)												
- Total effect I vs. II	2.876	***	2.587	**								
- RBE(1) on LOY(3) (models 4 vs					.851	ns			5.643	***		
- VAL(1) on LOY(3) 3, and 5 vs 6)					2.492	**			2.786	***		
Covariates												
GEN(1) → LOY(1)	.053	**	-.021	**	.034	***	.048	**	.012	ns	.013	ns
GEN(2) → LOY(2)	.044	**	-.027	**	.034	***	.048	**	.001	ns	.002	ns
GEN(3) → LOY(3)	.063	**	-.029	**	.042	***	.061	**	.002	ns	.002	ns
AGE(1) → LOY(1)	.000	ns	.007	ns	.010	ns	.001	ns	.000	ns	.000	ns
AGE(2) → LOY(2)	.000	ns	.009	ns	.010	ns	.001	ns	.000	ns	.000	ns
AGE(3) → LOY(3)	.000	ns	.010	ns	.012	ns	.002	ns	.000	ns	.000	ns
FAM(1) → LOY(1)	.244	***	.031	ns	.202	***	.224	***	.056	*	.052	*
FAM(2) → LOY(2)	.206	***	.038	ns	.208	***	.228	***	.058	*	.063	*
FAM(3) → LOY(3)	.276	***	.043	ns	.244	***	.271	***	.063	*	.063	*

Structural model fits:
Model 1: CFI .916; TLI .904; RMSEA .079; $\chi^2(644) = 1495.847$; Scaling correction factor for MLM = 1.10. Model 2: CFI .923; TLI .911; RMSEA .067; $\chi^2(644) = 1328.982$; SCF = 1.16.
Model 3: CFI .912; TLI .910; RMSEA .079; $\chi^2(439) = 1089.749$; SCF for MLM = 1.11. Model 4: CFI .927; TLI .915; RMSEA .072; $\chi^2(437) = 927.637$; SCF = 1.10.
Model 5: CFI .954; TLI .944; RMSEA .060; $\chi^2(433) = 793.459$; SCF for MLM = 1.05. Model 6: CFI .947; TLI .935; RMSEA .065; $\chi^2(432) = 850.428$; SCF = 1.06.
Note: VAL = Perceived value; RBE = Retail brand equity; LOY = Loyalty; (1, 2, 3) = time points; SCF = Scaling correction factor for MLM. Standardized coefficients are shown.
*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; ns = not significant.

Table C-10: Results

Source: Own creation.

rectly influencing loyalty more than or as strongly as perceived value at all time points and particularly by influencing value perceptions much more strongly than value influences retail brand equity. By contrast, in the grocery sector, retail brand equity directly affects loyalty more strongly than value does at all time points, but the paths of the reciprocal relationship are nearly equal.

Concerning the reciprocity in fashion retailing, the effects of perceived value on retail brand equity are almost equally strong for hedonic value and for utilitarian value over time (hedonic: $\beta_{1\text{-}2} = .100$, $p < .01$; $\beta_{2\text{-}3} = .144$, $p < .01$; utilitarian: $\beta_{1\text{-}2} = .117$, $p < .001$; $\beta_{2\text{-}3} = .159$, $p < .001$; difference tests: : $t_{1\text{-}2} = .384$, $p > .10$ and $t_{2\text{-}3} = .242$, $p > .10$), whereas the effects of retail brand equity on perceived value are by trend stronger for hedonic value (hedonic: $\beta_{1\text{-}2} = .385$, $p < .001$; $\beta_{2\text{-}3} = .309$, $p < .001$; utilitarian: $\beta_{1\text{-}2} = .316$, $p < .001$; $\beta_{2\text{-}3} = .259$, $p < .001$; difference tests: : $t_{1\text{-}2} = 1.152$, $p > .10$ and $t_{2\text{-}3} = .095$, $p > .10$). Hence, H3a cannot be supported. However, H3b is supported, as the total effects of hedonic value on loyalty are significantly stronger than those of utilitarian value (model 4 vs. model 3: $\beta_{HVAL} = .158$, $p < .001$; $\beta_{UVAL} = .119$, $p < .001$; difference test: $t = 2.492$, $p < .01$). Concerning the reciprocity in grocery retailing, the effects of perceived value on retail brand equity are significantly stronger for utilitarian value than for hedonic value (utilitarian: $\beta_{1\text{-}2} = .257$, $p < .001$; $\beta_{2\text{-}3} = .180$, $p < .001$; hedonic: $\beta_{1\text{-}2} = .151$, $p < .01$; $\beta_{2\text{-}3} = .112$, $p < .01$; difference tests: $t_{1\text{-}2} = 2.472$, $p < .05$ and $t_{2\text{-}3} = 2.450$, $p < .05$), and the same accounts for the effects of retail brand equity on perceived value (utilitarian: $\beta_{1\text{-}2} = .355$, $p < .001$; $\beta_{2\text{-}3} = .333$, $p < .001$; hedonic: $\beta_{1\text{-}2} = .101$, $p < .05$; $\beta_{2\text{-}3} = .102$, $p < .05$; difference tests: $t_{1\text{-}2} = 3.283$, $p < .01$ and $t_{2\text{-}3} = 3.302$, $p < .01$). H4a is thus supported. In support of H4b, the total effects of utilitarian value on loyalty are significantly stronger than those of hedonic value (model 5 vs. model 6: $\beta_{UVAL} = .130$, $p < .01$; $\beta_{HVAL} = .102$, $p < .05$; difference test: $t = 2.786$, $p < .01$). The unexpected result for H3a will be discussed in the next section.

4. General Discussion

The empirical results are relevant for the majority of retailers that need to focus on their positions as strong brands as well as on the value that they offer to customers, as previous studies do not indicate whether reciprocal relationships and total effects pertain to consumer loyalty. The observations of this study yield major theoretical and managerial implications.

4.1. Theoretical Implications

This study achieved its aim of observing a reciprocal relationship between retail brand equity and value and a generally stronger total effect of retail brand equity (as opposed to value) on loyalty in both retail sectors. These observations are notable because they underline the importance of the reciprocity of both constructs and because—even when reciprocity is suppressed—total effects are stable in the consciously selected retail sectors, although the extent of the reciprocal and total effects varies between the sectors. We add to retailing research by introducing the novel idea that perceived value and retail brand equity not only solely affect consumer behavior, but also by their reciprocal relationship. Furthermore we argue that these reciprocal relationships and total effects are affected by the shopping behavior in a specific retail sector (e.g., shopping frequency). Two conclusions are discussed in greater detail below.

The results theoretically imply that consumer loyalty is primarily grounded in an overall perception of a retailer as a strong, well-known and attractive brand and that value effects mediate brand effects (e.g., Grewal et al. 2004) and determine retail brand equity (e.g., Chaudhuri and Ligas 2009). Scholars should thus consider bidirectional relationships to prevent biased conclusions. However, the goal theory-based reasoning in H2 was not supported, and schema theory thus appears to be advantageous in explaining the effects of the observed relationships. Brand schemata are likely to be deeply anchored in the minds of consumers and thus appear to dominate over goals in their decision making. Goals might explicitly influence schema building, but through practice, they may become more implicit through schema integration. Although consumers might behave in a certain goal-oriented way without realizing the underlying goal that they are pursuing, they might be driven by a brand schema that they can access. In this vein, similar mechanisms are as valid for retailers as they are for product brands, for which brand nodes dominate attribute nodes more strongly than the reverse. More information about reciprocity and direct paths is needed because, for example, goal theory makes it possible to understand motivations as a predisposition that is context specific. This study likely captured the first aspect primarily when questioning consumers in their homes. Furthermore, value may be more difficult for consumers to evaluate than retail brand equity, which is likely to cause halo effects (e.g., the stability of direct effects is greater for retail brand equity, e.g., in fashion: $\beta_{RBE1\text{-}2} = .744$, $\beta_{RBE\ 2\text{-}3} = .700$ vs. $\beta_{VAL1\text{-}2} = .536$, $\beta_{VAL2\text{-}3} = .617$). Further research is needed to determine how these relationships are moderated by the retailing context and how the mechanisms vary over time.

The reciprocity and the paths to loyalty differ between the two sectors. In fashion retailing, for example, the "retail brand equity → value" effect is twice as strong as the reverse effect, whereas the "retail brand equity → loyalty" and "value→loyalty" direct links appear to be quite similar as a trend. By contrast, in grocery retailing, the reciprocal links between value and retail brand equity are almost equally strong, whereas the "retail brand equity →loyalty" direct link is stronger than "value→loyalty". This result allows at least two conclusions. Scholars should be aware of retail sectors as an important context variable in analyzing the antecedents or effects of perceived value. Retailers from either sector must strongly position their brands in the minds of their target groups (especially in fashion) while simultaneously offering value, which determines loyalty and affects brand associations. Retailers such as The Gap and Tesco may follow the most successful paths observed in their sectors. Aiming to strengthen the generalizability of this study's results, this study intentionally chose not to observe particular retailers with respect to their intra- and inter-format competition. Observing particular retail firms and formats may provide an interesting avenue for future investigations (e.g., Cleeren et al. 2010).

The second research aim responds to calls in the literature (e.g., Carpenter 2008) and aims to determine whether reciprocal effects between retail brand equity and utilitarian value and hedonic value as well as the total effects of retail brand equity and utilitarian/hedonic value on loyalty are stable or whether they vary between retail sectors. The overall value conceptualization used above is disaggregated in this study, and the understanding of successful paths in both sectors is extended.

In the fashion sector, retail brand equity dominates the reciprocal effect in both the utilitarian and hedonic value models, but the effect of hedonic value on retail brand equity is weaker than the effect of utilitarian value on retail brand equity. Nevertheless, in terms of total effects, hedonic value influences loyalty more strongly than utilitarian value does (total effects β_{HVAL} = .158 vs. β_{UVAL} = .119), whereas the total effect of retail brand equity on loyalty is stronger than the total effect of both value dimensions. Considering the stronger role of retail brand equity—which fully determines loyalty and both value dimensions—this study concludes that a strong brand in particular and—more obviously—a strong emotional/social value proposition constitute the major success factors for fashion retailers. Because of the sample size and the complexity of the reciprocal models used in this study, item parceling was used for the perceived value scale—which resulted in a more optimal variable-to-sample-size ratio (Bandalos 2002). Yet, it was not possible to analyze how the reciprocity between the single value dimensions and retail brand equity is characterized or to implement perceived value as a second-order construct; this limitation sug-

gests a fruitful avenue for future studies. Thus, this work did not hypothesize or analyze potential differences between emotional and social value, for example, although previous research suggests the possible existence of such differences (e.g., Kim and Hong 2011).

For grocery retailers, retail brand equity dominates the reciprocal effects, which are stronger in the utilitarian value model than in the hedonic value model, and the total effects are significantly stronger for utilitarian value than for hedonic value (total effects β_{UVAL} = .130 vs. β_{HVAL} = .102); however, the results draw a more complex picture. Retail brand equity is dominant in the context of utilitarian value effects (both total effects and reciprocal relationships); this dominance of retail brand equity supports the results of past studies and offers a path to success for retailers that primarily rely on utilitarian value. However, in the context of hedonic value, retail brand equity loses its predominant role. Grocery retailers that focus on social and emotional value may attract loyal consumers by more strongly focusing on these values than on retail brand equity. Value strongly drives positive brand perceptions that might therefore act as a mediator of value effects on loyalty. The opposite effect of retail brand equity on hedonic value is weaker, which results in a total effect of retail brand equity on loyalty that is weaker than the total effect of hedonic value.

4.2. Managerial Implications

For retail managers, who may have practical evidence on the reciprocal relationship between offered value and a strong retail chain brand it is beneficial to provide scientific evidence on how perceived value and retail brand equity relate to one another over time to contribute to their interdependencies and to determine, for example, which has a stronger effect on consumer behavior and how resources can be allocated efficiently. For example, retailers like Wal-Mart and Tesco as well as H&M and Zara which emphasize on offering more value to consumers may learn from this study that value comes second and furthermore strongly interacts with retail brand equity. Overall, the results suggest that, perceived value and retail brand equity individually as well as jointly—via their reciprocal relationship—affect consumers' loyalty and therefore contribute to the retailers' customer retention efforts. Taking this interaction into account, loyalty is more strongly affected by retail brand equity than by perceived value; hence, retailers should mostly focus on positioning their chains as strong, attractive, and unique retail brands to be perceived by consumers. Such efforts will promote consumer patronage behavior. Nonetheless, focusing solely on the stronger effects of retail brand equity is insufficient because perceived value affects brand perceptions as well and vice versa. Therefore retail managers

need to focus their strategies not only on both aspects, but even more on the interdependencies between them, i.e., when deciding on offered value keeping in mind how value might contribute to retail brand equity and when positioning their retail brand asking themselves how their retail brand might be related to offered value. Furthermore, they need to assure that consumers can easily link the value they perceive with the retail brand, so that the retailer can benefit from the reciprocal relationship between both constructs from a consumer perspective.

The results that highlight the specific importance of utilitarian and hedonic value in grocery and fashion retailing offer maybe not surprising guidelines for retail managers when deciding on an appropriate market strategy, which is emphasizing utilitarian (hedonic) value for grocery (fashion) retailers. But, besides the necessity to know which of both value types more strongly affects consumers they should take the interdependence with retail brand equity into account once more. The results show different interdependencies and different effects on consumer loyalty in the observed sectors. Beyond the results of this study, managers need to know how to deliver value, i.e., hedonic value by the recruitment and the training of frontline staff that needs the ability to deliver emotional and social value to the customer, or the design of an arousing store design, for example. However this view goes beyond the contribution of the present study.

5. Limitations and Further Research

To understand reciprocal relationships, further analyses are required, as this study is not without limitations. Three issues will be highlighted.

Although special attention was devoted to data collection, broadening the database would mitigate some of these limitations and allow for further conclusions. For example, future research could study specific firms, retail formats, or retail channels as well as additional retail sectors (e.g., consumer electronics retailing, the third largest sector in most western economies) or sectors-specific samples (e.g., more young women in fashion retailing instead of a census-based quota sampling, as they are an important consumer group in this sector) to analyze whether the reciprocity is stable or whether the effects vary in different contexts.

Because value propositions are highly subjective and the literature still lacks a standardized measurement, further research should differentiate how changes in utilitarian value and hedonic value (in terms of the dimensionality of the value conceptualization) may affect the analyzed relationships, by placing greater

emphasis on experiential value, for example (Babin et al. 1994; Smith and Colgate 2007). Alternative, but less common measurements also exist for retail brand equity (e.g., Jara and Cliquet 2012; Yoo and Donthu 2001). Further analyses may consider additional outcome variables (e.g., satisfaction, willingness to pay a price premium; see Carpenter 2008; Chaudhuri and Ligas 2009) or different stages of loyalty. In this vein, we could benefit from further analysis of whether hedonic value and utilitarian value or even individual value dimensions add to the different stages of loyalty in different ways, when examining the reciprocal relationship (Harris and Goode 2004). Furthermore, we use retail sectors as moderating factors but were not able to account for specific differences between them, by using continuous sector-specific moderators, for example. Although we applied a quite complex panel design, an additional experiment may be suitable to demonstrate our two mechanisms (Antonakis et al. 2014).

Concerning our theory and the results the proposition that the close link between consumers' motivations and perceived value would lead to stronger total effects on loyalty, compared with the influence of retail brand equity, was not supported in this study. To gain insight into this complex relationship, future studies should gain further insight into links to loyalty by analyzing whether the strength of the total effects differs as a result of individual differences among consumers, for instance, when considering brand-schematic and brand aschematic consumers (Puligadda et al. 2012). While we have conceptualized retail brand equity at the retail chain level an analysis of on corporate level or store level may lead to varying conclusions (e.g., Hartman and Spiro 2005; Swoboda et al. 2013a). It might also be fruitful to elucidate the reciprocity contextualized by particular shopping motives (e.g., shopping for daily requirements vs. shopping for gifts) because we know situational differences of shopping motives and the importance of offered value dimensions exist (e.g., Overby and Lee 2006). Similarly, the products that are purchased may transfer to retail brand perceptions but this study did not control for this (e.g., in fashion retailing). Further contextual factors may also represent important boundary conditions for the reciprocal effects on consumer behavior, such as brand familiarity (Inman et al. 2009).

D. Study 3: Interdependencies within Multichannel Retail Structures

1. Introduction

In the past decade the retail landscape has faced radical changes, as stationary retailers increasingly add online channels using the same brand name and focus on their brand strength to manage synergies between their channels and to enhance consumers' overall retail experience and loyalty toward a retailer (e.g., Verhoef et al. 2015; Wang et al. 2009). For example, Walmart announced positioning to succeed at the convergence of their channels to expand their reach and to bond customers and invested 1 bn US$ in 2015. Similarly, British Next, which experienced 150% growth in its online channel over the past decade, has observed strong channel interdependencies (Next 2014; Walmart 2014). Hence, retailers that establish a new online channel under the same brand name need to understand how their channels co-influence consumer behavior toward the firm (Hammerschmidt et al. 2015). Consumers choose retail channels based on their goals and beliefs, and use a retailer's brand as an important clue to organize information and to simplify decision making in both the virtual and traditional channels (Kwon and Lennon 2009a; Yang et al. 2013). However, retailers' offline channel performance may influence online services and brand perceptions, whereas retailers' online channels may dilute perceptions of offline channels when they fail to meet consumers' offline-based goals. This study addresses such interdependencies because knowledge of bidirectional relationships is of paramount importance in crafting integrated multichannel strategies and because the paths to loyalty are likely to vary in different contexts.

Scholars have often analyzed the interdependencies between retail channels by assessing effects on either a single channel or multiple channels (see Figure D—1). Most studies address unidirectional relationships. Focusing on influences on one channel, Melis et al. (2015) analyze the effects of the multichannel retail mix on online store choice. Kwon and Lennon (2009b) examine offline-online image links, whereas Badrinarayanan et al. (2012) show that the image of and trust toward offline and online channels affect online purchase intentions. Considering effects on multiple channels (e.g., online and offline channel retention and sales), Herhausen et al. (2015) examine online-offline integration, whereas Van Baal (2014) examines online/offline activities. Thus, most scholars take a perspective from online to offline or vice versa. Few studies address bidirectional relationships, which are important to fully understand the interdependencies. Badrinarayanan et al. (2012) and Montoya-Weiss et al.

J.K. Weindel, *Retail Brand Equity and Loyalty*, Handel und Internationales Marketing / Retailing and International Marketing, DOI 10.1007/978-3-658-15037-2_4

(2003) analyze the crosswise effects of offline trust and attitude transfer on satisfaction and purchase intentions in online channels. Focusing on multiple channels, Kwon and Lennon (2009a) examine the crosswise effects of positive vs. negative mock websites and fashion stores with regard to brand beliefs, attitudes, and offline/online purchase intentions. Verhoef et al. (2007b) and Chiu et al. (2011) investigate search and purchase and free-riding behavior across channels. Thus, scholars highlight the need for bidirectional approaches to fully reveal the channel synergies and interdependencies of often unidirectional analyzed effects. Stationary retailers' multichannel activities emphasize the need for a deep understanding of interdependencies for strategic decisions (Van Bruggen et al. 2010). However, less is known about the crosswise paths that drive retailer patronage within multichannel structures. To the best of this study's knowledge, reciprocal relationships are unaddressed.

		Number of influenced channels	
		Single	Multiple
Channel effects	Unidirectional		
	▪ *Offline or online channel*	▪ Gupta et al. (2004) ▪ Kuan and Bock (2007) ▪ Kwon and Lennon (2009b) ▪ Ofek et al. (2011) ▪ Pauwels et al. (2011) ▪ Van Nierop et al. (2011)	▪ Biyalogorsky and Naik (2003)
	▪ *Offline and online channel*	▪ Ahn et al. (2004) ▪ Badrinarayanan et al. (2012) ▪ Melis et al. (2015) ▪ Verhagen and van Dolen (2009) ▪ Wallace et al. (2004) ▪ Wang et al. (2009) ▪ Yang et al. (2013)	▪ Avery et al. (2012) ▪ Cao and Li (2015) ▪ Emrich et al. (2015) ▪ Heitz-Spahn (2013) ▪ Herhausen et al. (2015) ▪ Pauwels and Neslin (2015) ▪ Strebel et al. (2004) ▪ Van Baal (2014)
	Bidirectional		
	▪ *Crosswise*	▪ Badrinarayanan et al. (2014) ▪ Montoya-Weiss et al. (2003)	▪ Kwon and Lennon (2009a) ▪ Chiu et al. (2011) ▪ Verhoef et al. (2007b)
	▪ *Reciprocal*	▪ none	▪ This study

Figure D—1: Review on empirical literature on channel relations in retailing

Source: Own creation.

This study aims to analyze interdependent effects within today's typical retail channel structures, specifically, the crosswise and reciprocal relationships among offline and online brand beliefs, retail brand equity and consumers' loyalty. Crosswise relationships apply effects between downstream variables (e.g., offline brand beliefs and online retail brand equity) between channels, whereas reciprocal relationships apply feedback loops between variables on the same hierarchical level (e.g., offline retail brand equity and online retail brand equity) between channels. In multichannel structures, these bidirectional relationships are important as they represent interdependencies between offline and online channels that relate to consumer channel perception, long-term retail brand equity and loyalty to the retailer.

In particular, the first aim of this study is to ask whether offline brand beliefs and online brand beliefs crosswise determine offline and online retail brand equity and loyalty to a retailer and how the paths to loyalty vary when focusing on retail sectors and differently performing retailers. Contextualizing the paths contributes to the extant literature, which focuses on online affine sectors (e.g., electronics). Fashion and grocery retailing are analyzed as they are the largest retail sectors in most western economies (e.g., Planet Retail 2013) and because behavior and channel experience vary in both sectors (e.g., Melis et al. 2015). Multichannel systems are well established in fashion (vs. grocery) retailing, so it is observed whether differences occur with a varying integrational depth of those systems. Moreover, scholars have addressed the role of channel performance (Kwon and Lennon 2009a) but have left room to analyze the paths to success of retailers with weak vs. strong prior brand performance in offline and online channels (e.g., Badrinarayanan et al. 2012). Loyalty to a retailer is examined as the study's focus lies on the consumers' overall retail experience and its outcome rather than a channel specific perspective. Conative loyalty is chosen (i.e., the intention and readiness to purchase at a retailer or to recommend him; see Oliver 1999), as it is a predictor of consumer spending and a main cross-channel objective in multichannel retailing (e.g., Verhoef et al. 2015).

Second, this study aims to ask whether reciprocal relationships between offline retail brand equity and online retail brand equity exist and how they influence conative loyalty in the two retail sectors. This contributes to the literature as few scholars have analyzed crosswise relationships but call for research on reciprocity between offline and online brand associations (e.g., Kwon and Lennon 2009b; Montoya-Weiss et al. 2003; Zhang et al. 2010). The latter are important because retail brand perceptions particularly determine patronage behavior and, thus, retailers' strategies to achieve channel synergies and interdependencies in order to deliver a superior overall retail experience to consumers.

The remainder of this study proceeds as follows. Drawing from theory and literature we first derive the hypotheses and test them empirically. We analyze the crosswise and reciprocal effects based on two cross sectional designs and two longitudinal designs in fashion retailing and in grocery retailing. After presenting the results, we discuss the implications and provide avenues for further research.

2. Conceptual Framework and Hypothesis Development

To address these research questions, theoretical considerations of two well-established theories are used, following Kwon and Lennon (2009a). The theory of reasoned action (Ajzen and Fishbein 1980) and the summative model of attitudes (Fishbein and Ajzen 1975) address how behavior is driven by behavioral intentions that originate from an individuals' sum of salient beliefs. The theory of cognitive dissonance focuses on an individual's need to keep internal consistency among cognitions (Festinger 1957; Festinger and Carlsmith 1959). The combination of both theories provides rationales for possible reciprocal effects. The framework proposes that the crosswise relations between channels' brand beliefs and retail brand equity affect conative loyalty and that those relationships vary across retail sectors and for retailers with prior strong (vs. weak) offline channel performance and online channel performance (OfP, OnP). Moreover, offline retail brand equity and online retail brand equity are proposed to reciprocally affect conative loyalty differently across retail sectors (see Figure D—2).

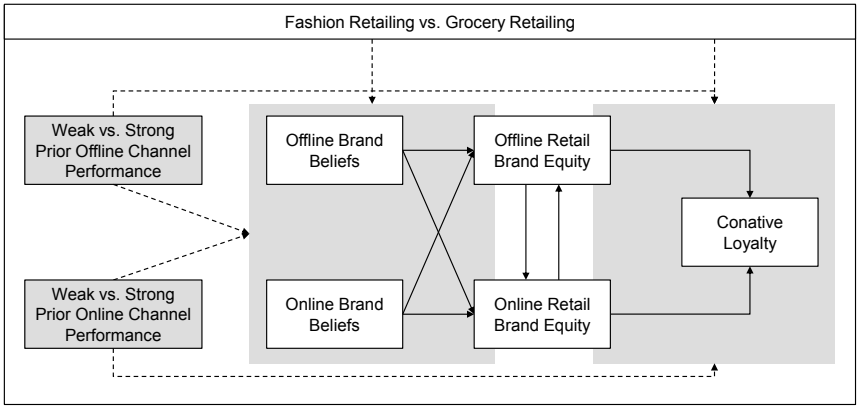


Figure D—2: Conceptual framework

Source: Own creation.

The theory of reasoned action postulates that consumers' brand beliefs, defined as the attributes, characteristics, and benefits that consumers connect with a particular object, affect the formation of an attitude toward this object, which determines the intended behavior (Ajzen 2005; Ajzen et al. 1995; Fishbein 1967). In the framework, salient brand beliefs evolve as consumers link attributes and benefits to a retailer's offline and online channels. Brand beliefs determine retail brand equity, i.e., consumers' associations of a retailer's

channel as a strong, attractive, and unique brand (Ailawadi and Keller 2004; Hartman and Spiro 2005). Retail brand equity is addressed as an attitudinal construct for three reasons. First, retail brand equity is mostly conceptualized as the knowledge and image of a retailer, i.e., attitudes from the consumer perspective (Keller 1993, 2003). Second, retailers increasingly position their channels as strong brands to embed easily accessible information that is known to determine conative loyalty (e.g., Swoboda et al. 2013a). Third, the addition of a new channel to existing channels under the same brand name can be regarded as a brand extension, and spillover effects may occur (Gensler et al. 2012). Associations like those of an added online channel, can easily be accessed and compared and thus contribute to attitude formation (Fishbein and Ajzen 1975). Hence, interdependencies between the consumer's perceptions of both channels are likely. The mechanism whereby evaluations of brand beliefs lead to the formation of attitudes toward a particular object (Fishbein 1967) applies to the relationship between consumers' brand beliefs and the retail brand equity of a particular channel. Moreover, the attributes and benefits that consumers assign to an offline channel and those they assign to an online channel crosswise determine both offline retail brand equity and online retail brand equity. Theoretically, however, crosswise mechanisms are likely to vary in strength. Salient beliefs are those that are experienced most recently and most frequently (Ajzen et al. 1995; Fishbein and Ajzen 1975). Thus, brand associations and behaviors are affected by the frequency of contact with brand attributes and beliefs of both channels.

In addition to the transferability of offline brand beliefs and online brand beliefs as well as offline retail brand equity and online retail brand equity, retailers must address the congruency of channels to interdependently affect consumers (Badrinarayanan et al. 2012). The theory of cognitive dissonance addresses inconsistencies within consumers' brand beliefs or brand associations based on the assumption that consumers strive for consonance among their beliefs and associations (Festinger 1957). When consumers are faced with (new) information about an object, they compare it with their existing knowledge on and/or their experience with that object. When information is consistent with current knowledge, consumers integrate it into their existing knowledge. Thus, if consumers' expectations are consonant with an retail experience, these expectations will positively influence conative loyalty toward the retailer (Lin et al. 2009). However, consumers also integrate the information from retail experiences with their existing knowledge and their expectations for future retail experiences. Thus, expectations might vary with subsequent contacts depending on retailer performance and its channels. When consumers are confronted with new information about an online channel, for example, they integrate this information into their existing knowledge and ex-

pectations of the offline retail brand. From current knowledge deviating information leads to dissonance that motivates consumers to reestablish consonance (Festinger 1957; Festinger and Carlsmith 1959). Such mechanisms may evolve within brand associations, such as offline retail brand equity and online retail brand equity of a multichannel retailer. For example, in situations in which consumers have strong (vs. weak) brand associations and receive contradictory or new information on channel attributes, they may feel pressure to respond by adjusting their existing knowledge on channel beliefs and attitudes to achieve cognitive consonance (Festinger 1957).

Next, the hypotheses proposed in this study are developed. The crosswise effects between channels and the paths to conative loyalty are discussed first (comparing retail sectors and differing OfP and OnP retailers), followed by a discussion of the reciprocal effects between channels.

2.1. Crosswise Effects within Channel Structures and the Paths to Conative Loyalty

The theory of reasoned action implies crosswise relations between a multichannel retailer's brand beliefs and brand associations and their influence on conative loyalty. Given that retailers operate their channels under the same brand name, salient beliefs can be attributed to either channel because they are highly associated with each other (e.g., Van Baal 2014; Wang et al. 2009). This holds because salient beliefs are those beliefs that are experienced most frequently (Ajzen et al. 1995; Fishbein and Ajzen 1975). Consumers are therefore likely to rely on both offline brand beliefs and online brand beliefs when evaluating the offline or the online retail brand because they may have been confronted with beliefs that are attributed to either the offline or the online channel. Scholars have shown that consumers carry their experiences from one channel to another (e.g., Kuan and Bock 2007; Van Nierop et al. 2011) and that the attitude toward a channel is influenced by both offline brand beliefs and online brand beliefs (Kwon and Lennon 2009a). The following initial hypothesis is proposed:

H1. A multichannel retailer's (a) offline brand beliefs have a positive effect on online retail brand equity, whereas (b) online brand beliefs have a positive effect on offline retail brand equity.

To better understand the paths to consumers' conative loyalty, the total effects (i.e., the sum of direct and indirect effects), first, with regard to the role of

online brand beliefs and offline brand beliefs on conative loyalty and second, with regard to retail sectorial differences, are addressed.

The theoretical reasoning leads to assume that both offline brand beliefs and online brand beliefs positively determine conative loyalty but that the total effect will be stronger for offline brand beliefs. According to dissonance theory (e.g., Festinger 1957; Festinger and Carlsmith 1959), as a result of their striving for cognitive consonance among information, loyal consumers with positive offline brand beliefs will develop positive offline and online brand associations that influence conative loyalty. The theory of reasoned action and the summative approach suggest that loyal consumers' online and offline retail brand equity are formed based on salient beliefs that are attributed to either channel but vary due to the frequency and recency consumers are either confronted with the belief or access it (Ajzen et al. 1995; Fishbein and Ajzen 1975). When observing former brick-and-mortar retailers, its seems obvious that loyal consumers have well-established salient offline brand beliefs that more strongly determine both retail brand equities than online brand beliefs do (Verhagen and van Dolen 2009).

In line with this reasoning, different total effects between fashion and grocery retailing are assumed. Three arguments underlie this rationale. First, in fashion (vs. grocery) retailing, online channels have been established for far longer, and consumers have longer experiences and established brand beliefs and retail brand equity toward a preferred retailer in both channels. In contrast, in grocery retailing, online channels have been introduced more recently, and consumers rely more strongly on offline experiences when choosing a retailer due to lesser online experiences (Melis et al. 2015). Second, the introduction of online channels has changed the retail environments in both retail sectors, though the extent of these changes varies. In fashion retailing online retailing is very dominant and is regarded as a disruptive change, whereas in grocery retailing the impact of online channels is considered to be less disruptive (Verhoef et al. 2015). Third, consumers behave differently in these two sectors. For example, consumers are more accustomed to choosing fresh food on their own by haptic examination and by relying on utilitarian value when selecting a grocery retailer (e.g., Kerin et al. 1992). In contrast, hedonic value and retail brand equity are of higher importance in fashion retailing (e.g., Kim and Hong 2011; Swoboda et al. 2013a). The following hypothesis is proposed:

H2. The (a) total effects of offline brand beliefs on conative loyalty will be stronger than those of online brand beliefs on conative loyalty in both sectors, whereas (b) both total effects will be stronger in fashion (vs. grocery) retailing.

2.2. Paths within Strong and Weak Offline and Online Channels

In this section, the crosswise paths of offline/online brand beliefs to conative loyalty for retailers with weak vs. strong performance are addressed. OfP and OnP embody consumer's associations of the specific channel as a strong, unique, and attractive brand (Keller 1993; Page and Herr 2002).

As discussed, according to dissonance theory (Festinger 1957), it is likely that when consumers receive new information (e.g., on attributes or perceptions of a channel), they verify whether that information is consistent with their existing knowledge by integrating the information into their existing knowledge. If it causes dissonance, they will reinstate cognitive consonance by extending or altering their knowledge. For weak (strong) OfP, for example, consonance across retailer information is achieved when online channel perceptions correspond with the weakness (strength) of OfP (Van Birgelen et al. 2006). Consequently, consumers evaluate brand beliefs and the retail brand equity of a retailers' channel according to prior channel performance. Rationales for the influence of both OfP and OnP are provided subsequently.

Brand beliefs and retail brand equity are likely to be evaluated less favorably when OfP is weak and more favorably when OfP is strong because loyal consumers tend to adapt their prior perceptions to facilitate the cognitive processing of information. Thus, a weak (vs. strong) OfP leads to conative loyalty along various paths. For example, a retailer whose OfP is considered weak can expect a weaker relationship between offline brand beliefs, online retail brand equity, and conative loyalty because the OfP perceptions lead to a less favorable evaluation. The same retailer is likely to expect a weaker relationship between online brand beliefs, offline retail brand equity, and conative loyalty as well because the OfP may lead to less favorable evaluations of online brand beliefs as they may be more salient within consumers' decision-making processes. In addition, the total effects of both types of brand beliefs on conative loyalty are likely to be weak. In contrast, for a strong OfP, indirect and total effects should be stronger because prior perceptions act as a halo and affect the evaluation of a channel via belief-weight adjustment (Ajzen and Fishbein 1980, p. 6).

When the retailer is a priori attributed a strong vs. weak OnP, consumers are motivated to hold a consonant set of information about the retailer, or, if dissonance occurs, they are motivated to achieve consonance by justifying or adjusting their attitudes, beliefs, and behavior (Festinger 1957). Hence, a weak (vs. strong) OnP will result in weak (vs. strong) evaluations of brand beliefs and retail brand equity, which affects conative loyalty. A retailer with a weak OnP is expected to have a weaker relationship between online brand beliefs, offline retail brand equity, and conative loyalty because weak OnP perceptions

result in less favorable evaluations of brand beliefs and retail brand equity. Thus, the retailer is likely to expect weaker effects between offline brand beliefs, online retail brand equity, and conative loyalty because within consumers' decision-making process, offline brand beliefs may be salient as well. In addition to these paths to conative loyalty, the total effects of both offline and online brand beliefs on conative loyalty should be weaker. For a retailer with a strong OnP, the indirect and total effects leading to conative loyalty will be stronger because, again, halo effects of a priori perceptions should occur. Therefore, the following is concluded:

H3. For strong (vs. weak) OfP retailers, (a) the total effects of offline brand beliefs and online brand beliefs on conative loyalty, (b) the indirect effect of offline brand beliefs on conative loyalty via online retail brand equity and (c) the indirect effect of online brand beliefs on conative loyalty via offline retail brand equity will be stronger.

H4. For strong (vs. weak) OnP retailers, (a) the total effects of offline brand beliefs and online brand beliefs on conative loyalty, (b) the indirect effect of offline brand beliefs on conative loyalty via online retail brand equity and (c) the indirect effect of online brand beliefs on conative loyalty via offline retail brand equity will be stronger.

2.3. Reciprocity between Offline and Online Retail Brand Equity in Retail Sectors

Both offline retail brand equity and online retail brand equity share content and meaning with each other as they are highly related and both represent the strength, uniqueness and attractiveness of the offline and online retail brand (Hartman and Spiro 2005). As mentioned, when a retailer decides to add an online channel to an existing offline channel, the existing offline retail brand equity is easily transferable to the online channel and is easy to link within consumer memory and vice versa (Keller 2003). A reciprocal relationship between the retail brand equities of both channels seems to be obvious because most retailers start from an existing offline channel and consumers are likely to have first been confronted with the offline retail brand equity, which influences the formation of new associations but is also influenced by new information (Verhoef et al. 2007b).

Nevertheless, the total effect of offline and online retail brand equity on conative loyalty is likely to differ when focusing on former stationary retailers. The offline retail brand equity represents the parent brand (i.e., considering the addition of the online channel as a brand extension) and thus is likely to have

stronger effects on conative loyalty than the online retail brand equity (i.e., the brand extension) (e.g., Gensler et al. 2012). Because the evaluation of both retail brand equities depends brand touchpoints it is highly likely that offline retail brand equity is more salient and therefore can leverage from the retailer's brand strength (Baxendale et al. 2015; Keller 2003). Hence, the effect of offline retail brand equity on conative loyalty is likely to be higher than the effect of online retail brand equity. It is hypothesized:

H5. (a) Offline retail brand equity and online retail brand equity have a positive reciprocal relationship, whereas (b) the total effect on conative loyalty will be stronger for offline retail brand equity than for online retail brand equity.

The attitude-to-behavior relationship depends not only on perceptions of the retail channels but also on the context in which this relationship occurs (Fazio et al. 1989). Hence, it is likely that the effect of the reciprocal relationship on conative loyalty differs between fashion and grocery retailing as consumers exhibit different behaviors in these sectors. Two rationales underline the assumption that the effects are stronger in fashion retailing. First, as mentioned, online fashion channels have been in use for a longer time period and had a more disruptive impact on the retail environment (Verhoef et al. 2015). Thus, consumers are more likely to have been frequently confronted with both offline retail brand equity and online retail brand equity and have stronger online experiences. Due to frequent access to both retail brand equities, the link between them is likely to be well established (Campbell and Keller 2003). In contrast, online grocery channels have not been prominent for long, and the link between the two retail brand equities may be weaker. Second, in grocery retailing, consumers behave in a more habit-driven way by relying on haptic product examination (Childers et al. 2002), which is likely to influence channel evaluation. Due to their shopping behavior, it seems likely that consumers rely more strongly on the offline channel. In contrast, in fashion retailing, consumers are usually more hedonically oriented (Kim and Hong 2011) and may rely more strongly on the retail brand, which could mean that they rely on both offline and online channels. Therefore, the following is hypothesized:

H6. The (a) total effects of offline retail brand equity and online retail brand equity on conative loyalty and the (b) reciprocal effects between offline retail brand equity and online retail brand equity are stronger in fashion (vs. grocery) retailing.

3. Empirical Studies

3.1. Stimulus Development and Pretests

As stimuli for the studies, strong vs. weak retail brands with regard to consumers' perceptions of retailers' offline and online channels were chosen. To capture those brands, prior brand associations, that is, prior OfP and OnP referring to consumers' perceptions of retailers' offline or online channels as strong, attractive, or unique brands were focused on. Based on this study's theoretical reasoning, the extent to which brand associations share content and valence with each other strengthens the retail brand equity. Inconsistent brand associations temper consumers' perceptions (John et al. 2006; Keller 1993) and are likely to result in a weaker retail brand equity (Kwon and Lennon 2009a). Thus, consistent (vs. inconsistent) associations facilitate the construction of a strong (vs. weak) retail brand equity.

To select retailers with strong and weak OfP and OnP, the twelve best-known retail brands in both sectors were pre-tested. The brands were selected based on awareness data from prior studies and from a first pretest (N=258, quota sample). One fashion retailer and five grocery retailers did not have online stores. In a second pretest, a convenience sample of 15 consumers was used to pre-evaluate whether the OfP and OnP of the remaining brands were strong or weak using a seven-point, four item offline and online retail brand equity scale and using mean values. On this basis, eight fashion and seven grocery retailers were pre-categorized into four groups: a matrix with the axes of strong and weak OfP and OnP. Additionally, the pre-categorization was verified by objective performance measures using sales growth percentage (in the years 2010-2012; Planet Retail 2013). Three grocery retailers were eliminated because they only offered nonfood articles online and because the remaining four retailers fit into the four groups based on the objective sales data (see Appendix E.3.1) and the subjective consumer evaluations. In a final pretest (N = 223, quota sample), the respondents rated the brands again on a seven-point, four-item offline retail brand equity and online retail brand equity scale (see Table D-2; each respondent evaluated up to four retail brands they were familiar with in both sectors). Additionally, the respondents evaluated offline or online attributes and benefits scale items (1 = *strongly disagree*, 7=*strongly agree*): online aesthetic appeal, website content, navigation, and transaction convenience and offline assortment, price, layout, and communication (Kwon and Lennon 2009a; Swoboda et al. 2013a). According to the offline retail brand equity, up to three brands per sector were chosen to represent prior strong vs. weak OfP on the basis of exhibiting the most positive vs. negative mean values relative to the neutral point, 4.0 ($p < .05$ for H_0: $\mu = 4$; fashion: M_{strong} = 4.9–4.2 and M_{weak} = 3.8–1.8; grocery: M_{strong} = 5.0–4.1 and M_{weak} =

3.2–3.0). Brand belief evaluations varied accordingly (fashion: M_{strong} = 4.6–4.3 and M_{weak} = 3.8–2.7; grocery: M_{strong} = 4.9–4.5 and M_{weak} = 3.6–3.3). These brands were contrasted with the strength vs. weakness of OnP. The respondents were shown retailers' online stores and were asked to complete a purchase prior to the evaluations (i.e., a white t-shirt, blue jeans, and a jacket in the fashion sector and pasta, chocolates, and jam in the grocery sector). These low-involvement products represent typical products that are offered by retailers in their online channels and were selected as typical online purchases in the first pretest. The evaluations were used for the categorization of four retailers and were above or below the neutral point ($p < .05$ for H_0: $\mu = 4$; fashion: M_{strong} = 4.9–4.4 and M_{weak} = 3.7–2.8; grocery: M_{strong} = 4.9–4.5 and M_{weak} = 2.8–2.6). The results related to brand beliefs varied accordingly (fashion: M_{strong} = 5.1–4.6 and M_{weak} = 3.8–3.6; grocery: M_{strong} = 5.2–4.6 and M_{weak} = 3.6–3.2). These procedures guided the choice of the four most heterogeneous brands in each sector that best fit the matrix (fashion: two vertically integrated retailers, one department store retailer and one discount retailer; grocery: two supermarket and two hypermarket retailers). The stores were located in similar areas (e.g., shopping malls/city centers or the periphery), implying that they could be considered competitors. However, the brands did not have the same retail formats. Thus, the subsequent results are limited in this respect.

3.2. Sample and Procedure

Two empirical studies were conducted using longitudinal designs in two retail sectors: fashion and grocery retailing. To develop the samples, quota sampling was employed (using the national distribution of the population according to age and gender) for 300 consumers per retail sector, which were recruited from an existing consumer panel by telephone. The survey was conducted in three waves over a period of nine months with four months between each wave and with the same respondents in one German mid-sized city in 2013 and 2014. This period is adequate because inter-purchase times are known to be shorter in both retail sectors (e.g., 40 days offline in fashion and 4-7 days offline in grocery and 20 days online, Ghemawat and Nueno 2003; Melis et al. 2015). Trained and experienced interviewers conducted scheduled face-to-face in-home interviews using standardized questionnaires. To reduce possible selection bias, all interviewers had to survey equal numbers of respondents for both retail sectors (Patterson and Smith 2003). To avoid attrition, vouchers were used as incentives for completing all waves of the survey.

In the screening phase prior to the first wave, the respondents were first asked to list multichannel fashion or grocery retailers and then to name four retailers

from which they frequently shopped offline and mostly online. One retailer that fitted the matrix was randomly chosen for each respondent to evaluate in all subsequent waves. 27.4 percent of the grocery sample had not made an online purchase in the past six months prior to the screening phase, thus, they were asked to complete an online purchase. *T*-tests for independent samples for the key variables and demographics did not reveal significant differences between these respondents and respondents that made a recent online purchase. However, the results for the grocery sample are limited in this respect. In the three waves of the survey, the respondents were randomly selected to start with the evaluation of either the offline channel or the online channel at each time point.

	Realized quota sample (in %)						Planned quota sample (in %)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Fashion sector (N = 271)			*Grocery sector (N = 274)*					
Age 15-29	18.9	17.4	36.3	20.0	19.0	39.0	14.9	19.1	34.0
Age 30-39	14.1	14.4	28.5	12.1	13.1	25.2	10.6	12.8	23.4
Age 40-65	18.5	16.7	35.2	19.3	16.6	35.9	21.3	21.3	42.6
Total	51.5	48.5	100.0	51.4	48.6	100.0	46.8	53.2	100.0

Table D-1: Sample characteristics

Source: Own creation.

Only respondents who participated in all waves were included in the analysis and the Mahalanobis distance was used to identify outliers. Five and eight striking cases were found for the fashion and grocery samples, respectively, which were excluded from the analysis. This procedure resulted in a total of 271 and 274 observations per wave (fashion and grocery samples, respectively). With respect to the intended quotas, the 40–65 age group was slightly underrepresented in both samples (see Table D-1). Tests for normality showed deviations from univariate and multivariate normality for both samples. Therefore, the mean-adjusted maximum likelihood estimator (MLM) was chosen to test the hypotheses because it provides a robust chi-square test and handles potential threats within the data structure (Asparouhov 2005). Chi-square difference tests were conducted using scaling corrections (Satorra and Bentler 2001).

3.3. Measurements

Regarding the measures, first general aspects, such as the hierarchy of effects were considered. Second, scales from previous studies were used (using seven-point Likert-type scales from 1 to 7, ranging from strongly disagree to strongly agree; see Table D-2). Third, the model complexity and goodness of measurements were methodologically addressed. All scales were pretested by two consumer focus groups and a quantitative study (N = 258, quota sampling). The four retail brand equity items used in the pretests and in the scree-

Construct	Dimension	Item	Source
Offline brand beliefs	Assortment	ASS1: The assortment at the __ store is very good.	Chowdhury et al. (1998)
		ASS2: At the __ store I can find all the products I need very easily.	
		ASS3: The products are always available at the __ store.	
		ASS4: The __ store offers plenty of own brands.	
		ASS5: The quality of the products sold at __ is always very good.	
	Price	PRI1: I think the prices at the __ store are always reasonable.	Adapted from Berry (1969); Yoo et al. (2000)
		PRI2: I find that most products are offered at favorable prices over a long period.	
		PRI3: I find the price/performance ratio very good at the __ store.	
		PRI4: I find the special offers by the __ store very attractive.	
		PRI5: Compared to its competitors, the __ store has a good price level.	
	Layout	LAY1: I like the store layout of __ very much.	Chowdhury et al. (1998)
		LAY2: I can find my way around easily at my nearest __ branch.	
		LAY3: The __ store is well-assorted.	
		LAY4: The shopping atmosphere at the __ store is very pleasant.	
		LAY5: The __ store is always very clean.	
	Communi-cation	COM1: The __ store has excellent advertising.	Adapted from Hansen and Deutscher (1977); Berry (1969)
		COM2: I often see advertising by the __ store.	
		COM3: Advertising for the __ store is very informative.	
		COM4: The __ store has credible communication.	
		COM5: In addition to typical information, advertising by the __ store also provides additional information on the firm.	
Online brand beliefs	Aesthetic appeal	AES1: I like the feel of the web site of __.	Adapted from Kwon and Lennon (2009a)
		AES2: I like pictures/images used the web site of __.	
		AES3: I like the opening page of the web site of __.	
		AES4: The web site of __ makes the products look very appealing.	
	Navigation convenience	NAV1: I can easily find what I'm looking for in this web site.	
		NAV2: I can easily locate tabs and links on the web site of __.	
		NAV3: I can easily navigate around the web site of __.	
		NAV4: The web site of __ is well organized.	
	Transaction convenience	TRA1: I can order items easy on the web site of __.	
		TRA2: I can pay easy on the web site of __.	
		TRA3: The web site of __ is easy to use.	
	Web site content	WEB1: The web site of __ is informative.	
		WEB2: The web site of __ reflects the brand's merchandise well.	
		WEB3: The web site of __ seems to use advanced technologies.	
		WEB4: There are a lot of merchandise options you can choose from.	
Retail brand equity	Offline	OFF1: The store of__ is a strong brand.	Verhoef et al. (2007a)
		OFF2: The store of __ is a well-known brand.	
		OFF3: The store of __ is an attractive brand.	
		OFF4: The store of __ is a unique brand.	
	Online	ON1: The online store of__ is a strong brand.	
		ON2: The online store of __ is a well-known brand.	
		ON3: The online store of __ is an attractive brand.	
		ON4: The online store of __ is a unique brand.	
Conative loyalty		LOY1: I am certain that I will shop at __ again.	Adapted from Sirohi et al. (1998); Srinivasan et al. (2002)
		LOY2: In the future, I will purchase more at __ than at any other retailer.	
		LOY3: I would recommend __ to friends and others.	
		LOY4: When I need to make a purchase, __ is my first choice.	
Self-efficacy		SEL1: I am able to achieve the goals I have set for myself.	Adapted from Chen et al. (2001)
		SEL2: Even when I face difficult tasks, I am certain that I will accomplish them.	
		SEL3: Compared to other people, I can do most tasks very well.	
		SEL4: Even when things are though, I can perform quite well.	
Channel trust	Offline	TROF: Offline shopping is a trustworthy experience	Adapted from Rose et al. (2012)
	Online	TRON: Online shopping is a trustworthy experience.	
Channel attractive-ness	Offline	ATOF: The store of __ is attractive.	Adapted from Verhoef et al. (2007b)
	Online	ATON: The online store of __ is attractive.	

Table D-2: Measurements

Source: Own creation.

ning phase were again used in the main study (Verhoef et al. 2007a). Online brand beliefs were measured following Kwon and Lennon (2009a), whereas offline brand beliefs were measured using assortment, price, layout, and communication scales, which are known to determine retail brand equity (e.g., Swoboda et al. 2013a). Conative loyalty was measured with four items (adapted from Sirohi et al. 1998; Srinivasan et al. 2002). Self-efficacy was included as marker variable as well as channel trust and channel attractiveness (offline, online) as instrumental variables (IVs). Self-efficacy is theoretically unrelated to the model constructs (i.e., it is generally used to predict work-related outcomes; see Chen et al. 2001). For the crosswise models, channel trust (offline and online) was used as the IV for brand beliefs (offline and online). Trust is seen as a perception of competence, benevolence, and integrity, and it influences perceptions of how a channel delivers on expectations such as offline brand beliefs or online brand beliefs and is therefore considered to be a main determinant of brand beliefs (Bart et al. 2005; McKnight et al. 2002). For the reciprocal models, channel attractiveness was included as the IV because channel attractiveness—due to the theory of reasoned action—translates into retail brand equity formation through its representation of the overall beliefs inherited by the consumer (Verhoef et al. 2007b).

Because the sample structure does not fully meet the quota sampling and because consumer behavior might be influenced by gender (0 = male, 1 = female), age, income, household size, and internet expertise, they were included as covariates (e.g., Badrinarayanan et al. 2012; Roehm and Sternthal 2001). Finally, retailer familiarity, which we measured using a single item (according to Inman et al. 2009), was also included as covariate.

3.4. Method

To test the hypotheses, crosswise and cross-lagged structural equation models were estimated. The crosswise models are based on data from the first waves of the panel studies. To reduce the complexity of the models, item parceling for offline brand beliefs and online brand beliefs (according to Bandalos 2002) was used. Prior to item parceling, the reliability and validity of the brand belief scales for all models were confirmed (this resulted in the exclusion of one item of the assortment, price, and communication scale; see Appendix E.3.2). For the crosswise models, which include the parceled brand belief scales, construct and composite reliability for each construct at each time point (see Table D-3) was confirmed. All values were above the recommended thresholds. Face validity was assessed using pretests. In a few situations in which the criterion of Fornell and Larcker (1981) was violated, discriminant

		Fashion						Grocery						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Offline brand beliefs	ASS	3.7/1.4	.960	.649	.794	.773	.789	.958	4.6/1.1	.777	.636	.589	.702	.746	.832
	PRI	4.3/1.2	.561		.545			.549	4.4/1.1	.507		.502			.589
	LAY	3.9/1.5	.857		.686			.882	4.4/1.2	.883		.624			.586
	COM	3.4/1.2	.666		.636			.654	4.0/1.1	.602		.572			.856
Online brand beliefs	AES	4.7/1.3	.796	.736	.721	.872	.877	.908	4.3/1.4	.779	.705	.735	.879	.874	.929
	NAV	5.1/1.0	.875		.804			.789	4.9/1.1	.876		.791			.686
	TRA	5.2/1.1	.698		.638			.604	4.9/1.1	.745		.666			.555
	WEB	4.8/1.0	.848		.787			.842	4.4/1.3	.843		.798			.885
Offline retail brand equity	OFF1	4.0/1.8	.936	.793	.910	.959	.960	.952	4.2/1.3	.935	.820	.896	.945	.949	.968
	OFF2	4.1/1.8	.946		.918			.949	4.3/1.4	.946		.904			.936
	OFF3	4.1/1.7	.941		.915			.922	4.2/1.4	.882		.854			.903
	OFF4	3.7/1.8	.880		.861			.874	3.5/1.4	.844		.821			.828
Online retail brand equity	ON1	4.5/1.5	.940	.855	.915	.963	.963	.953	4.3/1.3	.921	.848	.893	.956	.943	.969
	ON2	4.4/1.5	.962		.934			.964	4.2/1.4	.940		.909			.922
	ON3	4.3/1.6	.959		.934			.946	4.2/1.5	.942		.914			.882
	ON4	3.9/1.6	.870		.856			.867	3.7/1.5	.878		.858			.825
Conative loyalty	LOY1	4.3/2.1	.841	.802	.805	.917	.926	.886	5.1/1.8	.676	.778	.635	.875	.858	.731
	LOY2	2.7/1.6	.916		.856			.869	3.1/1.6	.895		.804			.769
	LOY3	3.5/1.9	.882		.843			.891	3.8/1.6	.819		.763			.890
	LOY4	2.2/1.6	.818		.770			.827	2.6/1.7	.822		.739			.716

Confirmatory model fits:
Fashion sector: CFI .924; TLI .908; RMSEA .084; SRMR .044; $\chi^2(160) = 597.901$; SCF = 1.02.
Grocery sector: CFI .957; TLI .943; RMSEA .079; SRMR .037; $\chi^2(160) = 565.630$; SCF = 1.02.
Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; AES = Aesthetic appeal; NAV = Navigation convenience; TRA = Transaction convenience; WEB = Web site content ; OFF = Offline retail brand equity; ON = Online retail brand equity; LOY = Conative loyalty; MV/Std. = Mean values and standard deviations; FL = Factor loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.

Table D-3: Reliability and validity of the crosswise models

Source: Own creation.

validity was verified (see Table D-4) using a Wald test (Molenberghs and Verbeke 2007, see Appendix 3.2). The fit values of the confirmatory models were satisfactory. A similar procedure was applied for the cross-lagged models; again verifying reliability and validity (see Table D-5). Because some squared correlations exceeded the AVEs, discriminant validity was again verified using chi-square difference tests (see Table D-6). The fit values of the confirmatory models were satisfactory for both samples.

	Constructs	1	2	3	4	5
	Fashion					
1	Offline BB	**.626**				
2	Online BB	*.434*	**.575**			
3	Offline RBE	*.671*[a]	*.446*	**.669**		
4	Online RBE	*.557*	*.774*[a]	*.635*	**.758**	
5	LOY	*.593*[a]	*.493*	*.619*[a]	.487	**.511**
	Grocery					
1	Offline BB	**.633**				
2	Online BB	*.487*	**.529**			
3	Offline RBE	*.530*	*.384*	**.735**		
4	Online RBE	*.436*	*.834*[a]	*.449*	**.710**	
5	LOY	*.615*[a]	*.336*	*.479*	*.370*	**.560**

Confirmatory model fits:
Fashion sector: CFI .924; TLI .908; RMSEA .084; SRMR .044; $\chi^2(160)$ =597.901; SCF = 1.02.
Grocery sector: CFI .957; TLI .943; RMSEA .079; SRMR .037; $\chi^2(160)$ =565.630; SCF = 1.02.
Note: BB = Brand beliefs; RBE = retail brand equity; LOY = Conative loyalty; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table D-4: Discriminant validity of the crosswise models

Source: Own creation.

Prior to testing the hypotheses, we determined whether the measurements were invariant (see Appendix E.3.3). For the crosswise models, partial scalar invariance was ascertained between weak and strong OfP and OnP. For the cross-lagged models, partial scalar measurement invariance was attained over time for both samples (Byrne et al. 1989).

CMV was addressed a priori by using an appropriate questionnaire design, such as randomizing the question order. A posteriori, CMV was addressed by calculating a single-factor test. The model with all items loading on a single factor (fashion: CFI .772; TLI .736; RMSEA .177; SRMR .072; $\chi^2(164)$ =1543.715; grocery: CFI .773; TLI .721; RMSEA .167; SRMR .089; $\chi^2(164)$ =1411.699) showed significantly worse fit values than the proposed model did (fashion: $\Delta\ \chi^2(10)$ = 1115.398; $p < .001$; grocery: $\Delta\ \chi^2(10)$ = 978.442; $p < .001$). We applied the same procedure for all time points and the reciprocal models. Furthermore, we applied the marker variable technique (Lindell and Whitney 2001) using the latent variable approach of Williams et al. (2010) and the marker variable of self-efficacy. The tests indicated the remaining significant

		Time point one							Time point two							Time point three						
Construct	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion																						
Offline	OFF1	4.0/1.8	.936		.910			.951	4.0/1.8	.898		.865			.932	4.0/1.8	.929		.899			.951
retail	OFF2	4.1/1.7	.946	.793	.918	.959	.960	.953	4.1/1.7	.945	.795	.906	.945	.945	.954	4.0/1.7	.949	.769	.916	.953	.953	.965
brand	OFF3	4.1/1.7	.941		.915			.919	4.2/1.6	.867		.839			.864	4.1/1.6	.904		.878			.885
equity	OFF4	3.6/1.8	.880		.861			.868	3.8/1.7	.894		.864			.858	3.8/1.7	.874		.951			.848
Online	ON1	4.5/1.5	.940		.915			.951	4.3/1.6	.936		.911			.958	4.3/1.6	.948		.918			.957
retail	ON2	4.4/1.5	.962	.855	.934	.963	.964	.967	4.3/1.6	.969	.833	.940	.963	.962	.974	4.3/1.6	.968	.852	.935	.958	.959	.971
brand	ON3	4.3/1.6	.959		.934			.940	4.2/1.6	.936		.914			.916	4.3/1.5	.936		.911			.926
equity	ON4	3.9/1.6	.870		.856			.862	3.9/1.7	.886		.870			.866	4.0/1.7	.845		.830			.843
	LOY1	4.3/2.1	.841		.805			.853	4.2/2.0	.809		.782			.848	4.1/2.1	.821		.798			.841
Conative	LOY2	2.7/1.6	.916	.802	.856	.917	.926	.889	2.9/1.7	.929	.814	.875	.926	.932	.886	2.8/1.6	.936	.823	.887	.932	.940	.925
Loyalty	LOY3	3.4/1.9	.882		.843			.882	3.5/1.9	.931		.886			.922	3.3/1.9	.940		.900			.948
	LOY4	2.2/1.6	.818		.770			.849	2.5/1.6	.836		.792			.856	2.5/1.6	.858		.816			.866
Grocery																						
Offline	OFF1	4.1/1.4	.934		.885			.943	4.2/1.4	.923		.885			.933	4.2/1.4	.906		.868			.924
retail	OFF2	4.3/1.4	.949	.819	.895	.932	.931	.955	4.3/1.4	.948	.836	.905	.944	.943	.956	4.3/1.4	.949	.815	.903	.942	.940	.960
brand	OFF3	4.2/1.4	.837		.806			.826	4.4/1.4	.860		.834			.853	4.3/1.4	.898		.866			.876
equity	OFF4	3.5/1.5	.807		.781			.789	3.8/1.5	.869		.842			.854	3.9/1.5	.832		.808			.818
Online	ON1	4.3/1.4	.902		.872			.918	4.2/1.4	.928		.893			.939	4.2/1.4	.919		.886			.927
retail	ON2	4.2/1.4	.941	.837	.905	.950	.949	.950	4.2/1.4	.944	.844	.908	.951	.949	.955	4.2/1.4	.936	.858	.901	.950	.949	.937
brand	ON3	4.2/1.4	.943		.910			.924	4.2/1.4	.898		.872			.881	4.1/1.4	.907		.878			.899
equity	ON4	3.7/1.5	.854		.832			.843	3.8/1.5	.874		.851			.862	3.9/1.5	.875		.850l			.873
	LOY1	5.1/1.9	.648		.609			.632	4.9/1.8	.644		.607			.617	4.9/1.8	.646		.612			.617
Conative	LOY2	3.0/1.6	.895	.773	.795	.866	.866	.884	3.1/1.5	.880	.762	.785	.867	.867	.874	3.2/1.6	.873	.778	.794	.879	.879	.874
loyalty	LOY3	3.7/1.7	.812		.753			.813	3.8/1.6	.807		.751			.852	3.7/1.7	.868		.805			.852
	LOY4	2.5/1.7	.813		.724			.832	2.7/1.6	.841		.743			.874	2.8/1.7	.852		.764			.874

Confirmatory model fits:
Fashion: CFI .952; TLI .946; RMSEA .064; SRMR .050; $\chi^2(546) = 1149.526$; SCF = 1.17.
Grocery: CFI .953; TLI .945; RMSEA .061; SRMR .062; $\chi^2(546) = 1154.941$; SCF = 1.17.
Note: OFF = Offline retail brand equity; ON = Online retail brand equity; LOY = Conative loyalty; MV/Std. = Mean values and Standard deviations; FL = Factor loadings (exploratory); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite reliability (≥.6); λ = Standardized factor loadings (confirmatory) (≥.5); SCF = Scaling correction factor for MLM.

Table D-5: Reliability and validity of the cross-lagged models

Source: Own creation.

	Constructs	Time point one			Time point two			Time point three		
		1	2	3	1	2	3	1	2	3
	Fashion									
1	Offline RBE	**.671**			**.622**			**.630**		
2	Online RBE	*.634*	**.761**		*.661*[a]	**.730**		*.671*[a]	**.709**	
3	LOY	*.616*[a]	*.486*	**.513**	*.543*	*.479*	**.549**	*.558*	*.472*	**.592**
	Grocery									
1	Offline RBE	**.672**			**.712**			**.711**		
2	Online RBE	*.437*	**.744**		*.520*	**.738**		*.498*	**.739**	
3	LOY	*.446*	*.275*	**.526**	*.457*	*.320*	**.557**	*.465*	*.348*	**.573**

Confirmatory model fits:
Time point one (fashion sector): CFI .940; TLI .922; RMSEA .132; SRMR .036; $\chi^2(51) = 289.979$; SCF = 1.11.
Time point two (fashion sector): CFI .945; TLI .929; RMSEA .112; SRMR .034; $\chi^2(51) = 222.729$; SCF = 1.38.
Time point three (fashion sector): CFI .956; TLI .943; RMSEA .104; SRMR .035; $\chi^2(51) = 199.287$; SCF = 1.33.
Time point one (grocery sector): CFI .935; TLI .915; RMSEA .115; SRMR.054; $\chi^2(51) = 252.719$; SCF = 1.17.
Time point two (grocery sector): CFI .945; TLI .929; RMSEA .100; SRMR. 058; $\chi^2(51) = 205.153$; SCF = 1.39.
Time point three (grocery sector): CFI .946; TLI .931; RMSEA .099; SRMR .048; $\chi^2(51) = 201.040$; SCF = 1.41.
Note: RBE = Retail brand equity; LOY = Conative loyalty; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table D-6: Discriminant validity of the cross-lagged models

Source: Own creation.

correlations among the constructs, what leads to the conclusion that CMV was not a major issue in the cross-sectional data (see Appendix E.3.4).

To account for endogeneity using IVs (channel trust for the crosswise model and channel attractiveness for the cross-lagged model) F-tests proved that the IVs were strong predictors. In addition to the efficient models, consistent models including the IVs were calculated. The Hausman specification test (1978) was used to test whether the presence of the IV leads to significant differences in path estimates. The respective t-values for all models were below the critical value of 1.96, thus indicating that endogeneity was not a problem in the models (see Appendix E.3.5).

To test the hypotheses, non-recursive and cross-lagged structural equation modeling using Mplus 7.11 was applied. The latter was chosen, as it facilitates the analysis of reciprocal effects (Finkel 1995) and is based on two assumptions. First, a variable X_t can be predicted by X_{t-1}, and second, X_t can be cross-lagged influenced by other variables Y_{t-1} (for details, see Appendix E.3.6). The fit values were satisfactory for all models.

3.5. Results

Manipulation check. A series of *t*-tests confirmed the success of the prior OfP and OnP categorization. First, based on data from the screening phase, the mean values of the strong prior OfP were significantly ($p < .001$) higher than

those of weak OfP in both sectors (fashion M = 4.8–4.2 vs. 3.5–3.1; grocery M = 4.9–4.5 vs. 3.8–3.3). The mean values were significantly above/below the neutral point of 4.0 ($p < .05$ for H_0: $\mu = 4$). The mean values for strong (vs. weak) prior OnP were also significantly higher (fashion M = 4.5–4.4 vs. 3.0–2.8; grocery M = 4.7–4.6 vs. 3.6–3.2; $p < .001$) and significantly above/below the neutral point ($p < .05$ for H_0: $\mu = 4$). Second, data from the main study underscore the differences in mean values ($p < .001$) for all comparisons (fashion: OfP M = 4.9–4.5 vs. 3.6–3.3 and OnP M = 5.1–4.9 vs. 3.3-2.9; grocery: OfP M = 4.6–4.5 vs. 3.7-3.6 and OnP M = 4.7–4.6 vs. 3.6). The mean values were significantly above/below the neutral point ($p < .05$ for H_0: $\mu = 4$). It was also tested whether the evaluations of offline brand beliefs and online brand beliefs were higher for retailers with a strong (vs. weak) OfP and OnP. All t-tests were significant. The results of 2 × 2 MANOVAs underscored the significant differences (all $p < .001$), that is, the main effects for OfP and OnP (fashion: Wilks' λ = .699 and .423, F = 28.2 and F = 89.4; grocery: Wilks' λ = .853 and .805, F = 12.6 and 17.7) and the interaction effect (fashion and grocery: Wilks' λ = .906 and .909, F = 6.8 and 7.3). Finally, ANOVAs showed significant main and interaction effects for the fashion sample and for most of the grocery sample (see Appendix E.3.7). Subsequently, the hypothesized crosswise relationships between offline/online brand beliefs and offline/online retail brand equity as well as the reciprocity between offline and online retail brand equity were tested.

Hypotheses tests (crosswise effects). Offline brand beliefs have a positive effect on online retail brand equity in both retail sectors (see Table D-7 and Table D-8) (fashion: $\beta = .287$, $p < .001$; grocery: $\beta = .137$, $p < .01$). The effect of online brand beliefs on offline retail brand equity is significant in fashion retailing and marginally significant in grocery retailing (fashion: $\beta = .167$, $p < .001$; grocery: $\beta = 109$, $p < .1$). Hence, the results support H1a and H1b. The total effects of offline brand beliefs on conative loyalty are stronger than those of online brand beliefs (fashion: $\beta = .434$, $p < .001$ vs. $\beta = .236$; $p < .000$; grocery: $\beta = .216$, $p < .001$ vs. $\beta = .192$, $p < .001$). These results support H2a and H2b. The latter postulates stronger effects of offline brand beliefs and online brand beliefs in fashion (vs. grocery) retailing. T-tests confirm these differences (offline: t = 13.494; $p < .001$; online: t = 3.280; $p < .001$). The results are notable. Fashion retailers crosswise participate as a result of their online presence. Grocery retailers marginally participate as a result of the relationships between offline/online brand beliefs and retail brand equity, and they exhibit the marginally insignificant path series "online brand beliefs → offline retail brand equity → loyalty." With regard to the assumed differences between retailers with a prior strong vs. weak OfP, the data support H3a. The total effects of offline brand beliefs and online brand beliefs on conative loyalty are higher for retail-

ers with strong OfP in both sectors (fashion: $\beta_{\text{strong offline BB}}$ = .547, p < .001; $\beta_{\text{strong online BB}}$ = .295, p < .001 vs. $\beta_{\text{weak offline BB}}$ = .394, p < .001; $\beta_{\text{weak online BB}}$ = .145, p < .05; grocery: $\beta_{\text{strong offline BB}}$ = .378, p < .001; $\beta_{\text{strong online BB}}$ = .281, p < .001 vs. $\beta_{\text{weak offline BB}}$ = .226, p < .001; $\beta_{\text{weak online BB}}$ = .132, p < .05). Thus, for retailers, a prior OfP pays off. However, the paths (indirect effects) that lead to success differ. Retailers with a strong OfP show the significant path "offline brand beliefs → online retail brand equity → loyalty," but compared to retailers with weak OfP, no significant difference between the paths in both sectors (not supporting H3b) were found. In contrast, for the path "online brand beliefs → offline retail brand equity → loyalty," *t*-tests find significant differences between the retailers (fashion: p < .01; grocery p < .1). Thus, H3c is supported.

Fashion retailing												
	Model 1		Model 2: Weak and strong offline retailers					Model 3: Weak and Strong online retailers				
			weak		strong		Diff. test	weak		strong		Diff. test
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*p*	*β*	*p*	*β*	*p*	*p*
Offline BB → Online RBE	.287	***	.222	***	.315	***	ns	.255	***	.369	***	† (*p*= .071)
Online BB → Online RBE	.167	***	.063	***	.199	***	† (*p*= .064)	.108	*	.121	***	ns
Offline BB → Offline RBE	.793	***	.693	***	.764	***	ns	.688	***	.798	***	† (*p*= .069)
Online BB → Online RBE	.707	***	.756	***	.664	***	ns	.626	***	.635	***	ns
Offline RBE → LOY	.467	***	.521	***	.608	***	ns	.274	***	.371	**	† (*p*= .071)
Online RBE → LOY	.223	***	.148	† (*p*= .074)	.262	***	ns	.074	ns	.326	**	*
R^2 LOY	.671	***	.453	***	.753	***		.546	***	.561	***	
Indirect effects												
Offline BB→ Online RBE→ LOY	.064	**	.033	ns	.083	**	ns	.019	ns	.045	**	ns
Online BB→ Offline RBE→ LOY	.078	***	.033	***	.121	***	**	.030	***	.120	**	**
Offline BB→ Offline RBE→ LOY	.370	***	.361	***	.464	***	ns	.189	***	.296	**	ns
Online BB→ Online RBE→ LOY	.158	***	.112	† (*p*= .075)	.174	***	ns	.046	ns	.207	***	ns
Total effects												
Total effect of Offline BB on LOY	.434	***	.394	***	.547	***	*	.262	***	.397	***	*
Total effect of Online BB on LOY	.236	***	.145	*	.295	***	*	.076	**	.274	***	*
Covariates												
Gender	.047	ns	.023	ns	.082	*		-.077	ns	.129	*	
Age	.071	ns	.134	ns	.006	ns		.004	ns	.139	*	
Household size	-.031	ns	-.002	ns	-.078	*		.012	ns	-.085	ns	
Income	-.001	ns	-.059	ns	.048	ns		-.068	ns	.043	ns	
Internet expertise	.013	ns	.098	ns	-.047	ns		-.077	ns	.076	ns	
Familiarity	.237	***	.195	**	.234	***		.107	ns	.331	***	

Structural model fits:
Model 1: CFI .937; TLI .924; RMSEA .075; SRMR .043 $\chi^2(259)$ = 642.074; SCF = 1.00.
Model 2: CFI .875; TLI .857; RMSEA .111; SRMR .113 $\chi^2(499)$ = 1428.209; SCF = .79.
Model 3: CFI .870; TLI .851; RMSEA .113; SRMR .080 $\chi^2(499)$ = 1323:107; SCF = .79.
Note: BB = Brand beliefs; RBE = Retail brand equity; LOY = Conative loyalty; SCF = Scaling correction factor for MLM; Standardized coefficients are shown; N = 271 (fashion); N = 274 (grocery); Differences in effects between the groups have been tested using χ^2 tests of difference. Differences between total effects have been tested using *t*-tests.
*** p < .001; ** p < .01; * p < .05; † p < .10; ns = not significant.

Table D-7: Results of the crosswise models (fashion sector)

Source: Own creation.

The data also support H4a: a strong OnP causes stronger total effects of offline brand beliefs and online brand beliefs on conative loyalty (fashion: $\beta_{\text{strong offline BB}}$ = .397, p < .001; $\beta_{\text{strong online BB}}$ = .274, p < .001 vs. $\beta_{\text{weak offline BB}}$= .262, p < .001; $\beta_{\text{weak online BB}}$ = .076, p < .01; grocery: $\beta_{\text{strong offline BB}}$ = .319, p < .001; β_{strong}

$_{\text{online BB}}$ = .275, p < .001 vs. $\beta_{\text{weak offline BB}}$ = .226, p < .001; $\beta_{\text{weak online BB}}$ = .163, p < .05). The indirect effects differ. Retailers with stronger OnP show the significant path "offline brand beliefs → online retail brand equity → loyalty," but no differences are found for retailers with weak OnP in both sectors (not supporting H4b). The path "online brand beliefs → offline retail brand equity → loyalty" is significant for retailers with strong (vs. weak) OnP in both sectors and is significantly different in the fashion sector (fashion: p < .01; grocery p > .1). H4c is partially supported, which is notable because the paths to success vary not only between performance groups but also between retail sectors.

	Grocery retailing											
	Model 1		Model 2: Weak and strong offline retailers					Model 3: Weak and Strong online retailers				
			weak		strong		Diff. test	weak		strong		Diff. test
Effects	β	p	β	p	β	p	p	β	p	β	p	p
Offline BB → Online RBE	.137	**	.194	***	.223	***	ns	.198	**	.276	***	ns
Online BB → Offline RBE	.109	† (p =.061)	.128	*	.197	**	ns	.147	*	.236	***	ns
Offline BB → Offline RBE	.793	***	.785	***	.827	***	**	.786	***	.814	***	*
Online BB → Online RBE	.827	***	.779	***	.813	***	ns	.666	***	.755	***	ns
Offline RBE → LOY	.238	***	.257	***	.448	***	*	.239	**	.300	**	ns
Online RBE → LOY	.200	**	.127	ns	.238	*	*	.192	*	.270	*	ns
R^2 LOY	.677	***	.818	***	.637	***		.688	***	.723	***	
Indirect effects												
Offline BB→ Online RBE→ LOY	.035	*	.025	ns	.053	*	ns	.038	† (p =.099)	.075	*	ns
Online BB→ Offline RBE→ LOY	.024	ns	.033	† (p =.057)	.088	*	† (p =.097)	.047	† (p =.059)	.071	**	ns
Offline BB→ Offline RBE→ LOY	.239	***	.202	***	.325	***	† (p =.069)	.188	**	.244	**	ns
Online BB→ Online RBE→ LOY	.154	**	.099	ns	.193	*	ns	.128	*	.204	*	ns
Total effects												
Total effect of Offline BB on LOY	.216	***	.226	***	.378	***	**	.226	***	.319	***	**
Total effect of Online BB on LOY	.192	***	.132	*	.281	***	**	.163	**	.275	***	**
Covariates												
Gender	.042	ns	.067	ns	.058	ns		-.029	ns	.120	*	
Age	-.019	ns	-.050	ns	-.021	ns		-.005	ns	-.024	ns	
Household size	-.064	† (p =.083)	-.124	*	-.021	ns		-.068	ns	-.081	ns	
Income	.060	ns	.043	ns	.085	ns		-.006	ns	.135	*	
Internet expertise	.080	† (p =.060)	.161	**	-.022	ns		-.159	*	-.014	ns	
Familiarity	.716	***	.826	***	.492	***		.717	***	.669	***	

Structural model fits:
Model 1: CFI .902; TLI .884; RMSEA .092; SRMR .148 $\chi^2(259)$ = 899.120; SCF = .90.
Model 2: CFI .855; TLI .820; RMSEA .122; SRMR .089 $\chi^2(519)$ = 1508.656; SCF = .78.
Model 3: CFI .871; TLI .841; RMSEA .115; SRMR .091 $\chi^2(515)$ = 1295.433; SCF = .78.
Note: BB = Brand beliefs; RBE = Retail brand equity; LOY = Conative loyalty; SCF = Scaling correction factor for MLM; Standardized coefficients are shown; N = 271 (fashion); N = 274 (grocery); Differences in effects between the groups have been tested using χ^2 tests of difference. Differences between total effects have been tested using t-tests.
*** p < .001; ** p < .01; * p < .05; † p < .10; ns = not significant.

Table D-8: Results of the crosswise models (grocery sector)

Source: Own creation.

Hypotheses tests (reciprocal effects). With regard to the assumption of reciprocity (see Table D-9), it should be noted that the effect of offline retail brand equity on online retail brand equity is positive and significant over time (fashion: β1–2= .158, p < .001; β2–3= .167, p < .001; grocery: β1–2= .091, p < .001; β2–3= .113, p < .001). The effect of online to offline retail brand equity is also positive and significant (fashion: β1–2= .046, p < .05; β2–3= .048, p < .05;

grocery: β1–2= .031, p < .01; β2–3= .038 p < .01). Thus, the assumption of reciprocity between offline and online brand equity (H5a) is supported. The results also support H5b. The total effects of offline retail brand equity and online retail brand equity on loyalty are significant in both samples (fashion: β = .162, p < .001 and β = .101, p = .01; grocery: β = .047, p = .05 and β= .035, p = .05). Although the online effects are notable, offline retail brand equity more strongly determines conative loyalty. The results support H6a, which proposes that the total effects of offline and online retail brand equity on conative loyalty are more strongly in fashion (vs. grocery) retailing. *T*-tests confirm these differences (offline: t = 2.736, p < .01; online: t = 1.678, p < .05).

	Model 1: Fashion retailing			Model 2: Grocery retailing	
Effects	β	p		β	p
Offline RBE (1) → Online RBE (2)	.158	***		.091	***
Online RBE (1) → Offline RBE (2)	.046	*		.031	**
Offline RBE (1) → LOY (2)	.081	***		.024	*
Online RBE (1) → LOY (2)	.056	*		.019	*
Offline RBE (1) → Offline RBE (2)	.889	***		.743	***
Online RBE (1) → Online RBE (2)	.743	***		.703	***
LOY (1) → LOY (2)	.825	***		.669	***
Offline RBE (2) → Online RBE (3)	.167	***		.113	***
Online RBE (2) → Offline RBE (3)	.048	*		.038	**
Offline RBE (2) → LOY (3)	.091	***		.030	*
Online RBE (2) → LOY (3)	.064	*		.023	*
Offline RBE (2) → Offline RBE (3)	.907	***		.916	***
Online RBE (2) → Online RBE (3)	.825	***		.873	***
LOY (2) → LOY (3)	.879	***		.956	***
R^2 LOY	.845			.931	***
Total effect of Offline RBE (1) on LOY (3)	.162	***		.047	*
Total effect of Online RBE (1) on LOY (3)	.101	**		.035	*
Differences in total effects between sectors (t-tests)					
Δ Total effect of Offline RBE (1) on LOY (3)		t = 2.736	**		
Δ Total effect of Online RBE (1) on LOY (3)		t = 1.678	*		
Covariates					
Gender (1) → LOY (1)	.030	*		-.034	*
Gender (2) → LOY (2)	.034	*		.037	*
Gender (3) → LOY (3)	.029	*		.044	*
Age (1) → LOY (1)	-.001	ns		.054	***
Age (2) → LOY (2)	-.001	ns		.059	***
Age (3) → LOY (3)	-.001	ns		.070	***
Household size (1) → LOY (1)	.010	ns		-.008	ns
Household size (2) → LOY (2)	.011	ns		-.009	ns
Household size (3) → LOY (3)	.009	ns		-.010	ns
Income (1) → LOY (1)	-.013	ns		-.024	*
Income (2) → LOY (2)	-.015	ns		-.026	*
Income (3) → LOY (3)	-.013	ns		-.031	*
Internet expertise (1) → LOY (1)	.034	*		.016	ns
Internet expertise (2) → LOY (2)	.037	*		.018	ns
Internet expertise (3) → LOY (3)	.033	*		.021	ns
Familiarity (1) → LOY (1)	.209	***		.269	***
Familiarity (2) → LOY (2)	.230	***		.291	***
Familiarity (3) → LOY (3)	.213	***		.349	***

Structural model fits:
Fashion: CFI .948; TLI .944; RMSEA .056; SRMR .054 $\chi^2(1156)$ = 2129.857; SCF = 1.11.
Grocery: CFI .911; TLI .905; RMSEA .078; SRMR .068; $\chi^2(1174)$ = 2101.729; SCF = .99.
Note: BB = Brand beliefs; RBE = Retail brand equity; LOY = Conative loyalty; (1, 2, 3) = time points; SCF = Scaling correction factor for MLM; Standardized coefficients are shown. N = 271 (fashion); N = 274 (grocery).
*** p < .001; ** p < .01; * p < .05; † p < .10; ns = not significant.

Table D-9: Results of the cross-lagged models

Source: Own creation.

Regarding H6b *t*-tests confirm that the effect of offline retail brand equity on online retail brand equity is significantly stronger in fashion (vs. grocery) retailing (fashion: $\beta_{1\text{-}2}$ = .158, p < .001; $\beta_{2\text{-}3}$ = .167, p < .001; grocery: $\beta_{1\text{-}2}$ = .091, p < .001; $\beta_{2\text{-}3}$ = .113, p < .001; difference tests: $t_{1\text{-}2}$ = 3.181, p < .001 and $t_{2\text{-}3}$ = 2.285, p < .01). Concerning H6b, *t*-tests show that the effect from online retail brand equity on offline retail brand equity is equally strong in fashion (vs. grocery) retailing (fashion: $\beta_{1\text{-}2}$ = .046, p < .05; $\beta_{2\text{-}3}$ = .048, p < .05; grocery: $\beta_{1\text{-}2}$ = .031, p < .01; $\beta_{2\text{-}3}$ = .038, p < .01; difference tests: $t_{1\text{-}2}$ = 0.749, p >.1 and $t_{2\text{-}3}$ = 0.468, p > .1). Multichannel fashion retailers participate more strongly from the reciprocity of offline and online retail brand equity.

4. General Discussion

Powered by consumers and competitors, brick-and-mortar retailers increasingly operate online channels under the same brand name and exploit interdependencies, though their offline and online offers may differ (Cao and Li 2015; Herhausen et al. 2015; Wang et al. 2009). This study provides insights into important *crosswise and reciprocal relationships* within multichannel systems and highlights different paths to conative loyalty for weak- and strong-performing retailers in two major retail sectors. Aiming to bond consumers across channels, successful multichannel retailers must understand such interdependencies to develop and coordinate their channels properly (Montoya-Weiss et al. 2003). Subsequently, the results are discussed and two major theoretical and managerial implications are drawn.

4.1. Implications of Crosswise Interdependencies

With respect to the first research question, the importance of crosswise effects between offline brand beliefs and online brand beliefs and retail brand equity, which affect conative loyalty are underscored. Because previous stationary retailers are observed, unsurprisingly, the brand attributes and beliefs related to a store dominate the paths to conative loyalty. Simultaneously estimated, offline brand beliefs significantly determine conative loyalty as well, but the paths to success vary between retail sectors and between retailers with prior strong vs. weak performance. These results contribute to the dominant unidirectional literature, and two conclusions will be discussed below.

First, it can be concluded that it matters which retail sector is observed due to varying paths to success (see the total and indirect effects in Table 8, model 1), leading to different conclusions for multichannel retailers in the sectors.

Most previous studies illuminate unidirectional effects (e.g., offline on online only, Verhagen and van Dolen 2009) and draw incomplete, potentially biased conclusions for multichannel retailers. Studies using crosswise approaches have mostly focused on online affine sectors (e.g., Chiu et al. 2011; Kwon and Lennon 2009a). These studies are supported and extended. *Grocery retailers* benefit from consumers' crosswise behavior, whereas the significant total effects might be seen as surprising because this study attributed grocery retailing to a weaker online experience of firms and consumers due to the shorter period of time for which they have been pursued. The crosswise paths to success are weak, such as the obvious link of "offline brand beliefs → online retail brand equity → loyalty", or insignificant, such as "online beliefs → offline retail brand equity" and "online brand beliefs → offline retail brand equity → loyalty." It is concluded that cross-channel relationships, particularly those that originate in the online channel, are weak and that grocery retailers' should strategically focus on fully exploiting the interdependencies within their multichannel system when aiming to bond consumers across channels. In this vein, more established multichannel structures of fashion retailers might serve as a model for crafting multichannel strategies. Here, all crosswise effects are significant, and the relative importance of the paths to success is visible, which enhances unidirectional studies. The mechanism driving conative loyalty is most strongly based on the offline channel; that is, the total path of online brand beliefs to conative loyalty is almost twice as strong as the path of offline brand beliefs to conative loyalty. This result seems surprising because the effect originating from the younger online channel is stronger. However, one reason for this result is the strong offline retail brand equity. Consumers confronted with online brand beliefs can easily link this information with offline retail brand equity, which leads to loyal behavior. Strategically, fashion retailers should invest in their offline retail brand equity when aiming to bond consumers to the firm. Although online channels are well established, online retail brand equity is not as strong as offline retail brand equity. However, due to growing online sales, the strategic importance may rise in the future.

Second, to the best of the knowledge, this study discusses for the first time the paths for multichannel retailers with strong vs. weak OfP and OnP when they aim to bond consumers to their firm. As expected, the total effects are significantly stronger for previously strong-performing retailers (see H3a and H4a). This observation is theoretically plausible (Festinger 1957) and underlines the importance to evoke positive and consonant perceptions and expectations within a multichannel system. For example, a stronger (vs. weaker) prior OfP causes more (less) favorable brand associations of an online channel and, in turn, does (does not) determine conative loyalty. However, the paths leading to success draw a more complex picture and support two conclusions.

(1) Retailers with *weak OfP* face at least three problems: the effect of "online retail brand equity → loyalty" and the path of "offline brand beliefs → online retail brand equity → loyalty" are rather insignificant, whereas the paths of "online brand beliefs → offline retail brand equity → loyalty" and "online brand beliefs → online retail brand equity → loyalty" are weak, at best (see direct and indirect effects in the sectors in Table 8, model 2). For these retailers, online brand beliefs and online retail brand equity have a smaller effect on conative loyalty. The transfer from traditional to virtual marketplaces is difficult when using the same brand name, which is a disadvantage against strong OfP competitors. Thus, improving online and crosswise effects are two strategic conclusions for these multichannel retailers, which should emphasize convergent consumer perceptions of their channels. Retailers with *strong OfP* have significantly stronger total effects and benefit from interdependencies in their multichannel system (Zhang et al. 2010). They benefit from both "offline brand beliefs → online retail brand equity → loyalty" and "online brand beliefs → offline retail brand equity → loyalty" paths; that is, they can rely on both offline and online beliefs in their multichannel system. However, surprisingly, the path of "offline brand beliefs → online retail brand equity → loyalty" is not significantly stronger than for weak OfP retailers. Thus, even previously well-performing retailers must care about the offline and online attributes and benefits they offer to address consumers' needs and to bond consumers to the multichannel system by creating a superior overall retail experience for consumers (Verhoef et al. 2015). Online brand beliefs are particularly advantageous as they determine offline retail brand equity and conative loyalty significantly more strongly than those of previously weaker retailers in both sectors.

(2) Retailers with *weak (vs. strong) OnP* have significantly weaker opportunities to use interdependencies in their multichannel systems (see direct effects in both retail sectors in Table 8, model 3). They cannot rely on building offline brand beliefs because the "offline brand beliefs → online retail brand equity → loyalty" path is largely insignificant. For *strong OnP retailers,* this path is significant but not significantly stronger. Hence, this path is critical even for successful retailers. Both types of retailers can strengthen conative loyalty by relying on the "online brand beliefs → offline retail brand equity → loyalty" path. Once again, this effect is stronger for strong OnP retailers, at least in fashion retailing. In grocery retailing, differences in direct and indirect effects are mostly insignificant between retailers with weak vs. strong OnP. It might be valuable to further analyze these paths as they are likely to differ within different target groups. For example, varying roles of channels in regard to consumers' search, purchase and return behavior are known (Pauwels and Neslin 2015) which might lead to different evaluations of the channels.

Summarizing the two conclusions, it is observed that former brick-and-mortar retailers that operate online channels can significantly increase consumers' conative loyalty to the multichannel system by designing appropriate offline and online attributes and benefits and, thus, services for consumers (Verhoef et al. 2015). Remarkably, these observations hold true regardless of the retail sector and regardless of whether prior performance was strong or weak (total effects). However, regarding indirect effects, online brand beliefs provide a strong lever for retailers with a strong prior OfP against their weaker competitors.

4.2. Implications of Reciprocal Interdependencies

With respect to the second research question, the results show that within reciprocal relationships, not just offline retail brand equity but also online retail brand equity significantly affects consumers' conative loyalty toward a multichannel retailer, regardless of the retail sector. These interdependencies over time extend existing unidirectional and cross-sectional studies, which may suffer from statistical shortcomings and do not fully consider interdependencies in a multichannel system. The results show reinforcing effects of offline retail brand equity via online retail brand equity on conative loyalty (and vice versa) and stronger total effects compared to only direct ones. Regarding the reciprocal effects, the results show that the influence of offline retail brand equity on online retail brand equity is significantly stronger in fashion (vs. grocery retailing), whereas the effect of online retail brand equity on offline retail brand equity is equally strong in both retail sectors (see Table D-9). Loyal consumers evaluate both channels of a retailer but rely more strongly on the channel that evokes a stronger intention toward their behavior (Ajzen and Fishbein 1980, p. 5); that is, offline retail brand equity affects conative loyalty more strongly. Although the importance of offline and online retail brand equity for conative loyalty is stable in both sectors, the total and reciprocal effects are mostly stronger for fashion retailers. However, even grocery retailers that developed online channels later benefit more strongly from offline associations. This study concludes that retailers should focus on evoking favorable offline brands due to their stronger influence on conative loyalty toward the firm. However, it can also be concluded that due to growing purchases in online channels, the reciprocal importance of online retail brand equity will increase in the long term. Thus, retailers must control for interdependent effects over time to obtain a clear understanding of each channel's brand role for customer behavior and thus for strategy.

Although longitudinal and cross-sectional studies show contradictory results (e.g., Swoboda et al. 2013a), the longitudinal models confirm the cross-sectional results. However, the need for further reciprocal approaches is obvious as otherwise unobserved effects might bias the conclusions. For example, two additional reciprocal models per retail sector (analyzing effects on offline and online purchase intentions) underline stable relationships in fashion retailing; that is, purchase intentions in offline and online channels are affected by offline retail brand equity and online retail brand equity, but not in grocery retailing. Here an insignificant path to online purchase intention exists (for details see Appendix E.3.8). This finding partly contradicts crosswise studies (e.g., Kwon and Lennon 2009a). This study calls for further analysis on reciprocal relationships of previously strong vs. weak retailers. Such studies would be fruitful, but this study was unable to conduct these studies due to methodological requirements. For example, strong retailers (e.g., Walmart) may profit equally strongly from both offline retail brand equity and online retail brand equity, whereas a buying group (e.g., E.Leclerc) may have only offline advantages. Future research could address such contexts of reciprocity (e.g., by addressing prior brand performance, which requires larger samples than those in the reciprocal studies) to illuminate the contexts in which cross-channel effects occur (Cao and Li 2015).

4.3. Managerial Implications

Although the marketing rule of bidirectional interdependencies between channels may result from practical experience, it is beneficial for managers to pay attention to scientific evidence on crosswise and reciprocal effects when designing their channel structures to determine, for example, how synergies can be realized or how resources should be allocated in order to bond consumers (Herhausen et al. 2015; Verhoef et al. 2015). For former stationary retailers such as Walmart or Next that pay attention to physical and digital interdependencies to bond consumers, the understanding of how one channel benefits from others and how the channels affect customer behavior is critical for a proactive coordination of the relationship with actual and potential customers as well as for an optimal multichannel integration (Cao and Li 2015; Van Birgelen et al. 2006). Three implications for managers are drawn.

(1) Because the results suggest that conative loyalty is reciprocally more strongly influenced by offline (vs. online) retail brand equity and that it is easier for former stationary retailers with strong prior OfP to crosswise link the channels and to perform well in online channels, it can be concluded that those firms should primarily focus on consumers' strong consumer atti-

tudes (i.e., perceived offline retail brands and the transference to online brand beliefs). These efforts enhance conative loyalty toward the multichannel system regardless of the retail sector.

(2) Relying solely on offline effects is insufficient for multichannel retailers, even if crosswise, the offline brand beliefs affect conative loyalty more strongly in total than online brand beliefs. In particular, retailers with a strong prior OfP outperform weak competitors through the value of their attributes and benefits offered online. These brand beliefs also affect consumers indirectly (via offline retail brand equity) and should be strategically strengthened. Outperformed retailers must also work on their offline attributes and benefits, although these do not affect consumers´ conative loyalty via online retail brand equity.

(3) Leveraging brand effects in multichannel structures is more difficult for grocery (vs. fashion) retailers because the total effects are weaker and some indirect online effects are insignificant. This might be a question of experience (online sales constitute approximately 5%-15% of total sales), but retailers with prior strong OfP are able to fully rely on interdependencies when influencing consumers, which is especially relevant as it is know that consumers switching behavior increases when they gain online shopping experience (Melis et al. 2015).

5. Limitations and Directions for Further Research

To better understand the interdependencies between retail channels, additional research is needed because the present study is not without limitations. Three limitations will be highlighted subsequently.

First, although special attention was paid to data collection, focusing on representative samples, four store retailers per sector and their online channels limits the scope of this study. Surveying consumers which are familiar with further channels (e.g., mobile channels, Wang et al. 2015) would allow to analyze the interdependencies of various multichannel touchpoints and enhance the results (Baxendale et al. 2015). Broadening the database would allow to examine the reciprocity for prior weak vs. strong performing retailers or of specific retailers' position in the matrix. Four retailers per sector to leverage the level of prior performance were consciously chosen, but further studies could consider differences in retail formats and store locations for which we did not control (e.g., Cleeren et al. 2010).

Second, although brand beliefs were measured according to the literature, two different scales were used. In particular, the online brand belief measure (Kwon and Lennon 2009a) was chosen due to the sample design procedure (e.g., the representative sample with different internet experiences and channel familiarity). Thus, the ability to measure attributes such as price or assortment within the online channel, similar to the offline channel, was not feasible in the pretests. However, as consumers might also focus on channel attributes that are equal in both channels, future research might address this issue when questioning more familiar or experienced consumers (Hammerschmidt et al. 2015). Also conative loyalty toward the retailer was measured to draw conclusions for the whole multichannel system. Further promising opportunities would be to analyze objective purchase data (e.g., Biyalogorsky and Naik 2003) or to simultaneously analyze effects on channel specific outcomes what would lead to conclusions concerning the success of both channels in isolation (Herhausen et al. 2015).

Third, reasoned action and cognitive dissonance theory were applied. It might be particularly interesting to explain the reciprocal effects between affective or attitudinal concepts using schema or motivational theories (e.g., Puccinelli et al. 2009; Swoboda et al. 2013a). The latter might be especially fruitful to explain how inconsistencies within multichannel perceptions lead to consumers' behavioral motivation to reinstate homeostasis. Besides, extending the conceptual model is promising because consumers increasingly search, re-search and purchase in different channels (e.g., Chiu et al. 2011; Verhoef et al. 2007b); thus, crosswise and reciprocal approaches could be useful to achieve further insight into these assumptions.

E. Final Remarks

1. Discussion and Conclusions

1.1. Core Results

Customer-based retail brand equity that is the consumers' overall assessment of a retailer as a strong, attractive, favorable, and unique brand (Hartman and Spiro 2005; Keller 1993, 2003, 2010) is a core predictor of retailer performance and consumer behavior (e.g., Baldauf et al. 2009; Grewal et al. 2009; Hälsig 2009; Swoboda et al. 2013b). Retailers like Swedish H&M have been ascribed a strong retail brand equity which is an important indicator of building a competitive advantage through differentiation whereas US-based Walmart aims to further boost the customer experience and invests in its digital and physical retail channels (Deloitte 2015; Walmart 2015). Even though retail branding topics have been frequently addressed in the extant literature, the literature review revealed that several areas in retailing branding research show either contradictory results or have been left unaddressed to the best of our knowledge (see Chapter A). Particularly, several retail brand equity-related research areas emerged to have not yet been comprehensively addressed. These topics encompass drivers of retail brand equity in different retail sectors, the interplay of perceived value and retail brand equity as well as their effects on loyalty, and lastly the interdependent effects within retailers' multichannel structures. These topics, that all revolve around the concept of customer-based retail brand equity contain fruitful areas for research regarding the concept and related effects. Hence, conducting research within these areas offers fruitful and novel contributions to the current understanding of effects on and effects of customer-based retail brand equity.

This doctoral thesis offers novel and valuable insights on the highly relevant topic of retail brand equity and related concepts such as perceived value or retail attributes, but also by analyzing interdependent effects with regard to the offline retail brand equity and the online retail brand equity of multichannel retailers. By doing so, the studies draw from well-established theories, such as for example schema theory (e.g., Lei et al. 2008; Malle and Horowitz 1995) or the theory of reasoned action (e.g., Ajzen 2005; Ajzen et al. 1995; Fishbein 1967). Furthermore, several survey designs were employed (i.e., cross-sectional and longitudinal designs) and different multivariate data analyses were applied to test the hypotheses (i.e., multi-group structural equation modelling, non-recursive structural equation modeling, and autoregressive cross-lagged structural equation modeling).

J.K. Weindel, *Retail Brand Equity and Loyalty*, Handel und Internationales Marketing / Retailing and International Marketing, DOI 10.1007/978-3-658-15037-2_5

In addition it should be highlighted, that it is essential to take the consumers' perspective into account when focusing on retail brand equity. The customer-based retail brand equity emerges over time and rests on the consumers' experiences with the brand (Keller 1993, 2003, 2010). Brands are generally considered as information sources for consumers and it is acknowledged that loyalty intentions emerge as a consequence of brand equity (Erdem and Swait 1998).

In general, this doctoral thesis results from the lack of knowledge on (1) dominating sector-specific drivers of retail brand equity, (2) reciprocal effects regarding perceived value and retail brand equity, and (3) interdependencies in multichannel retail structures. This doctoral thesis therefore aims to give answers to the following key research questions:

(1) Which specific retail attributes most strongly predict retail brand equity in each retail sector and does the influence of retail brand equity on loyalty differ between retail sectors?
(2) How is the reciprocity between retail brand equity and perceived value characterized and which of these two has a stronger total effect on loyalty? Also, do these effects vary between retail sectors, especially when focusing on utilitarian value and hedonic value?
(3) Against the background of the growing relevance of multichannel retailing, do interdependent relationships between offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity and loyalty to a retailer exist? And furthermore, do the paths to loyalty vary when focusing on retail sectors and differently performing retailers?

The results of the studies that have been conducted to answer these three key research questions will be described subsequently.

Study 1 aims to answer the first key research question and illuminates whether the perceived retail attributes predict retail brand equity and, particularly, whether specific retail attributes dominate in predicting retail brand equity across the observed retail sectors. This study therefore offers important and novel contributions to the current understanding of predictors of retail brand equity across retail sectors. This knowledge is especially relevant, as knowledge on which retail attributes are most relevant for the building of a strong, attractive, favorable, and unique retail brand, is highly advantageous for retailers. Thus, Study 1 aims to answer the first key research questions by targeting the four most important retail sectors in most countries (i.e., grocery retailing, fashion retailing, electronics retailing, and DIY retailing), which is relevant, because consumer behavior is

known to vary across retail sectors (e.g., Pan and Zinkhan 2006; Schenk et al. 2007). Overall this study enhances the current understanding of dominating drivers of retail brand equity across retail sectors and the understanding of how retail brand equity leads to intentional loyalty across retail sectors. Intentional loyalty (Johnson et al. 2006) is addressed, because it is a key predictor of shopping frequency and shopping expenses (e.g., Chiou and Droge 2006; Pan and Zinkhan 2006) and thus is a key indicator of an existing competitive advantage (e.g., Deng et al. 2010). Retail managers can gain important and valuable insights regarding the question which retail attributes affect retail brand perceptions most so that they can stress these retail attributes strategically and thus can aim to maximize their return on investments regarding their retail brands. Within the extant literature studies have addressed predictors of retailer perceptions but mostly focused on retail image and less frequently on retail brand equity. Furthermore scholars often analyzed the effects in single retail sectors and did not systematically analyze the role of retail attributes across retail sectors. The conceptual framework of Study 1 is based on theories that consider retail brands and retail associations within the memory of consumers (e.g., Hartman and Spiro 2005; Keller 1993) as well as on motivational theories that argue that consumers follow different motivations and thus rely differently on retail attributes when shopping groceries, textiles, electronic products, and DIY products.

The results of Study 1 indicate a strong varying importance of retail attributes for retail brand equity in each retail sector, but show a strong and stable link between retail brand equity and consumers' intentional loyalty across retail sectors in contrast. In grocery retailing assortment and price are the most beneficial drivers of retail brand equity, whereas in fashion retailing—besides these two attributes—store layout is of additional importance. In electronics retailing, service, communication, and price are the most important drivers of a strong, unique, favorable, and attractive retail brand, whereas in contrast, service, assortment, and store layout constitute the dominating factors of retail brand equity in DIY retailing. The sector-specific and cross-sectoral observations provide managers with specific knowledge for the main levers of retail brand equity in different retail contexts. However, addressing levers that are of minor importance should not be neglected as they may constitute important differentiating criteria. Nevertheless, investments into to these levers need to be carefully evaluated. Overall, retail managers need to bear in mind that retail strategies cannot be easily transferred from one retail context to another—due to varying importance of retail attributes—and may fail and thus not compensate for the investments that have been made. Especially diversified retailers need to develop sector-specific retail branding strategies.

Study 2 aims to answer the second key research question and examines how the reciprocity between retail brand equity and perceived value is characterized and whether retail brand equity or perceived value has a stronger total effect on loyalty. Furthermore it is analyzed whether the effects between retail brand equity, perceived value, and loyalty are stable or whether they vary when observing fashion retailing and grocery retailing by disentangling the value construct into its utilitarian and hedonic dimensions. Contradictory results exist in the extant literature regarding the directionality of effects between retail brand equity and perceived value. Scholars show that perceived value is an antecedent of retail brand equity or related attitudinal concepts (e.g., Chaudhuri and Ligas 2009; Overby and Lee 2006), though the opposite directionality of effects has also been conceptualized and demonstrated (e.g., Grewal et al. 2004; Sirohi et al. 1998; Stoel et al. 2004). Thus, Study 2 aims to answer the second key research question by analyzing the effects between perceived value, retail brand equity, and loyalty in fashion retailing and grocery retailing. Overall this study enhances current knowledge by offering a broad conceptualization of the reciprocal relationship between perceived value and retail brand equity and their joint impact on loyalty. Retail managers can gain valuable insights into these effects that are relevant when deciding on budget allocations within customer retention management, for example. The conceptual framework of Study 2 draws from schema theoretical reasoning and goal/motivational reasoning. It is argued that perceived value and retail brand equity have a reciprocal relationship, because both represent information regarding the retailer which is stored in interconnected nodes in the consumers' memory. Due to varying goals/motivations in the two observed sectors, a different importance of utilitarian vs. hedonic value with regard to the reciprocal relationship is highly likely.

The results of Study 2 show that perceived value and retail brand equity have a reciprocal relationship. With regard to the effect on loyalty it can be stated that the total effect of retail brand equity on loyalty is stronger than the total effect of perceived value on loyalty. These results are valid for grocery retailing and fashion retailing likewise. In fashion retailing, however, the effects of hedonic value and utilitarian value on retail brand equity are almost equal, whereas the effect of retail brand equity on hedonic value is stronger than the effect on utilitarian value. With regard to the total effects the results reveal that hedonic value more strongly influences loyalty than utilitarian value does. In grocery retailing, in contrast, the reciprocal effects between utilitarian value and retail brand equity are stronger than the reciprocal effects of hedonic value and retail brand equity. Regarding the total effects, the results show stronger effects of utilitarian value on loyalty than for hedonic value on loyalty. Study 2 therefore adds to current retailing research by introducing the novel idea that perceived value and retail brand equity affect loyalty solely but also by their reciprocal relationship. Nevertheless

effects vary with regard to utilitarian value and hedonic value because shopping goals/motivations differ between retail sectors. Retail managers need to take these effects into account and thus consider the interdependencies between both aspects when developing strategies.

Study 3 aims to answer the third key research question and examines the crosswise and reciprocal relationships among offline brand beliefs, online brand beliefs, offline retail brand equity, online retail brand equity, and conative loyalty within multichannel retail structures in grocery retailing and fashion retailing. Within the extant literature effects between retailers' channels have been analyzed, though scholars mainly focus on unidirectional effects on one channel (e.g., Badrinarayanan et al. 2012; Kwon and Lennon 2009b; Melis et al. 2015) or multiple channels (e.g., Herhausen et al. 2015; Van Baal 2014) and less on interdependent effects between retailer's channels. Thus Study 3 aims to answer the third key research question by analyzing the interdependent effects in today's typical multichannel retail structures in fashion retailing and grocery retailing. Overall the study enhances current knowledge by offering novel insights into crosswise relationships and the reciprocity between offline and online brand associations by analyzing retail sectors with a varying integrational depth with regard to online channels as well as by analyzing the routes to success for retailers with strong vs. weak offline/online brand performances. Retail managers can gain valuable insights on how to use channel synergies and interdependencies to deliver a superior overall retail experience to their consumers. The conceptual framework of Study 3 is based on the theory of reasoned action (Ajzen and Fishbein 1980), the summative model of attitudes (Fishbein and Ajzen 1975), and the theory of cognitive dissonance (Festinger 1957). Combining these theories provides rationales (1) for crosswise relations between channels' brand beliefs and channels' retail brand equity that affect loyalty and for differences in these effects across retail sectors and (2) for retailers with strong vs. weak prior channel performance. Furthermore rationales are provided for possible reciprocal effects between offline retail brand equity and online retail brand equity and their effects on conative loyalty across retail sectors.

The results of Study 3 illustrate that crosswise effects between offline and online brand beliefs and offline and online retail brand equity exist and that—unsurprisingly as former brick-and-mortar retailers are observed—the offline brand beliefs and offline retail brand equity dominate the paths that lead to conative loyalty. The effects, however, vary when different retail sectors (grocery retailing and fashion retailing) are observed and also when considering retailers' strong vs. weak prior offline/online channel performance. The effects of offline brand beliefs and online brand beliefs are stronger in fashion (vs. grocery) retailing. The total effects of offline brand beliefs and online brand beliefs on conative

loyalty are higher for retailers with strong prior offline performance in both sectors. However, the paths that lead to success differ: We find significant differences for the path "online brand beliefs → offline retail brand equity → conative loyalty" for strong (vs. weak) prior offline performance retailers. Strong prior online performance retailers have stronger total effects of offline brand beliefs and online brand beliefs on conative loyalty. However, the indirect effects differ. We find significant differences for the path "online brand beliefs → offline retail brand equity → conative loyalty" for retailers with strong (vs. weak) prior online performance in both sectors. The assumption of the reciprocity between offline retail brand equity and online retail brand equity is supported and the total effects of offline (vs. online) retail brand equity on conative loyalty is significantly stronger. Thus, multichannel fashion retailers participate more strongly from the reciprocity between offline retail brand equity and online retail brand equity.

In summary, the studies on retail brand equity that constitute this doctoral thesis show the high relevance of retail brand equity with regard to influencing consumer loyalty and thus the success of the retailer. In particular the key role of retail brand equity was pointed out first with regard to the dominating retail attributes that affect retail brand perceptions in varying retail sectors as the associations that consumers' have with a retailer in memory vary due to differing underlying motivations in retail sectors. Second, the key role of retail brand equity was shown for reciprocal effects that occur within consumers' memory as retail brand equity is closely linked with value perceptions and both information nodes can be activated and information retrieval can occur through the spread of activation in both directions. Third, the key role of retail brand equity was shown within traditional multichannel retail structures in which interdependencies occur between the brand beliefs and the retail brand equities of retailers' offline retail channel and online retail channel. In addition, the interdependencies were addressed in two retail contexts and for retailers with strong (vs.) weak channel performances.

These observations regarding retail brand equity are based on several studies conducted in different retail sectors (i.e., grocery retailing, fashion retailing, consumer electronics retailing, and DIY retailing) with cross-sectional as well as longitudinal designs. Thus comprehensive insights regarding the most influential retail attributes with regard to the building of retail brand equity in retail sectors have been provided. Furthermore, novel insights have also been developed with regard to interdependent (i.e., crosswise and reciprocal) relationships in retailing.

These insights provide valuable knowledge for retailers regarding the management of retail brands in varying though complex contexts (i.e., retail sectors

as well as brick-and-mortar vs. multichannel retailing). This thesis offers several theoretical and managerial implications that will be discussed in detail subsequently.

1.2. Theoretical Implications

This doctoral thesis offers valuable contributions to the extant literature and theory in several ways. These ways will be discussed subsequently.

Scholars have frequently addressed the role of retail attributes for retailer image (e.g., Baker et al. 1994; Berry 1969; Kunkel and Berry 1968; Liljander et al. 2009; Martineau 1958) and less for retail brand equity (e.g., Allaway et al. 2011; Swoboda et al. 2014). Furthermore most studies focused on either single retail sectors (e.g., Arnett et al. 2003; Diallo 2012) or did not systemically analyze sector differences (e.g., Swoboda et al. 2007). Thus, Study 1 expands the existing knowledge on sector-specific predictors of retail brand equity by systematically analyzing differences regarding (1) the influence of retail attributes on retail brand equity and (2) the influence of retail brand equity on loyalty across retail sectors. The study indicates that retail brands and retail attributes can be considered as associations within the consumers' memory (e.g., Hartman and Spiro 2005; Keller 1993). Furthermore retail attributes are considered as signals that are perceived as information cues by consumers. Consumers use this informational cues to form attitudes toward a retailer and in this vein also develop behavioral intentions (e.g., Jinfeng and Zhilong 2009). The strength of the linkages between the various associations that consumers hold in their memory depends on the degree of activation.

In addition to the applied cognitive theoretical reasoning this study also applies motivational theoretical reasoning. The differences in the strength of the linkages between retail attributes and retail brand equity across retail sectors can be explained by different underlying motivations that consumers have when they shop groceries, textiles, consumer electronics, or DIY products. For example, consumers may more strongly follow utilitarian motives when they fulfill their day-to-day needs when shopping groceries and thus emphasize assortment or price, whereas they may be more hedonically motivated in their shopping, when they shop textiles and thus more strongly rely on store layout perceptions in their decision making. Furthermore the study also shows that the associations that consumers hold in their memory lead—when they are activated—equally to behavioral intentions. This equal effect on consumer behavior has been shown, because the positive and significant effect of retail brand equity on loyalty has not been significantly

different across retail sectors. Based on these findings, it can be concluded that the overall assessment of a retailer as a strong, unique, attractive, and favorable brand pays off and that the retail brand can be considered as a valuable stimulus and as an especially strong association that is stored in the consumer's memory and that is furthermore relevant for the consumer in decision situations in different retail sectors.

By investigating the reciprocal relationship between perceived value and retail brand equity Study 2 focuses on an under-researched topic in retailing and addresses existing calls in the literature to further analyze the reciprocal effects and total effects of retail brand equity and perceived value in different contexts such as retail sectors (Carpenter 2008; Sweeney and Soutar 2001). Schema theoretical reasoning proves to be valid in explaining the reciprocal relationship between perceived value and retail brand equity that both represent interconnected nodes in the consumers' memory. The rationale that both nodes can be activated and then subsequently activate related nodes through the spread of activation in one or both directions (Anderson 1983; Puligadda et al. 2012) is supported by the results of Study 2. Hence, the activation of the perceived value node can lead to the activation of the retail brand node and vice versa. Furthermore the results show that the activation of these nodes leads to behavioral intentions such as the development of loyalty intentions.

In addition, goal theory implies that goals determine the relative salience of retail attributes for consumers by either increasing or decreasing the links between the goals and the means—in terms of appropriate paths—to achieve them (Kruglanski et al. 2002; Puccinelli et al. 2009). The goal and motivational theories argue that in decision situations consumers use the best available and most suitable information that is based on their prior experiences with the salient goal or motive. This reasoning is supported by the results of Study 2 that show that in fashion retailing—where consumers are more hedonically motivated—hedonic value is more important for consumers. The linkages between retail brand equity and hedonic value and their effects on loyalty are shown to be stronger than the linkages between retail brand equity and utilitarian value. In contrast, in grocery retailing, consumers follow utilitarian motives more strongly which results in stronger effects for relationships in which utilitarian value is involved. Thus the linkages between utilitarian value and connected nodes such as retail brand equity appear to be stronger than the linkages that involve hedonic value.

By examining the interdependencies in traditional multichannel retail structures (i.e., by focusing on multichannel retailers that formerly operated as

brick-and-mortar retailers and decided to add an online channel) Study 3 illuminates a further under-researched topic in retailing research. The study addresses existing calls in the literature for research on interdependencies between offline brand associations and online brand associations (e.g., Kwon and Lennon 2009b; Montoya-Weiss et al. 2003; Zhang et al. 2010). The study's results support the provided theoretical reasoning that follows the theory of reasoned action and the summative model of attitudes by proposing that because retailers operate under the same brand name in both channels, salient brand beliefs (i.e., beliefs that are experienced most frequently and recently) can be attributed to either channel (i.e., offline retail brand equity and online retail brand equity). This attribution can occur, because both channels are highly associated with each other (e.g., Ajzen et al. 1995; Van Baal 2014; Wang et al. 2009).

Furthermore, the results are consistent with the theory of cognitive dissonance (e.g., Festinger 1957). It is shown that consumers that hold positive offline brand beliefs and positive online brand beliefs develop positive offline brand associations and online brand associations. With regard to differences between grocery retailing and fashion retailing the theoretical reasoning that is based on the theory of reasoned action and the summative model of attitudes is supported. Stronger effects occur in retail sectors in which consumers more frequently access information regarding online channels such as fashion retailing. This observation might be explained by two reasons. First, the online channel have been in use for a longer time and second, the introduction of the online channel is considered as more disruptive and may therefore more strongly affect consumer perceptions and affect (Verhoef et al. 2015). With regard to differences between retailers with strong (vs. weak) prior offline (online) channel performance, the results support the theoretical reasoning that has been applied. Brand beliefs and retail brand equity are more likely to be evaluated less favorably when prior channel performances have been weak because consumers adapt to their prior perceptions regarding the multichannel retailer to achieve cognitive consonance among the information they hold. Finally the reciprocal relationship between online retail brand equity and offline retail brand equity and a stronger total effect of the latter on loyalty proves the applied theoretical reasoning: Offline retail brand equity appears to be more salient within the consumer's memory because it represents the parent brand within a brand extension context. Thus, offline retail brand equity has stronger effects on the consumers' conative loyalty (Gensler et al. 2012). Consumers that have positive associations with the offline retail brand also develop favorable associations regarding the online retail brand and vice versa because they strive for consistency among the information regarding the multichannel retailer they hold in memory.

In summary, information regarding retail brands is stored in a cognitive network of interrelated associations in the consumers mind (Barsalou 1991; Nelson et al. 1993) and associations for example regarding retail attributes are integrated into the existing retail brand network. However, the links between the nodes and the connected associations vary in strength due to differing goals and motivations that consumers have and follow, for example with regard to the shopping of goods in different retail sectors. Furthermore complex relationships may occur within associative networks such as reciprocal effects between retail brand equity and perceived value that occur as information retrieval occurs through the spread of activation on one or both directions from one node to another (Anderson 1983; Puligadda et al. 2012). Finally, in accordance with the theory of reasoned action and the summative model of attitudes (Ajzen and Fishbein 1980; Ajzen et al. 1995; Fishbein and Ajzen 1975) it is shown that consumers that hold positive offline brand beliefs or online brand beliefs form positive offline brand associations and online brand associations that lead to conative loyalty. However, these effects vary between grocery retailing and fashion retailing due to consumers' fewer experiences with online shopping in grocery retailing (vs. fashion retailing) as well as due to a differing intensity with that online channels are regarded as a more or less disruptive change in retail sectors (Melis et al. 2015; Verhoef et al. 2015).

1.3. Managerial Implications

As retail branding appears to be a highly relevant topic that relates to various content areas, the consumer-centric perspective of this thesis provides retail managers with valuable insights. The major managerial implications that can be drawn from this doctoral thesis' results will be discussed subsequently.

A strong, attractive, favorable, and unique retail brand is a major success factor when aiming to bond and attract consumers. For retailers it is essential to take the dominating predictors of retail brand equity into account when aiming to strengthen consumer loyalty (e.g., Jinfeng and Zhilong 2009; Swoboda et al. 2013b). The most influential factors when building retail brand equity differ for retailers in different retail sectors. In grocery and fashion retailing managers should concentrate on evoking positive consumer perceptions of assortment and price. However fashion retail manager should also emphasize store layout. In contrast, in electronics retailing, managers should focus on evoking positive perceptions of communication, service, and price, whereas in DIY retailing, service, assortment, and store layout should be primarily focused. Managers can use these mentioned retail attributes to drive retail brand perceptions positively

and thus can create or further boost their retail brand. By addressing these dominating levers when creating brand equity, retailers increase the probability that their consumers develop or intensify loyalty intentions (Van Lin and Gijsbrechts 2014). Besides managers should also be advised that the remaining—less important—levers could be of interest. An additional focus on these levers can lead to positive brand associations in the consumers' minds and thus strengthen the retail brand as well, especially as these factors might represent important differentiating criteria within competition. As it could be expected that competitors might focus on the main levers and their perceptions likewise (e.g., assortment and price in grocery retailing), additionally stressing selected levers could lead to unique associations that consumers develop regarding the retailer. However, investments into branding strategies and thus regarding main and secondary levers need to be carefully evaluated by weighting the possible gain of impact with regard to the retail brand against expected costs.

Diversified retailers such as German Metro Group or Spanish El Corte Inglés need to put special attention to the varying roles of retail attributes for the building of retail brand equity in retail sectors. Branding strategies cannot be easily transferred between retail sectors, because different main levers are important. Price, for example represents a main lever in grocery, fashion, and electronics retailing, whereas in DIY retailing price perceptions constitute a secondary lever when building retail brand equity. Thus, branding strategies might be partially transferrable between retail sectors, but retail managers need to pay special attention to the particular roles of the retail attributes in the sectors, because investments into retail attributes that constitute a main lever in one sector but a secondary lever in another sector could not pay off as expected and thus be incommensurate regarding the return on investment.

For managers, knowledge on how perceived value and retail brand equity relate to each another over time is highly essential. They can benefit from the interdependencies between both concepts and determine, for example, which of them has a stronger effect on consumer behavior and thus how resources should be allocated efficiently. Overall value perceptions and retail brand perceptions individually but also jointly through their reciprocal relationship lead to an increase of loyalty intentions. However the overall effect of retail brand equity on loyalty is stronger than the overall effect of perceived value. Thus, following a strategy which aims to call forth positive brand perceptions pays off. The retail brand equity that is created, positively influences consumer behavior, but also serves as a halo and leads to an increase in value perceptions. Focusing on the delivery of value to the customer pays off also, even though to a smaller extent as does emphasizing the retail brand. Positive value perceptions lead to an increase of retail brand equity and positively influence con-

sumer behavior. Because retailers are advised to target both aspects, they need to carefully align their branding strategies so that the offered value and the retail brand can both lead to positive consumer perceptions. In this vein retailers need to assure that consumers can easily perceive both aspects and even more importantly can link both aspects easily. When information regarding these aspects is strongly linked within consumer memory it can be easily retrieved in decision situations and thus may foster the consumers' decision.

With regard to sector-specific characteristics fashion retail managers should more strongly emphasize the hedonic value the retailer offers its customer, whereas a grocery retail manager should more strongly emphasize the utilitarian value the retailer offers. These differences are due to differing dominating shopping motives in the retail sectors. However, though retailers should emphasize one value dimension (hedonic or utilitarian value) the remaining dimension should not be totally neglected, because both are not mutually exclusive (Sweeney and Soutar 2001). Thus, besides the necessity to invest in the building of strong, attractive, favorable, and unique retail brand, retail managers of both retail sectors need to focus on delivering value to their customers. As far as hedonic value is concerned the recruitment and the training of frontline staff may constitute critical success factors when aiming to deliver on this value dimension, because employees need the ability to deliver emotional and social value to the customer. However, emotional and social value might also be delivered by a highly arousing store design, for example. In contrast, when aiming to deliver utilitarian value that is quality value and price value, retailers need to strategically evaluate the products they sell and their prices, to assess whether these two strategic levers can be improved by weighing possible costs of change management against the potential benefits.

Multichannel retail managers need to pay attention to interdependencies that occur between retail channels. Knowledge on how channels interact is crucial, as retailers can benefit from channel synergies when they implement channels and/or advance the integration between channels to increase the consumer's shopping experience and thus consumer retention and sales (Herhausen et al. 2015; Payne and Frow 2004; Schramm-Klein et al. 2011; Verhoef et al. 2015; Zhang et al. 2010). As consumers strive for consonance among the information they hold in memory regarding a retailer, overall, retail managers need to be aware of the main strategic levers and need to assure consistency among these 'touchpoints' that are offline and online brand beliefs and offline and online retail brand (e.g., Payne and Frow 2004). As former brick-and-mortar retailers have been analyzed, the effects on loyalty that originate in the offline channel are stronger than those originating in the online channel. Retailers like Tesco or H&M have to put special attention on the consumer's per-

ceived offline brand beliefs which strongly drive consumer behavior. A clear focus on creating positive offline and online consumer perceptions toward the multichannel retailer lies at hand and especially retailers with a strong OfP can easily benefit from channel synergies. In contrast, retailers with a weak OfP cannot benefit from these effects. However, they need to strategically address their online brand beliefs and furthermore their brand performance.

Multichannel strategies should be developed, enhanced, and implemented taking sector-specific considerations and varying strong (vs. weak) OfP and OnP into account. Fashion retailers with a strong (vs. weak) OfP should strategically emphasize their online brand beliefs, what can lead to a competitive advantage against weak competitors. This advantage is due to the stronger influence of the consumer's online brand beliefs perceptions on offline retail brand equity and can be achieved by emphasizing online brand beliefs in communicative messages for example. Fashion retailers with a strong (vs. weak) OnP should focus on offline brand beliefs whose effect on offline and online retail brand equity is stronger, compared to their weak competitors. Also, strong OnP fashion retail managers should focus on offline and online retail brands, because they can benefit from stronger effects of both on loyalty. Overall, fashion retailers that have a strong OfP and OnP benefit from channel synergies that occur between brand beliefs and retail brand equity and that strongly affect loyalty. In contrast, grocery retailers need to take a different focus within their multichannel strategies. Grocery retailers with a strong (vs. weak) OfP and OnP can benefit from a strong influence of offline brand beliefs on offline retail brand equity. Thus, they should rely on communicating them to enhance the consumer's offline channel perceptions and to gain further advantages. Additionally, for strong OfP retailers a further advantage can be achieved by emphasizing both channel retail brands to attract and retain consumers.

Besides considering the cross-channel effects between brand beliefs and retail brand equity retail managers need to consider the reciprocity between offline retail brand equity and online retail brand equity when managing their retail brands across channels. Actions that target the offline retail brand are likely to spillover on the online retail brand and vice versa. Thus, retailers need to carefully evaluate how branding strategies should be implemented to benefit from the synergies between the brands with regard to loyalty.

In summary, fashion retailers and grocery retailers should both take cross-channel synergies into account when developing or enhancing their multichannel strategies. The offline and the online retail brand should not be considered individually but as members of a brand system in which reciprocal relationships occur. Thus, one brand can create value by furthermore assisting

the other brand (Aaker 2002, p. 241). Different strengths of effects should be taken into account when allocating budgets with regard to the offline and online channels, especially by considering the future role of channels in an adequate way and not be solely relying on past channel roles.

Based on the aforementioned managerial implications that can be drawn from the three studies that were conducted in scope of this doctoral thesis the main takeaways for retail managers are presented subsequently:

- Retailers should consider sector-specific core levers as determinants of retail brand equity (e.g., assortment and price in grocery retailing).
- Retailers may cautiously emphasize subordinate levers in the retail sector they are operating what may lead to a competitive advantage.
- Retail brand equity and perceived value should be addressed jointly and managers should assure that consumers can link them easily so that the retailer can benefit from feedback effects.
- Fashion retailer managers should emphasize on offering hedonic value to their customers for instance by conveying social value or emotional value with their communicative messages.
- Grocery retail managers should more strongly emphasize utilitarian value by especially communicating the quality and prices they offer, for example.
- Managers of multichannel retailers need to take synergies between channels into account when aiming to attract their consumers.
- Retail managers should strive for channel integration as positive crosswise and reciprocal effects between channel perceptions regarding brand beliefs and retail brands occur.

2. Further Research

Beyond providing theoretical and managerial implications, this doctoral thesis also offers starting points for further research. Although limitations and further research areas are discussed at the end of each of the three studies, general areas for further research emerge with regard to the data basis and methodology, the conceptual and theoretical framing, and the overall topic of retail brand equity.

First, although this doctoral thesis is based on large data samples, there are possibilities to extend the data basis for future research. Focusing on further

sectors (e.g., service retailing or health and beauty retailing) as well as focusing on further countries would broaden the scope of the implications that can be drawn from such a study. Also even though a census-based quota sampling was applied sector-specific quota samples might be able to give a more precise view and thus would allow for further conclusions. Furthermore future research could validate this thesis' results by the use of secondary data such as objective purchase data for example. Beyond that, using objective data would also decrease the threat of common method variance (Chang et al. 2010). This thesis used longitudinal designs that allow analyzing reciprocal effects. The use of longitudinal designs supports overcoming the statistical shortcomings of cross-sectional designs such as equilibrium and stationary (Kline 2011; Swoboda et al. 2013a). However, applying a randomized experimental design would be a suitable alternative to make valid claims about causality among the constructs of interest (Antonakis et al. 2010, 2014). It might be also of particular interest to apply latent growth modeling to analyze for example whether retail brand equity and perceived value or offline and online retail brand equity might be able to predict systematic changes or growth of loyalty over time (Kline 2011; Preacher et al. 2008).

Second, it might be fruitful to explore further perspectives relevant to antecedents and effects of retail brand equity. Though special attention was given to the selection of retail attributes that affect retail brand perceptions it might be interesting to verify and extend the present results by including further retail attributes such as location or institutional factors (e.g., Allaway et al. 2011; Diallo 2012; Jinfeng and Zhilong 2009; Swoboda et al. 2013b). Despite of that, this study illuminated the reciprocity between perceived value and retail brand equity in two retail sectors. However, the study focused on consumer perceptions regarding brick-and-mortar retailers in grocery and fashion retailing. Especially as the importance of e-commerce and online/mobile channels rises further insights into the reciprocity between brand perceptions and perceived value in a multichannel context might enlarge the scope of implications that can be drawn from such a study (Carlson et al. 2015; Noble et al. 2005). Further insights into retail branding in multichannel contexts could also be provided by extending the theoretical framework. An additional focus in channel-specific consumer behavioral outcomes (e.g., offline and online loyalty or offline and online purchase intentions) could lead to further conclusions (e.g., Herhausen et al. 2015; Kwon and Lennon 2009a). In this vein, a further differentiation between retailers' online channels and mobile channels could also enlarge the conclusions that might be drawn from such a study, as could be a further analysis of the role of trust in online retailing (Gefen et al. 2008; McCole et al. 2010; McKnight et al. 2002; Weiber and Egner-Duppich 2006; Zhang et al. 2010).

Finally, there are numerous consumer characteristics, firm-specific variables, and market characteristics that can be considered as boundary conditions and thus as moderators in research on retail brand equity. First of all this study does no account for format differences and research should further explore whether effects of retail attributes on retail brand equity and effects of the latter on consumer behavior vary for different retail formats (e.g., Cleeren et al. 2010; Swoboda et al. 2014). In this vein format differences should also be illuminated with regard to reciprocal relationships as the strength of reciprocal effects but also the strength of total effects on consumer behavioral outcome variables mighty vary. Fruitful conclusions could be drawn from such studies. Another interesting research field that should be addressed is the moderating role of shopping motives with regard to retail branding. It might be interesting to illuminate whether consumer perceptions regarding retailer cues such as retail attributes, perceived value, and retail brand equity and the effects among them vary for different shopping motives or for different shopping situations (e.g., Ganesh et al. 2010; Noble et al. 2006; Schröder and Zaharia 2008). Focusing on these issues might enlarge the scope of implications that can be drawn. Future research should also focus on the influence of channel integration on channel perceptions within multichannel retailing and thus provide a much more expanded view of the consumer's shopping experience in the retailers' traditional channel and his online or mobile channels. In this vein further research should also consider consumers' search and purchase behavior in the channels and should further emphasize the role of channel lock-in and cross-channel synergies (Deleersnyder et al. 2002; Kollmann et al. 2012; Verhoef et al. 2007b). Empirical studies that focus on these aspects could offer major contributions to current knowledge on these issues.

Thus, the inclusion of the above mentioned boundary conditions would offer novel and valuable contributions to our current knowledge with regard to the efficient management of retail brands and thus further enhance existing knowledge with regard to customer-based behavioral outcomes and important influential factors.

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Appendix

1. Study 1: Sector-specific Antecedents of Retail Brand Equity

1.1. Rival Models

Besides the calculation of the proposed model that includes the effects of the retail attributes on retail brand equity and the effects of retail brand equity on loyalty, we computed further two rival models. The rival models were calculated because it is theoretically conceivable that the perceptions of retail attributes not only affect loyalty via retail brand equity, but over and above that also influence loyalty directly. We therefore computed a first rival model in which in addition to the proposed model we also modeled the direct effects of retail attributes on loyalty (see Table E-1). To test whether the direct effects of retail attributes on loyalty were significant we applied a bootstrap test (see Table E-2). The fit of the rival model (CFI .915; TLI .906; RMSEA .055; SRMR .067; χ^2 (1496) = 4088.066) was significantly poorer than the fit of the proposed model ($\Delta\chi^2$ = 49.789 (26); p < .01). In the second rival model we tested the retail brand equity-attributes-loyalty relationship (see Table E-3). Again, the model fit (CFI .898; TLI .884; RMSEA .061; SRMR .068; χ^2 (1528) = 4570.899) was significantly poorer than the fit of the proposed model ($\Delta\chi^2$ = 532.682 (6); p < .001). We thus choose to rely on the proposed model for the hypotheses testing.

J.K. Weindel, *Retail Brand Equity and Loyalty*, Handel und Internationales Marketing / Retailing and International Marketing, DOI 10.1007/978-3-658-15037-2

(N = 2112)	1 – Grocery retailing			2 – Fashion retailing			3 – Electronics retailing			4 – DIY retailing			Difference test between retail sectors					
Effects	b	β	*p*	b	β	*p*	b	β	*p*	b	β	*p*	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4
Direct effects																		
ASS → RBE	.145	.112	ns	.364	.280	**	.125	.070	ns	.213	.128	ns	ns	ns	ns	ns	ns	ns
PRI → RBE	.333	.264	***	.382	.337	***	.298	.146	**	.344	.189	***	ns	ns	ns	ns	ns	ns
LAY → RBE	.257	.262	*	.240	.299	**	.190	.225	***	.172	.219	**	ns	ns	ns	ns	ns	ns
COM → RBE	.137	.171	**	.072	.099	*	.236	.283	***	.091	.101	*	ns	*	ns	***	ns	***
SER → RBE	.222	.247	***	.108	.152	*	.347	.367	***	.334	.361	***	ns	ns	ns	**	***	ns
ASS → LOY	.489	.429	***	.463	.368	***	.495	.359	***	.561	.440	***	ns	ns	ns	ns	ns	ns
PRI → LOY	.148	.134	**	.057	.052	ns	.104	.065	ns	.137	.098	ns	ns	ns	ns	ns	ns	ns
LAY → LOY	.046	.053	ns	-.045	-.057	ns	.141	.216	**	.001	.001	ns	ns	ns	ns	*	ns	*
COM → LOY	-.076	-.018	*	.013	.019	ns	-.031	-.048	ns	.027	.040	ns	*	ns	*	ns	ns	ns
SER → LOY	-.099	-.126	*	-.012	-.017	ns	.005	.007	ns	.043	.061	ns	ns	ns	*	ns	ns	ns
RBE → LOY	.492	.558	***	.511	.528	***	.299	.384	***	.263	.343	***	ns	*	*	*	***	ns
Indirect effects via RBE																		
ASS → LOY	.071	.063	ns	.186	.148	**	.037	.027	ns	.056	.044	ns	ns	ns	ns	ns	*	ns
PRI → LOY	.163	.148	***	.195	.178	***	.089	.056	*	.091	.065	**	ns	ns	ns	*	*	ns
LAY → LOY	.126	.146	*	.123	.158	*	.057	.087	**	.045	.075	*	ns	ns	ns	ns	ns	ns
COM → LOY	.067	.096	**	.037	.052	*	.070	.109	***	.024	.034	*	ns	ns	*	ns	ns	*
SER → LOY	.109	.138	**	.055	.080	ns	.104	.141	***	.088	.124	***	ns	ns	ns	ns	ns	ns
R^2 RBE		.580	***		.566	***		.643	***		.623	***						
R^2 LOY		.776	***		.599	***		.706	***		.718	***						
Covariates																		
Gender	.109	.056	ns	.037	.021	ns	-.012	-.006	ns	.026	.015	ns	ns	ns	ns	ns	ns	ns
Age	-.039	-.066	*	.007	.013	ns	-.031	-.060	ns	-.048	-.085	**	ns	ns	ns	ns	*	ns
Familiarity	.269	.243	***	.080	.052	ns	.021	.012	ns	-.014	.011	ns	***	***	***	ns	ns	ns

Structural model fit: CFI .915; TLI .906; RMSEA .055; SRMR .067; $\chi^2(1496) = 4088.006$.

Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; b = unstandardized coefficient; β = standardized coefficients.

*** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant.

Table E-1: Rival model I - Direct and indirect effects of retail attributes on intentional loyalty

Source: Own creation.

	1 – Grocery retailing					2 – Fashion retailing					3 – Electronics retailing					4 – DIY retailing				
Effects	S.E.	b	Lower	Upper	*p*	S.E.	b	Lower	Upper	*p*	S.E.	b	Lower	Upper	*p*	S.E.	b	Lower	Upper	*p*
Direct effects																				
ASS → RBE	.135	.145	-.077	.373	ns	.141	.364	.147	.608	**	.113	.125	-.069	.297	ns	.146	.213	-.024	.452	ns
PRI → RBE	.061	.333	.236	.434	***	.063	.382	.289	.495	***	.109	.298	.130	.488	**	.105	.344	.174	.524	***
LAY → RBE	.137	.257	.037	.487	*	.115	.240	.066	.436	**	.062	.190	.101	.303	***	.068	.172	.069	.291	**
COM → RBE	.045	.137	.064	212	**	.033	.072	.014	.123	*	.039	.236	.174	.303	***	.043	.091	.020	.162	*
SER → RBE	.074	.222	.098	.342	***	.070	.108	.009	.222	*	.045	.347	.272	.418	***	.049	.334	.255	.415	***
ASS → LOY	.112	.489	.332	.697	***	.463	.095	.243	.711	***	.098	.495	.347	.667	***	.118	.561	.389	778	***
PRI → LOY	.051	.148	.062	.228	**	.057	.144	-.060	.171	ns	.096	.104	-.059	.255	ns	.080	.137	.009	.270	ns
LAY → LOY	.112	.046	-.152	.216	ns	-.045	.070	-.220	.115	ns	.048	.141	.069	.223	**	.048	.001	-.079	.075	ns
COM → LOY	.035	-.076	-134	-.021	*	.013	.102	-.043	.067	ns	.032	-.031	-.087	.019	ns	.032	.027	-.025	.082	ns
SER → LOY	.052	-.099	-.187	-.015	*	-.012	.033	-.116	.080	ns	.047	.005	-.076	.078	ns	.040	.043	-.025	.108	ns
RBE → LOY	.069	.492	.385	.610	***	.060	.511	.359	.672	***	.069	.299	.188	.412	***	.061	.263	.162	.367	***
Indirect effects via RBE																				
ASS → LOY	.067	.071	-.038	.184	ns	.079	.186	.071	.325	**	.035	.037	-.022	.089	ns	.038	.056	-.007	.118	ns
PRI → LOY	.038	.163	.108	.232	***	.050	.195	.124	.287	***	.041	.089	.033	.166	*	.037	.091	.037	.156	**
LAY → LOY	.072	.126	.018	.249	*	.066	.123	.032	.243	*	.024	.057	.026	.103	**	.023	.045	.014	.087	*
COM → LOY	.025	.067	.030	.112	**	.019	.037	.007	.069	*	.021	.070	.039	.108	***	.024	.024	.005	.045	*
SER → LOY	.040	.109	.047	.176	**	.039	.055	-.004	.124	ns	.028	.104	.061	.152	***	.088	.088	.049	.131	***
Covariates																				
Gender	.061	.109	-.010	.209	ns	.065	.037	-.072	.144	ns	.063	-.012	-.115	.091	ns	.057	.026	-.068	.120	ns
Age	.021	-.039	-.073	-.005	*	.020	.007	-.026	.041	ns	.018	-.031	-.061	.002	ns	.018	-.048	-.077	-.019	**
Familiarity	.039	.269	.205	.334	***	.057	.080	-.012	.174	ns	.063	.021	-.083	.125	ns	.043	-.014	-.084	.056	ns

Note: ASS = Assortment. PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; S.E. = Standard error; b = Unstandardized coefficients; Lower: Lower limit of confidence interval; Upper: Upper limit of confidence interval; 95% confidence interval limits are shown; bootstrap samples = 5.000.
*** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant:

Table E-2: Rival model I – Test for direct and indirect effects using bootstrapping

Source: Own creation.

(N = 2112)	1 – Grocery retailing			2 – Fashion retailing			3 – Electronics retailing			4 – DIY retailing			Difference test between retail sectors					
Effects	b	β	*p*	b	β	*p*	b	β	*p*	b	β	*p*	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4
RBE → ASS	.593	.819	***	.807	.873	***	.369	.639	***	.481	.772	***	**	***	*	***	***	**
RBE → PRI	.292	.347	***	.013	.013	ns	.270	.543	***	.369	.646	***	***	ns	ns	***	***	**
RBE → LAY	.771	.789	***	1.047	.858	***	.697	.724	***	.794	.754	***	**	ns	ns	***	**	ns
RBE → COM	.738	.558	***	.478	.301	***	.657	.539	***	.506	.441	***	**	ns	**	ns	ns	*
RBE → SER	.822	.698	***	1.328	.796	***	.700	.652	***	.806	.722	***	***	ns	ns	***	***	ns
ASS → LOY	.808	.603	***	.743	.591	***	.546	.405	***	.633	.508	***	ns	*	ns	ns	ns	ns
PRI → LOY	.223	.193	***	.219	.193	***	.236	.151	**	.257	.189	***	ns	ns	ns	ns	ns	ns
LAY → LOY	.207	.208	**	.102	.107	ns	.263	.325	***	.088	.119	*	ns	ns	ns	ns	ns	**
COM → LOY	-.038	-.051	ns	.041	.056	ns	.031	.049	ns	.041	.061	ns	ns	ns	*	ns	ns	ns
SER → LOY	-.027	-.033	ns	.017	.025	ns	.110	.151	**	.110	.158	**	ns	*	*	ns	ns	ns
R^2 LOY		.754	***		.545	***		.674	***		.685	***						
Covariates																		
Gender	.135	.066	*	.056	.032	ns	.010	.006	ns	.017	.010	ns	ns	ns	ns	ns	ns	ns
Age	-.036	-.058	ns	-.015	-.040	ns	-.029	-.055	ns	-.032	-.058	ns	ns	ns	ns	ns	ns	ns
Familiarity	.281	.244	***	.068	.044	ns	.039	.023	ns	-.019	-.015	ns	**	**	***	ns	ns	ns

Structural model fit: CFI .898; TLI .884; RMSEA .061; SRMR .068; $\chi^2(1528) = 4570.899$.

Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; SER = Service; RBE = Retail brand equity; LOY = Intentional loyalty; b = unstandardized coefficient; β = standardized coefficients.

*** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant.

Table E-3: Rival model II – Effects of retail brand equity on intentional loyalty via retail attributes

Source: Own creation.

2. Study 2: Reciprocity between Perceived Value and Retail Brand Equity

2.1. Item Parceling for the Perceived Value Scale

Rather than using four latent constructs that represent the dimensions of perceived value, we used one item for each dimension, and this method yielded one latent construct with four items. The item parceling was performed by averaging the item scores (Bandalos 2002) for each dimension of perceived value. Therefore, prior to testing the overall measurement model in conjunction with perceived value in a confirmatory factor analysis using parcels, we tested the original measurement scale of perceived value (i.e., the four dimensions) for reliability and validity (see Table E-4 to Table E-9) for all of our six models.

		Time point 1							Time point 2							Time point 3						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion sector																						
	QV1	5.6/1.2	.856		.701			.805	5.6/1.1	.835		.659			.556	5.6/1.1	.821		.641			.736
	QV2	5.3/1.3	.787		.604			.714	5.3/1.2	.744		.536			.673	5.2/1.2	.749		.531			.669
Quality	QV3	5.4/1.3	.894	.719	.746	.807	.817	.895	5.4/1.2	.864	.647	.674	.768	.781	.835	5.4/1.2	.866	.688	.681	.763	.775	.843
value	QV4[a]	5.5/1.3	-		-			-	5.4/1.3	-		-			-	5.4/1.3	-		-			-
	QV5[a]	4.0/1.9	-		-			-	4.0/1.9	-		-			-	4.2/1.8	-		-			-
	QV6	5.1/1.5	.666		.477			.514	5.2/1.4	.647		.443			.510	5.2/1.4	.644		.435			.503
	PV1	5.4/1.2	.896		.790			.896	5.5/1.1	.844		.704			.809	5.5/1.1	.842		.695			.783
Price	PV2	5.4/1.2	.904	.787	.802	.879	.879	.917	5.4/1.2	.878	.768	.751	.850	.854	.869	5.4/1.2	.857	.785	.711	.838	.843	.819
value	PV3	4.9/1.5	.866		.755			.776	5.2/1.3	.847		.717			.766	5.1/1.3	.869		.743			.826
	PV4	5.5/1.3	.771		.630			.630	5.5/1.2	.757		.600			.629	5.4/1.2	.719		.550			.598
	SV1	4.4/1.3	.846		.668			.754	4.6/1.2	.856		.682			.777	4.7/1.2	.861		.686			.787
Social	SV2	4.2/1.3	.920	.703	.806	.855	.864	.909	4.4/1.3	.928	.696	.822	.858	.868	.926	4.4/1.3	.930	.682	.822	.854	.864	.923
value	SV3	3.8/1.6	.885		.734			.811	4.0/1.6	.878		.727			.790	4.2/1.5	.859		.693			.771
	SV4[a]	5.5/1.4	-		-			-	5.6/1.3	-		-			-	5.5/1.2	-		-			-
	EV1	5.7/1.2	.936		.846			.923	5.7/1.1	.888		.743			.843	5.7/1.1	.909		.788			.874
	EV2[a]	4.9/1.8	-		-			-	5.1/1.6	-		-			-	5.0/1.5	-		-			-
Emotional	EV3	5.7/1.1	.936	.732	.846	.906	.909	.912	5.7/1.1	.907	.734	.780	.868	.869	.838	5.7/1.1	.891	.741	.753	.878	.878	.818
value	EV4	5.7/1.2	.883		.751			.800	5.7/1.2	.877		.726			.812	5.6/1.2	.891		.753			.831
	EV5[a]	4.7/1.7	-		-			-	4.8/1.7	-		-			-	4.8/1.6	-		-			-
Grocery sector																						
	QV1	5.6/1.2	.673		.614			.658	5.5/1.2	.611		.582			.596	5.5/1.1	.588		.561			.566
	QV2	4.8/1.5	.750		.645			.816	4.9/1.4	.775		.628			.819	5.0/1.3	.696		.540			.775
Quality	QV3	5.1/1.3	.901	.725	.740	.807	.815	.872	5.1/1.3	.925	.663	.727	.790	.770	.894	5.2/1.2	.802	.664	.607	.737	.740	.786
value	QV4[a]	5.9/1.3	-		-			-	5.9/1.1	-		-			-	5.8/1.1	-		-			-
	QV5[a]	5.8/1.5	-		-			-	5.8/1.3	-		-			-	5.7/1.3	-		-			-
	QV6	5.4/1.4	.557		.517			.526	5.4/1.3	.486		.471			.554	5.5/1.2	.434		.415			.506

Table to be continued

Table E-4 continued

Price value	PV1	5.5/1.2	.839	.792	.754	.863	.861	.847	5.6/1.1	.817	.768	.722	.846	.842	.828	5.6/1.1	.736	.780	.651	.836	.832	.756
	PV2	5.3/1.3	.932		.820			.940	5.4/1.2	.882		.765			.889	5.5/1.1	.891		.769			.886
	PV3	5.0/1.5	.772		.715			.750	5.1/1.3	.741		.679			.723	5.2/1.2	.742		.669			.732
	PV4	5.4/1.3	.625		.592			.601	5.5/1.2	.620		.578			.580	5.5/1.2	.645		.593			.616
Social value	SV1	4.4/1.3	.721	.708	.620	.809	.811	.697	4.5/1.3	.787	.722	.674	.838	.838	.783	4.6/1.3	.791	.715	.668	.823	.819	.796
	SV2	4.4/1.3	.837		.709			.841	4.3/1.3	.839		.743			.831	4.4/1.3	.841		.731			.826
	SV3	3.6/1.7	.763		.676			.768	3.8/1.6	.778		.707			.783	4.0/1.6	.736		.664			.730
	SV4[a]	5.0/1.4	-		-			-	5.1/1.3	-		-			-	5.1/1.3	-		-			-
Emotional value	EV1	5.5/1.2	.566	.655	.513	.784	.818	.517	5.6/1.1	.611	.663	.558	.801	.812	.579	5.6/1.1	.675	.703	.624	.812	.817	.718
	EV2[a]	4.8/1.8	.168		-			-	4.8/1.7	-		-			-	4.9/1.6	-		-			-
	EV3	5.2/1.2	.876		.718			.788	5.3/1.2	.909		.747			.792	5.3/1.2	.867		.715			.800
	EV4	5.0/1.6	.722		.653			.876	5.2/1.3	.736		.654			.875	5.3/1.3	.726		.655			.795
	EV5[a]	5.2/1.3	-		-			-	5.1/1.5	-		-			-	5.1/1.5	-		-			-

Confirmatory model fits:
Time point one (fashion sector): CFI .917; TLI .893; RMSEA .095; $\chi^2(71) = 224.842$; SCF= 1.25.
Time point two (fashion sector): CFI .888; TLI .856; RMSEA .099; $\chi^2(71) = 245.154$; SCF = 1.28.
Time point three (fashion sector): CFI .926; TLI .905; RMSEA .081; $\chi^2(71) = 182.780$; SCF = 1.22.
Time point one (grocery sector): CFI .919; TLI .896; RMSEA .080; $\chi^2(71) = 178.112$; SCF = 1.31.
Time point two (grocery sector): CFI .887; TLI .855; RMSEA .094; $\chi^2(71) = 218.791$; SCF = 1.30.
Time point three (grocery sector): CFI .921; TLI .899; RMSEA .073; $\chi^2(71) = 162.280$; SCF = 1.30.
Note: QV = Quality value; PV = Price value; SV = Social value; EV = Emotional value; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.
[a] Item deleted due to low factor loading.

Table E-4: Reliability and validity of the perceived value scale

Source: Own creation.

		Time point 1							Time point 2							Time point 3						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion sector																						
	QV1	5.6/1.2	.856		.701			.807	5.6/1.1	.835		.659			.755	5.6/1.1	.821		.641			.713
	QV2	5.3/1.3	.787		.604			.703	5.3/1.2	.744		.536			.645	5.2/1.2	.749		.531			.683
Quality	QV3	5.4/1.3	.894		.746			.900	5.4/1.2	.864		.674			.884	5.4/1.2	.866		.681			.863
value	QV4[a]	5.5/1.3	-	.719	-	.807	.816	-	5.4/1.3	-	.647	-	.768	.774	-	5.4/1.3	-	.688	-	.763	.774	-
	QV5[a]	4.0/1.9	-		-			-	4.0/1.9	-		-			-	4.2/1.8	-		-			-
	QV6	5.1/1.5	.666		.477			.514	5.2/1.4	.647		.443			.557	5.2/1.4	.644		.435			.583
	PV1	5.4/1.2	.896		.790			.899	5.5/1.1	.844		.704			.819	5.5/1.1	.842		.695			.788
Price	PV2	5.4/1.2	.904		.802			.917	5.4/1.2	.878		.751			.879	5.4/1.2	.857		.711			.822
value	PV3	4.9/1.5	.866	.787	.755	.879	.911	.771	5.2/1.3	.847	.768	.717	.850	.852	.749	5.1/1.3	.869	.785	.743	.838	.843	.820
	PV4	5.5/1.3	.771		.630			.631	5.5/1.2	.757		.600			.617	5.4/1.2	.719		.550			.595
Grocery sector																						
	QV1	5.6/1.2	.673		.614			.646	5.5/1.2	.611		.582			.580	5.5/1.1	.588		.561			.569
	QV2	4.8/1.5	.750		.645			.784	4.9/1.4	.775		.628			.793	5.0/1.3	.696		.540			.752
Quality	QV3	5.1/1.3	.901		.740			.910	5.1/1.3	.925		.727			.939	5.2/1.2	.802		.607			.796
value	QV4[a]	5.9/1.3	-	.725	-	.807	.813	-	5.9/1.1	-	.663	-	.790	.797	-	5.8/1.1	-	.664	-	.737	.744	-
	QV5[a]	5.8/1.5	-		-			-	5.8/1.3	-		-			-	5.7/1.3	-		-			-
	QV6	5.4/1.4	.557		.517			.526	5.4/1.3	.486		.471			.536	5.5/1.2	.434		.415			.528
	PV1	5.5/1.2	.839		.754			.850	5.6/1.1	.817		.722			.825	5.6/1.1	.736		.651			.755
Price	PV2	5.3/1.3	.932		.820			.940	5.4/1.2	.882		.765			.900	5.5/1.1	.891		.769			.892
value	PV3	5.0/1.5	.772	.792	.715	.863	.863	.753	5.1/1.3	.741	.768	.679	.846	.841	.717	5.2/1.2	.742	.780	.669	.836	.832	.725
	PV4	5.4/1.3	.625		.592			.602	5.5/1.2	.620		.578			.577	5.5/1.2	.645		.593			.616

Confirmatory model fits:
Time point one (fashion sector): CFI .906; TLI .861; RMSEA .079; $\chi^2(19) = 107.943$; SCF = 1.20.
Time point two (fashion sector): CFI .887; TLI .834; RMSEA .099; $\chi^2(19) = 98.717$; SCF = 1.24.
Time point three (fashion sector): CFI .890; TLI .837; RMSEA .081; $\chi^2(19) = 93.404$; SCF = 1.19.
Time point one (grocery sector): CFI .935; TLI .904; RMSEA .099; $\chi^2(19) = 63.144$; SCF = 1.40.
Time point two (grocery sector): CFI .905; TLI .859; RMSEA .117; $\chi^2(19) = 80.610$; SCF = 1.29.
Time point three (grocery sector): CFI .913; TLI .871; RMSEA .097; $\chi^2(19) = 62.068$; SCF = 1.40.
Note: QV = Quality value; PV = Price value; SV = Social value; EV = Emotional value; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.
[a] Item deleted due to low factor loading.

Table E-5: Reliability and validity of the utilitarian value scale

Source: Own creation.

		Time point 1							Time point 2							Time point 3						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion sector																						
Social value	SV1	4.4/1.3	.846	.703	.668	.855	.864	.729	4.6/1.2	.856	.696	.682	.858	.746	.748	4.7/1.2	.861	.682	.686	.854	.836	.757
	SV2	4.2/1.3	.920		.806			.926	4.4/1.3	.928		.822			.942	4.4/1.3	.930		.822			.962
	SV3	3.8/1.6	.885		.734			.813	4.0/1.6	.878		.727			.798	4.2/1.5	.859		.693			.752
	SV4[a]	5.5/1.4	-		-			-	5.6/1.3	-		-			-	5.5/1.2	-		-			-
Emotional value	EV1	5.7/1.2	.936	.732	.846	.906	.907	.925	5.7/1.1	.888	.734	.743	.868	.869	.824	5.7/1.1	.909	.741	.788	.878	.878	.874
	EV2[a]	4.9/1.8	-		-			-	5.1/1.6	-		-			-	5.0/1.5	-		-			-
	EV3	5.7/1.1	.936		.846			.920	5.7/1.1	.907		.780			.872	5.7/1.1	.891		.753			.824
	EV4	5.7/1.2	.883		.751			.784	5.7/1.2	.877		.726			.797	5.6/1.2	.891		.753			.825
	EV5[a]	4.7/1.7	-		-			-	4.8/1.7	-		-			-	4.8/1.6	-		-			-
Grocery sector																						
Social value	SV1	4.4/1.3	.721	.708	.620	.809	.809	.696	4.5/1.3	.787	.722	.674	.838	.838	.765	4.6/1.3	.791	.715	.668	.823	.820	.784
	SV2	4.4/1.3	.837		.709			.852	4.3/1.3	.839		.743			.855	4.4/1.3	.841		.731			.836
	SV3	3.6/1.7	.763		.676			.757	3.8/1.6	.778		.707			.777	4.0/1.6	.736		.664			.733
	SV4[a]	5.0/1.4	-		-			-	5.1/1.3	-		-			-	5.1/1.3	-		-			-
Emotional value	EV1	5.5/1.2	.566	.655	.513	.784	.796	.550	5.6/1.1	.611	.663	.558	.801	.819	.620	5.6/1.1	.675	.703	.624	.812	.818	.717
	EV2[a]	4.8/1.8	.168		-			-	4.8/1.7	-		-			-	4.9/1.6	-		-			-
	EV3	5.2/1.2	.876		.718			.814	5.3/1.2	.909		.747			.846	5.3/1.2	.867		.715			.817
	EV4	5.0/1.6	.722		.653			.849	5.2/1.3	.736		.654			.822	5.3/1.3	.726		.655			.781
	EV5[a]	5.2/1.3	-		-			-	5.1/1.5	-		-			-	5.1/1.5	-		-			-

Confirmatory model fits:
Time point one (fashion sector): CFI .917; TLI .893; RMSEA .095; $\chi^2(71) = 224.842$; SCF = 1.25.
Time point two (fashion sector): CFI .888; TLI .856; RMSEA .099; $\chi^2(71) = 245.154$; SCF = 1.28.
Time point three (fashion sector): CFI .926; TLI .905; RMSEA .081; $\chi^2(71) = 182.780$; SCF = 1.22.
Time point one (grocery sector): CFI .919; TLI .896; RMSEA .080; $\chi^2(71) = 178.112$; SCF = 1.31.
Time point two (grocery sector): CFI .887; TLI .855; RMSEA .094; $\chi^2(71) = 218.791$; SCF = 1.30.
Time point three (grocery sector): CFI .921; TLI .899; RMSEA .073; $\chi^2(71) = 162.280$; SCF = 1.30.
Note: QV = Quality value; PV = Price value; SV = Social value; EV = Emotional value; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.
[a] Item deleted due to low factor loading.

Table E-6: Reliability and validity of the hedonic value scale

Source: Own creation.

		Time Point 1				Time Point 2				Time Point 3			
		1	2	3	4	1	2	3	4	1	2	3	4
Fashion sector													
1	QV	**.562**				**.552**				**.578**			
2	PV	*.094*	**.606**			*.065*	**.669**			*.120*	**.665**		
3	SV	*.352*	*.269*	**.707**		*.413*	*.201*	**.708**		*.345*	*.225*	**.695**	
4	EV	*.462*	*.135*	*.162*	**.733**	*.426*	*.138*	*.125*	**.732**	*.487*	*.200*	*.135*	**.732**
Grocery sector													
1	QV	**.643**				**.628**				**.656**			
2	PV	*.006*	**.632**			*.007*	**.619**			*.086*	**.662**		
3	SV	*.441*	*.093*	**.642**		*.391*	*.156*	**.616**		*.540*	*.165*	**.577**	
4	EV	*.503*	*.085*	*.311*	**.810**	*.480*	*.073*	*.347*	**.794**	*.158*	*.138*	*.311*	**.697**

Confirmatory model fits:
Time point one (fashion sector): CFI .917; TLI .893; RMSEA .095; $\chi^2(71) = 224.842$; SCF = 1.25.
Time point two (fashion sector): CFI .888; TLI .856; RMSEA .099; $\chi^2(71) = 245.154$; SCF = 1.28.
Time point three (fashion sector): CFI .926; TLI .905; RMSEA .081; $\chi^2(71) = 182.780$; SCF = 1.22.
Time point one (grocery sector): CFI .919; TLI .896; RMSEA .080; $\chi^2(71) = 178.112$; SCF = 1.31.
Time point two (grocery sector): CFI .887; TLI .855; RMSEA .094; $\chi^2(71) = 218.791$; SCF = 1.30.
Time point three (grocery sector): CFI .921; TLI .899; RMSEA .073; $\chi^2(71) = 162.280$; SCF = 1.30.
Note: QV = Quality value; PV = Price value; SV = Social value; EV = Emotional value; (1,2,3) = time points; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.

Table E-7: Discriminant validity of the perceived value scale

Source: Own creation.

		Time Point 1		Time Point 2		Time Point 3	
		1	2	1	2	1	2
Fashion sector							
1	Quality value	**.562**		**.547**		**.592**	
2	Price value	*.093*	**.604**	.051	**.661**	.115	**.662**
Grocery sector							
1	Quality value	**.651**		**.680**		**.654**	
2	Price value	*.077*	**.630**	*.052*	**.619**	*.084*	**.662**

Confirmatory model fits:
Time point one (fashion sector): CFI .906; TLI .861; RMSEA .079; $\chi^2(19) = 107.943$; SCF = 1.20.
Time point two (fashion sector): CFI .887; TLI .834; RMSEA .099; $\chi^2(19) = 98.717$; SCF = 1.24.
Time point three (fashion sector): CFI .890; TLI .837; RMSEA .081; $\chi^2(19) = 93.404$; SCF = 1.19.
Time point one (grocery sector): CFI .935; TLI .904; RMSEA .099; $\chi^2(19) = 63.144$; SCF = 1.40.
Time point two (grocery sector): CFI .905; TLI .859; RMSEA .117; $\chi^2(19) = 80.610$; SCF = 1.29.
Time point three (grocery sector): CFI .913; TLI .871; RMSEA .097; $\chi^2(19) = 62.068$; SCF = 1.40.
Note: AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.

Table E-8: Discriminant validity of the utilitarian value scale

Source: Own creation.

		Time Point 1		Time Point 2		Time Point 3	
		1	2	1	2	1	2
Fashion sector							
1	Social value	**.721**		**.614**		**.710**	
2	Emotional value	*.157*	**.728**	*.116*	**.742**	*.125*	**.732**
Grocery sector							
1	Social value	**.641**		**.626**		**.586**	
2	Emotional value	*.310*	**.769**	*.324*	**.774**	*.301*	**.698**

Confirmatory model fits:
Time point one (fashion sector): CFI 1.000; TLI 1.003; RMSEA .000; $\chi^2(8) = 6.770$; SCF = 1.07.
Time point two (fashion sector): CFI 1.000; TLI 1.004; RMSEA .000; $\chi^2(8) = 245.154$; SCF = 1.26.
Time point three (fashion sector): CFI 1.000; TLI 1.016; RMSEA .000; $\chi^2(8) = 2.146$; SCF = 1.08.
Time point one (grocery sector): CFI .986; TLI .974; RMSEA .056; $\chi^2(8) = 14.046$; SCF = 1.41.
Time point two (grocery sector): CFI .963; TLI .931; RMSEA .098; $\chi^2(8) = 26.157$; SCF = 1.39.
Time point three (grocery sector): CFI .988; TLI .977; RMSEA .055; $\chi^2(8) = 13.794$; SCF = 1.30.
Note: AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.

Table E-9: Discriminant validity of the hedonic value scale

Source: Own creation.

2.2. *Reliability and Validity Tests for the Utilitarian and Hedonic Value Models*

		Time point 1							Time point 2							Time point 3						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion sector																						
Utilitarian value with parcels	VAL1	5.3/0.9	.761	.500	.392	.663	.670	.880	5.4/1.0	.773	.500	.302	.664	.635	.774	5.6/1.1	.821	.688	.641	.763	.775	.736
	VAL2	4.4/1.2	.511		.392			.445	5.5/0.9	.582		.302			.491	5.2/1.4	.644		.435			.503
Retail brand equity	RBE1	5.7/1.2	.920	.772	.800	.874	.882	.890	5.7/1.1	.894	.804	.769	.859	.862	.844	5.6/1.1	.858	.792	.691	.816	.820	.799
	RBE2	5.9/1.1	.771		.668			.922	5.9/1.0	.798		.675			.899	5.8/1.0	.750		.606			.856
	RBE3	5.7/1.2	.918		.814			.686	5.7/1.1	.892		.762			.702	5.6/1.1	.882		.711			.652
	RBE4[a]	4.7/1.7	.732		-			-	5.0/1.5	.765		-			-	4.9/1.5	.788		-			-
Loyalty	LOY1	6.4/0.9	.782	.669	.530	.745	.772	.860	6.3/0.9	.847	.720	.668	.835	.852	.895	6.2/0.8	.828	.710	.633	.820	.840	.870
	LOY2	5.3/1.5	.817		.593			.694	5.5/1.3	.882		.730			.801	5.5/1.2	.882		.723			.805
	LOY3	5.7/1.2	.870		.668			.615	5.8/1.1	.895		.754			.710	5.8/1.1	.878		.719			.670
Grocery sector																						
Utilitarian value with parcels	VAL1	5.2/1.1	.553	.500	.344	.552	.565	.573	5.2/1.0	.762	.500	.456	.570	.557	.567	5.3/0.9	.465	.500	.394	.555	.559	.610
	VAL2	4.1/1.2	.600		.344			.445	4.2/1.2	.503		.456			.434	4.3/1.2	.463		.394			.490
Retail brand equity	RBE1	5.5/1.2	.840	.746	.712	.787	.770	.692	5.5/1.1	.886	.740	.751	.818	.850	.755	5.5/1.1	.767	.740	.661	.814	.818	.6775
	RBE2	6.0/1.1	.600		.498			.743	5.9/1.1	.696		.586			.915	5.9/1.1	.686		.592			.808
	RBE3	5.2/1.2	.839		.730			.694	5.2/1.2	.829		.755			.759	5.3/1.2	.862		.761			.739
	RBE4[a]	4.2/1.8	.609		-			-	4.4/1.7	.617		-			-	4.5/1.6	.643		-			-
Loyalty	LOY1	6.5/0.9	.523	.643	.401	.616	.652	.668	6.4/0.8	.441	.616	.362	.646	.693	.747	6.3/0.8	.591	.666	.473	.683	.705	.717
	LOY2	5.4/1.5	.628		.463			.665	5.5/1.4	.650		.509			.697	5.7/1.2	.671		.522			.699
	LOY3	5.6/1.3	.671		.478			.476	5.7/1.4	.792		.556			.433	5.7/1.1	.710		.539			.544

Confirmatory model fits:
Time point one (fashion sector): CFI .969; TLI .949; RMSEA .075; $\chi^2(17) = 40.207$; SCF = 1.10.
Time point two (fashion sector): CFI .974; TLI .958; RMSEA .074; $\chi^2(17) = 39.659$; SCF = 1.12.
Time point three (fashion sector): CFI .965; TLI .943; RMSEA .078; $\chi^2(17) = 42.075$; SCF = 1.15.
Time point one (grocery sector): CFI .951; TLI .919; RMSEA .061; $\chi^2(17) = 32.2875$; SCF = 1.23.
Time point two (grocery sector): CFI .968; TLI .947; RMSEA .062; $\chi^2(17) = 32.733$; SCF = 1.25.
Time point three (grocery sector): CFI .982; TLI .971; RMSEA .045; $\chi^2(17) = 25.390$; SCF = 1.22.
Note: VAL = utilitarian value; RBE = Retail brand equity; LOY = loyalty; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.
[a] Item deleted due to low Item-to-Total Correlation.

Table E-10: Reliability and validity of measurements of the utilitarian value models

Source: Own creation.

		Time point 1							Time point 2							Time point 3						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Fashion sector																						
Hedonic value with parcels	VAL1	5.3/0.9	.695	.500	.429	.689	.616	.734	5.4/1.0	.603	.500	.426	.682	.633	.747	5.4/1.1	.448	.500	.474	.643	.651	.730
	VAL2	4.4/1.2	.875		.429			.448	5.5/0.9	.921		.426			.436	5.4/1.1	.751		.474			.513
Retail brand equity	RBE1	5.7/1.2	.920	.772	.800	.874	.882	.886	5.7/1.1	.894	.804	.769	.859	.863	.869	5.6/1.1	.858	.792	.691	.816	.821	.813
	RBE2	5.9/1.1	.771		.668			.924	5.9/1.0	.798		.675			.868	5.8/1.0	.750		.606			.841
	RBE3	5.7/1.2	.918		.814			.687	5.7/1.1	.892		.762			.717	5.6/1.1	.882		.711			.657
	RBE4[a]	4.7/1.7	.732		-			-	5.0/1.5	.765		-			-	4.9/1.5	.788		-			-
Loyalty	LOY1	6.4/0.9	.782	.669	.530	.745	.778	.863	6.3/0.9	.847	.720	.668	.835	.826	.902	6.2/0.8	.828	.710	.633	.820	.839	.870
	LOY2	5.3/1.5	.817		.593			.692	5.5/1.3	.882		.730			.793	5.5/1.2	.882		.723			.802
	LOY3	5.7/1.2	.870		.668			.611	5.8/1.1	.895		.754			.709	5.8/1.1	.878		.719			.675
Grocery sector																						
Hedonic value with parcels	VAL1	5.2/1.1	.603	.500	.454	.619	.620	.754	5.2/1.0	.587	.500	.472	.634	.638	.813	5.3/0.9	.593	.500	.466	.630	.634	.801
	VAL2	4.1/1.2	.753		.454			.602	4.2/1.2	.836		.472			.581	4.3/1.2	.796		.466			.582
Retail brand equity	RBE1	5.5/1.2	.840	.746	.712	.787	.751	.717	5.5/1.1	.886	.740	.751	.818	.851	.765	5.5/1.1	.767	.740	.661	.814	.818	.757
	RBE2	6.0/1.1	.600		.498			.720	5.9/1.1	.696		.586			.908	5.9/1.1	.686		.592			.821
	RBE3	5.2/1.2	.839		.730			.687	5.2/1.2	.829		.755			.756	5.3/1.2	.862		.761			.747
	RBE4[a]	4.2/1.8	.609		-			-	4.4/1.7	.617		-			-	4.5/1.6	.643		-			-
Loyalty	LOY1	6.5/0.9	.523	.643	.401	.616	.651	.754	6.4/0.8	.441	.616	.362	.646	.694	.778	6.3/0.8	.591	.666	.473	.683	.701	.779
	LOY2	5.4/1.5	.628		.463			.596	5.5/1.4	.650		.509			.686	5.7/1.2	.671		.522			.655
	LOY3	5.6/1.3	.671		.478			.447	5.7/1.4	.792		.556			.395	5.7/1.1	.710		.539			.513

Confirmatory model fits:
Time point one (fashion sector): CFI .967; TLI .945; RMSEA .079; $\chi^2(17) = 42.264$; SCF = 1.00.
Time point two (fashion sector): CFI .982; TLI .971; RMSEA .060; $\chi^2(17) = 31.553$; SCF = 1.09.
Time point three (fashion sector): CFI .965; TLI .942; RMSEA .075; $\chi^2(17) = 40.097$; SCF = 1.12.
Time point one (grocery sector): CFI .931; TLI .886; RMSEA .077; $\chi^2(17) = 41.049$; SCF = 1.21.
Time point two (grocery sector): CFI .911; TLI .853; RMSEA .111; $\chi^2(17) = 67.095$; SCF = 1.15.
Time point three (grocery sector): CFI .924; TLI .875; RMSEA .098; $\chi^2(17) = 56.487$; SCF = 1.21.
Note: VAL = Hedonic value; RBE = Retail brand equity; LOY = Loyalty; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM.

Table E-11: Reliability and validity of measurements of the hedonic value models

Source: Own creation.

	Time Point 1			Time Point 2			Time Point 3		
	1	2	3	1	2	3	1	2	3
Fashion sector									
1 Perceived value	**.538**			**.557**			**.551**		
2 Retail brand equity	*.421*	**.693**		*.307*	**.715**		*.460*	**.679**	
3 Loyalty	*.244*	*.466*	**.527**	*.242*	*.198*	**.674**	*.365*	*.387*	**.664**
Grocery sector									
1 Perceived value	**.502**			**.567**			**.599**		
2 Retail brand equity	*.460*	**.697**		*.307*	**.683**		*.656*[a]	**.636**	
3 Loyalty	*.250*	*.221*	**.475**	*.242*	*.198*	**.525**	*.498*	*.288*	**.596**

Confirmatory model fits:
Time point one (fashion sector): CFI .969; TLI .949; RMSEA .075; $\chi^2(17) = 40.207$; SCF = 1.10.
Time point two (fashion sector): CFI .974; TLI .958; RMSEA .074; $\chi^2(17) = 39.659$; SCF = 1.12.
Time point three (fashion sector): CFI .965; TLI .943; RMSEA .078; $\chi^2(17) = 42.075$; SCF = 1.15.
Time point one (grocery sector): CFI .951; TLI .919; RMSEA .061; $\chi^2(17) = 32.2875$; SCF = 1.23.
Time point two (grocery sector): CFI .968; TLI .947; RMSEA .062; $\chi^2(17) = 32.733$; SCF = 1.25.
Time point three (grocery sector): CFI .982; TLI .971; RMSEA .045; $\chi^2(17) = 25.390$; SCF = 1.22.
*Note: V*alues in italics represent squared correlations between constructs; values in bold represent the AVE of the construct; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table E-12: Discriminant validity of the utilitarian value models

Source: Own creation.

	Time Point 1			Time Point 2			Time Point 3		
	1	2	3	1	2	3	1	2	3
Fashion sector									
1 Perceived value	**.503**			**.516**			**.494**		
2 Retail brand equity	*.372*	**.694**		*.534*[a]	**.704**		*.457*	**.673**	
3 Loyalty	*.329*	*.466*	**.526**	*.458*	*.426*	**.629**	*.347*	*.386*	**.664**
Grocery sector									
1 Perceived value	**.574**			**.566**			**.566**		
2 Retail brand equity	*.350*	**.505**		*.464*	**.686**		*.464*	**.686**	
3 Loyalty	*.393*	*.072*	**.411**	*.434*	*.300*	**.508**	*.434*	*.300*	**.508**

Confirmatory model fits:
Time point one (fashion sector): CFI .967; TLI .945; RMSEA .079; $\chi^2(17) = 42.264$; SCF = 1.00.
Time point two (fashion sector): CFI .982; TLI .971; RMSEA .060; $\chi^2(17) = 31.553$; SCF = 1.09.
Time point three (fashion sector): CFI .965; TLI .942; RMSEA .075; $\chi^2(17) = 40.097$; SCF = 1.12.
Time point one (grocery sector): CFI .931; TLI .886; RMSEA .077; $\chi^2(17) = 41.049$; SCF = 1.21.
Time point two (grocery sector): CFI .911; TLI .853; RMSEA .111; $\chi^2(17) = 67.095$; SCF = 1.15.
Time point three (grocery sector): CFI .924; TLI .875; RMSEA .098; $\chi^2(17) = 56.487$; SCF = 1.21.
*Note: V*alues in italics represent squared correlations between constructs; values in bold represent the AVE of the construct; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table E-13: Discriminant validity of the hedonic value models

Source: Own creation.

2.3. Measurement Invariance of Utilitarian and Hedonic Value Models

We applied confirmatory factor analysis to test measurement invariance. This approach requires a sequence of successive tests in which each step is mandatory for the subsequent step. First, configural invariance is assured. Within this step the model fit of the baseline model is assessed. In the baseline model the factor loadings and intercepts are freely estimated for each time point. Second, the factor-loading invariant model is estimated in which the factor loadings of each single item are constrained to be equally estimated across the time points. The goodness-of-fit statistics of the second model are then compared to the corresponding values of the first model. Measurement invariance is determined by the use of several differences-in-fit indices such as chi-square difference tests and ΔCFI. In the third step we then fixed the intercepts of each item across all time points. When a good comparison between the factor loading invariant model and the third model is obtained, measurement invariance is confirmed. As full measurement invariance was not accomplished for both samples (fashion and grocery), partial measurement invariance was ascertained (Byrne et al. 1989) by freeing several intercept and factor-loading values (see footnotes in tables Table E-14 and Table E-15). The results indicate a good fit of all models and provide support for the proposition that partial measurement invariance holds for all constructs of both samples. The derived partial invariance models of both sectors are used in the subsequent analyses of hypothesis testing.

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (Δ CFI)	TLI (Δ TLI)	RMSEA (Δ RMSEA)	SCF for MLM
Utilitarian Value Model						
Model 1:	321.143/201	-	.973	.963	.050	1.15
Configural invariance	(.000)					
Model 2:	349.613/211	28.830	.969	.960	.052	1.15
Full factor loading invariance	(.000)	(.001)	(.004)	(.003)	(.002)	
Model 3:	334.531/209	13.434	.972	.963	.050	1.15
Partial factor invariance[a]	(.000)	(.098)	(.001)	(-)	(-)	
Model 4:	366.345/219	47.010	.967	.959	.053	1.14
Partial factor loading and full intercept invariance	(.000)	(.000)	(.006)	(.004)	(.003)	
Model 5:	345.659/217	24.405	.971	.964	.050	1.14
Partial factor loading and partial intercept invariance[b]	(.000)	(.081)	(.002)	(.001)	(-)	
Hedonic Value Model						
Model 1:	323.183/201	-	.972	.961	.050	1.12
Configural invariance	(.000)					
Model 2:	350.225/211	27.990	.968	.958	.052	1.11
Full factor loading invariance	(.000)	(.002)	(.004)	(.003)	(.002)	
Model 3:	327.563/209	3.249	.972	.964	.049	1.11
Partial factor invariance[c]	(.000)	(.918)	(-)	(.003)	(.001)	
Model 4:	380.075/219	59.244	.963	.953	.055	1.11
Partial factor loading and full intercept invariance	(.000)	(.000)	(.009)	(.008)	(.005)	
Model 5:	342.718/216	19.002	.971	.962	.049	1.11
Partial factor loading and partial intercept invariance[d]	(.000)	(.214)	(.001)	(.001)	(.001)	

[a] Factor Loadings are freed for the following items: LOY3 time points one, two and three.
[b] Intercepts are freed for the following items: LOY1 time point three, LOY2 time point one.
[c] Factor Loadings are freed for the following items: LOY3 time points one, two and three.
[d] Intercepts are freed for the following items: VAL4 time point three, LOY1 time point three, LOY2 time point one.

Table E-14: Measurement invariance tests across time points (fashion sector models)

Source: Own creation.

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (Δ CFI)	TLI (Δ TLI)	RMSEA (Δ RMSEA)	SCF for MLM
Utilitarian Value Model						
Model 1:	373.074/201	-	.953	.935	.062	1.14
Configural invariance	(.000)					
Model 2:	387.526/211	13.914	.952	.937	.061	1.13
Full factor loading invariance	(.000)	(.117)	(.001)	(.002)	(.001)	
Model 3:	427.384/221	56.436	.944	.929	.064	1.12
Full factor loading and full intercept invariance	(.000)	(.000)	(.009)	(.006)	(.002)	
Model 4:	.97.989/218	24.074	.951	.937	.060	1.12
Full factor loading and partial intercept invariance[a]	(.000)	(.117)	(.002)	(.002)	(.002)	
Hedonic Value Model						
Model 1:	362.833/201	-	.956	.939	.060	1.12
Configural invariance	(.000)					
Model 2:	376.466/211	13.286	.955	.940	.059	1.11
Full factor loading invariance	(.000)	(.208)	(.001)	(.001)	(.001)	
Model 3:	421.590/221	61.504	.945	.931	.063	1.11
Full factor loading and full intercept invariance	(.000)	(.000)	(.011)	(.008)	(.003)	
Model 4:	385.401/217	21.705	.954	.941	.059	1.11
Full factor loading and partial intercept invariance[b]	(.000)	(.153)	(.002)	(.002)	(.001)	

[a] Intercepts are freed for the following items: LOY1 time point three, LOY1 time point two, RBE2 time point one.
[b] Intercepts are freed for the following items: LOY1 time point three and one, RBE2 time point one.

Table E-15: Measurement invariance tests across time points (grocery sector models)

Source: Own creation.

2.4. Endogeneity Test

To test for endogeneity we used shopping motives as instrumental variable (IV) for perceived value (Arnold and Reynolds 2012) and marketing mix as IV for Retail brand equity (Pan and Zinkhan 2006). Both constructs proved to be reliable and valid (see Table E-16) and thus, to keep the complexity of our models at a nearly equal level, we chose to parcel both IVs. In a first step we checked whether marketing mix and shopping motives are strong predictors of retail brand equity and perceived value using F-tests (see Table E-17). The F-tests are used to prove the hypotheses that the IVs have no joint influence on the instrumented variables (perceived value and Retail brand equity). The calculated F-values were above the recommended threshold of 10 in all models (Stock and Watson 2011). Thus, both IVs (marketing mix and shopping motives) can be interpreted as strong predictors (Antonakis et al. 2014). Additionally to the efficient (proposed) model (Antonakis et al. 2010), we estimated consistent models which included the two IVs marketing mix and shopping motives (see Table E-18 and Table E-19) and tested if there was a change in path estimates using the Hausman test (1978).

Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	AVE
Shopping motives								
Fashion sector								
SM1[a]	4.4/1.7	.304		-			-	
SM2[a]	5.3/1.4	.076		-			-	
SM3	4.6/1.8	.682	.737	.628	.812	.839	.657	.520
SM4	5.1/1.3	.501		.455			.560	
SM5	4.4/2.0	.915		.741			.893	
SM6	4.9/1.7	.812		.728			.851	
Grocery sector								
SM1[a]	4.5/1.5	.195		-			-	
SM2[a]	5.6/1.2	.147		-			-	
SM3	5.0/1.6	.509	.696	.506	.655	.687	.589	.522
SM4	5.0/1.4	.443		.569			.502	
SM5	3.3/1.9	.689		.475			.638	
SM6	4.5/1.8	.651		.507			.623	
Marketing mix								
Fashion sector								
MM1	5.4/1.4	.656		.550			.655	
MM2	5.6/1.2	.830	.746	.659	.752	.800	.837	.560
MM3	5.1/1.3	.658		.549			.661	
MM4	5.1/1.5	.517		.554			.504	
Grocery sector								
MM1	4.9/1.4	.514		.513			.602	
MM2	5.3/1.2	.761	.669	.547	.676	.703	.501	.509
MM3	4.9/1.4	.681		.521			.531	
MM4	5.9/1.3	.507		.492			.544	

Confirmatory model fits:
Fashion sector SM: CFI .984; TLI .953; RMSEA .099; $\chi^2(2) = 6.691$, SCF = 1.42.
Grocery sector SM: CFI .992; TLI .977; RMSEA .039; $\chi^2(2) = 2.726$, SCF = 1.23.
Fashion sector MM: CFI 1.000; TLI 1.004; RMSEA .015; $\chi^2(2) = 1.702$, SCF for MLM = 1.34.
Grocery sector MM: CFI .986; TLI .957; RMSEA .055; $\chi^2(2) = 3.446$, SCF for MLM = 1.29.
Note: SM = Shopping motives; MM = marketing mix; MV/Std. = Mean Values and Standard Deviations; FL = Factor Loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥ .5); CR = Composite Reliability (≥ .6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥ .5); AVE = Average Variance Extracted (≥ .5); SCF = Scaling correction factor for MLM.
[a] Item deleted because of low factor loadings and low Item-to-Total-Correlations.

Table E-16: Reliability and validity of instrumental variables

Source: Own creation.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
MM → RBE	421.481	197.044	74.782	308.870	55.537	52.269
SM → VAL	132.787	13.306	273.102	83.473	555.540	377.903

Note: MM = Marketing mix; SM = Shopping motives; RBE = Retail brand equity; VAL = Perceived value; *F*-value > 10 indicates strong predictor.

Table E-17: F-test of strong instruments

Source: Own creation.

	Fashion sector (Model 1)				Grocery sector (Model 2)			
	1a. Efficient model		1b. Consistent model		2a. Efficient model		2b. Consistent model	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
SM → VAL (1)	-	-	.556	***	-	-	.089	**
MM → RBE (1)	-	-	.551	***	-	-	.381	***
VAL (1) → RBE (2)	.137	***	.157	***	.104	***	.197	***
RBE (1) → VAL (2)	.329	***	.356	***	.097	***	.091	***
VAL (1) → LOY (2)	.131	***	.139	***	.085	***	.119	***
RBE (1) → LOY (2)	.181	***	.228	***	.125	***	.196	***
VAL (1) → VAL (2)	.536	***	.613	***	.502	***	.529	***
RBE (1) → RBE (2)	.744	***	.817	***	.771	***	.593	***
LOY (1) → LOY (2)	.693	***	.740	***	.511	***	.507	***
VAL (2) → RBE (3)	.194	***	.218	***	.130	***	.276	***
RBE (2) → VAL (3)	.251	***	.254	***	.136	***	.111	***
VAL (2) → LOY (3)	.124	***	.139	***	.094	***	.126	***
RBE (2) → LOY (3)	.113	***	.126	***	.121	***	.163	***
VAL (2) → VAL (3)	.617	***	.664	***	.798	***	.818	***
RBE (2) → RBE (3)	.700	***	.748	***	.857	***	.651	***
LOY (2) → LOY (3)	.399	***	.392	***	.601	***	.547	***
R^2 LOY	.294	***	.270	***	.515	***	.444	***
I. Total effect of RBE (1) on LOY (3)	.197	***	.233	***	.178	***	.215	***
II. Total effect of VAL (1) on LOY (3)	.134	***	.145	***	.111	***	.164	***
Covariates								
GEN (1) → LOY (1)	.053	**	.055	**	-.021	**	-.006	ns
GEN (2) → LOY (2)	.044	**	.043	**	-.027	**	-.001	ns
GEN (3) → LOY (3)	.063	**	.064	**	-.029	**	-.001	ns
AGE (1) → LOY (1)	.000	ns	.000	ns	.007	ns	.005	ns
AGE (2) → LOY (2)	.000	ns	.000	ns	.009	ns	.006	ns
AGE (3) → LOY (3)	.000	ns	.000	ns	.010	ns	.006	ns
FAM (1) → LOY (1)	.244	***	.256	***	.031	ns	.013	ns
FAM (2) → LOY (2)	.206	***	.207	***	.038	ns	.014	ns
FAM (3) → LOY (3)	.276	***	.286	***	.043	ns	.016	ns

Structural model fits:
Model 1a: CFI .916; TLI .904; RMSEA .079; $\chi^2(644) = 1495.847$; SCF = 1.10.
Model 1b: CFI .876; TLI .852; RMSEA .090; $\chi^2(723) = 1846.704$; SCF = 1.06.
Model 2a: CFI .923; TLI .911; RMSEA .067; $\chi^2(644) = 1328.982$; SCF = 1.16.
Model 2b: CFI .872; TLI .855; RMSEA .081; $\chi^2(723) = 1849.311$; SCF = 1.08.
Note: VAL = Perceived value; RBE = Retail brand equity; LOY = Loyalty; (1, 2, 3) = time points; SCF = Scaling correction factor for MLM; Standardized coefficients are shown. N = 241, 240 per wave (fashion, grocery).
*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; ns = not significant.

Table E-18: Results of the efficient and consistent models (Models 1 and 2)

Source: Own creation.

	Fashion sector								Grocery sector							
	Utilitarian value (Model 3)				Hedonic value (Model 4)				Utilitarian value (Model 5)				Hedonic value (Model 6)			
	3a. Efficient model		3b. Consistent model		4a. Efficient model		4b. Consistent model		5a. Efficient model		5b. Consistent model		6a. Efficient model		6b. Consistent model	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
SM → VAL (1)	-	-	.438	***	-	-	.607	***	-	-	.197	***	-	-	.232	***
MM → RBE (1)	-	-	.523	***	-	-	.513	***	-	-	.139	***	-	-	.157	***
VAL (1) → RBE (2)	.117	***	.118	***	.100	**	.139	***	.257	***	.262	***	.151	**	.153	***
RBE (1) → VAL (2)	.316	***	.349	***	.385	***	.365	***	.355	***	.391	***	.101	*	.141	***
VAL (1) → LOY (2)	.106	***	.091	***	.149	***	.177	***	.093	*	.124	***	.057	†(p=.069)	.082	***
RBE (1) → LOY (2)	.122	***	.156	***	.115	**	.161	***	.091	***	.090	***	.057	***	.056	***
VAL (1) → VAL (2)	.500	***	.577	***	.490	***	.505	***	.690	***	.704	***	.881	***	.860	***
RBE (1) → RBE (2)	.748	***	.812	***	.737	***	.741	***	.812	***	.808	***	.809	***	.818	***
LOY (1) → LOY (2)	.636	***	.681	***	.624	***	.656	***	.673	***	.659	***	.570	***	.578	***
VAL (2) → RBE (3)	.159	***	.168	***	.144	**	.179	***	.180	***	.185	***	.112	**	.112	***
RBE (2) → VAL (3)	.259	***	.257	***	.309	***	.286	***	.333	***	.391	***	.102	*	.142	***
VAL (2) → LOY (3)	.108	***	.089	***	.157	***	.198	***	.064	*	.078	***	.057	†(p=.071)	.074	***
RBE (2) → LOY (3)	.090	***	.102	***	.085	**	.115	***	.080	***	.069	***	.060	***	.052	***
VAL (2) → VAL (3)	.566	***	.641	***	.565	***	.721	***	.502	***	.508	***	.853	***	.836	***
RBE (2) → RBE (3)	.736	***	.766	***	.737	***	.749	***	.732	***	.651	***	.629	***	.617	***
LOY (2) → LOY (3)	.377	***	.506	***	.491	***	.475	***	.697	***	.626	***	.737	***	.669	***
R^2 LOY	.377	***	.353	***	.400	***	.379	***	.594	***	.505	***	.623	***	.534	***
I. Total effect of RBE (1) on LOY (3)	.163	***	.193	***	.180	***	.234	***	.151	***	.143	***	.096	***	.090	***
II. Total effect of VAL (1) on LOY (3)	.119	***	.109	***	.158	***	.199	***	.130	**	.151	***	.102	*	.126	***
Covariates																
GEN (1) → LOY (1)	.034	***	.054	***	.048	**	.051	**	.012	ns	.006	ns	.013	ns	.008	ns
GEN (2) → LOY (2)	.034	***	.052	***	.048	**	.049	**	.001	ns	.001	ns	.002	ns	.001	ns
GEN (3) → LOY (3)	.042	***	.067	***	.061	**	.065	**	.002	ns	.001	ns	.002	ns	.001	ns
AGE (1) → LOY (1)	.010	ns	.022	ns	.001	ns	.001	ns	.000	ns	.009	*	.000	ns	.010	*
AGE (2) → LOY (2)	.010	ns	.021	ns	.001	ns	.001	ns	.000	ns	.010	*	.000	ns	.012	*
AGE (3) → LOY (3)	.012	ns	.027	ns	.002	ns	.002	ns	.000	ns	.012	*	.000	ns	.013	*
FAM (1) → LOY (1)	.202	***	.226	***	.224	***	.227	***	.056	*	.043	*	.052	*	.041	*
FAM (2) → LOY (2)	.208	***	.222	***	.228	***	.221	***	.058	*	.046	*	.063	*	.047	*
FAM (3) → LOY (3)	.244	***	.267	***	.271	***	.272	***	.063	*	.055	*	.063	*	.052	*

Structural model fits:
Model 3a: CFI .912; TLI .910; RMSEA .079; $\chi^2(439) = 1089.749$; SCF = 1.11; Model 3b: CFI .858; TLI .838; RMSEA .091; $\chi^2(504) = 1217.906$; SCF = 1.17.
Model 4a: CFI .927; TLI .915; RMSEA .072; $\chi^2(437) = 927.637$; SCF = 1.10; Model 4b: CFI .886; TLI .869; RMSEA .089; $\chi^2(502) = 1241.800$; SCF = 1.05.
Model 5a: CFI .954; TLI .944; RMSEA .060; $\chi^2(433) = 793.459$; SCF = 1.05. Model 5b: CFI .855; TLI .827; RMSEA .104; $\chi^2(498) = 1849.822$; SCF = 1.11.
Model 6a: CFI .947; TLI .935; RMSEA .065; $\chi^2(432) = 850.428$; SCF = 1.06. Model 6b: CFI .850; TLI .820; RMSEA .107; $\chi^2(497) = 1913.598$; SCF = 1.08.
Note: VAL = Perceived value; RBE = Retail brand equity; LOY = Loyalty; (1, 2, 3) = time points; SCF = Scaling correction factor for MLM; Standardized coefficients are shown. N = 241, 240 per wave (fashion, grocery); *** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; ns = not significant.

Table E-19: Results of the efficient and consistent models (Models 3 to 6)

Source: Own creation.

2.5. Common Method Variance

We addressed CMV a priori by using an appropriate questionnaire design and by applying a longitudinal survey design (Chang et al. 2010; Weiber and Mühlhaus 2014, p. 360). A posteriori we accounted for CMV first by calculating a single-factor test using confirmatory factor analysis for both retail sectors and for all time points) and second by applying the correlational marker technique. The results of the single-factor test showed that the models with all items loading on a single factor had a significantly worse fit than our proposed models did in both sectors and in all time points (see Table E-20).

	CFI	TLI	RMSEA	SCF	χ^2(df)	*p*-value of difference
General models						
Fashion sector						
Time point one: CFA	.945	.923	.084	1.05	86.868 (32)	***
Time point one: SFT	.739	.664	.176	1.05	296.833 (35)	
Time point two: CFA	.938	.913	.096	1.07	102.687 (32)	***
Time point two: SFT	.759	.690	.181	1.06	310.037 (35)	
Time point three: CFA	.937	.911	.089	1.11	93.052 (35)	***
Time point three: SFT	.723	.644	.178	.113	302.170 (35)	
Grocery sector						
Time point one: CFA	.891	.847	.086	1.19	89.384 (32)	***
Time point one: SFT	.695	.607	.142	1.18	196.049 (35)	
Time point two: CFA	.885	.839	.106	1.22	118.304 (32)	***
Time point two: SFT	.774	.710	.142	1.22	204.949 (35)	
Time point three: CFA	.916	.882	.089	1.19	93.219 (32)	***
Time point three: SFT	.803	.747	.131	1.18	178.713 (35)	
Utilitarian value models						
Fashion sector						
Time point one: CFA	.969	.949	.075	1.10	40.207 (17)	***
Time point one: SFT	.841	.777	.157	1.09	139.162 (20)	
Time point two: CFA	.974	.958	.074	1.12	39.659 (17)	***
Time point two: SFT	.804	.725	.190	1.09	193.483 (20)	
Time point three: CFA	.965	.943	.078	1.15	42.075 (17)	***
Time point three: SFT	.785	.699	.179	1.15	175.170 (20)	
Grocery sector						
Time point one: CFA	.951	.919	.061	1.23	32.288 (17)	***
Time point one: SFT	.647	.505	.151	1.29	129.440 (20)	
Time point two: CFA	.968	.947	.062	1.25	32.733 (17)	***
Time point two: SFT	.841	.778	.127	1.32	97.919 (20)	
Time point three: CFA	.982	.971	.045	1.22	25.390 (17)	***
Time point three: SFT	.840	.776	.125	1.22	95.340 (20)	
Hedonic value models						
Fashion sector						
Time point one: CFA	.967	.945	.079	1.00	42.264 (17)	***
Time point one: SFT	.834	.767	.162	1.00	145.773 (20)	
Time point two: CFA	.982	.971	.060	1.09	31.553 (17)	***
Time point two: SFT	.790	.705	.188	1.07	191.222 (20)	
Time point three: CFA	.965	.942	.075	1.12	40.097 (17)	***
Time point three: SFT	.774	.684	.175	1.15	168.348 (20)	
Grocery sector						
Time point one: CFA	.931	.886	.077	1.21	41.049 (17)	***
Time point one: SFT	.675	.545	.154	1.21	133.341 (20)	
Time point two: CFA	.911	.853	.111	1.15	67.095 (17)	***
Time point two: SFT	.780	.692	.160	1.19	143.595 (20)	
Time point three: CFA	.924	.875	.098	1.21	56.487 (17)	***
Time point three: SFT	.780	.692	.154	1.19	134.301 (20)	

Note: CFA = Model fit of the confirmatory factor analysis; SFT = Model fit of the single factor test; SCF = Scaling correction factor for MLM; difference testing was conducting using χ^2-difference tests; *** $p < .001$.

Table E-20: Single-factor test

Source: Own creation.

Table E-21 to Table E-26 show the results for the correlational marker technique (Lindell and Whitney 2001) following the approach of Williams et al. (2010). We choose to use job as a marker variable as it is theoretically unrelated to our substantive constructs. The correlational marker technique consists of three successive phases. The results of the model comparisons (phase I) point out that the correlations between the latent constructs are not biased through the presence of the marker variable (Method-U vs. -R) and are all in support of the Method-C Model (see chi-square differences of model comparison tests in Table E-21 and Table E-24). The results of the following reliability decomposition (phase II) indicate that the measurement of the substantive latent variables yielded sufficient overall reliability values (see Table E-22 and Table E-25). The amount of method variance, associated with the measurement of the substantive latent constructs, ranges between 1.74 and 12.4 percent. Based on these observations and as the impact of method variance in the study of Williams et al. (2010) was above 12.5 percent, we conclude that the threat of CMV is decreased. Finally, the results of the sensitivity analysis (phase III) show that marker-based method variance only slightly effects construct correlations and that the factor correlations remain significant throughout the sensitivity analysis (see Table E-23 and Table E-26). Thus, based on these findings, we conclude that the threat of CMV within our data is minimal.

Model	Time point 1 χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	Time point 2 χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	Time point 3 χ^2	df	CFI	TLI	RMSEA	SRMR	SCF
Fashion																					
CFA	55.714	25	.961	.944	.071	.041	1.03	47.883	25	.975	.963	.062	.039	1.09	52.954	25	.962	.946	.068	.047	1.10
Baseline	56.616	26	.961	.947	.070	.041	1.02	53.923	26	.969	.957	.067	.046	1.06	50.348	26	.967	.954	.062	.050	1.08
Method-C	56.604	25	.960	.943	.072	.042	1.02	51.663	25	.971	.958	.067	.037	1.07	48.853	25	.968	.954	.063	.044	1.09
Method-U	42.832	18	.969	.937	.076	.034	1.04	40.560	18	.975	.950	.072	.030	1.09	42.624	18	.967	.933	.075	.040	1.13
Method-R	42.645	21	.973	.953	.065	.034	1.04	41.187	21	.978	.962	.063	.030	1.07	45.063	21	.973	.954	.069	.038	1.07
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*																		
Baseline with Method-C	.012	1	ns					2.260	1	ns					1.495	1	ns				
Method-C with Method-U	13.772	7	***					11.103	7	***					6.229	7	***				
Method-U with Method-R	.187	3	ns					.627	3	ns					2.439	3	ns				
Grocery																					
CFA	42.621	25	.946	.922	.054	.057	1.17	43.207	25	.964	.949	.055	.041	1.18	31.075	25	.987	.982	.032	.038	1.17
Baseline	43.361	26	.946	.926	.053	.057	1.15	44.026	26	.965	.951	.054	.041	1.16	31.713	26	.988	.983	.030	.038	1.14
Method-C	41.545	25	.949	.926	.053	.055	1.16	43.655	25	.964	.947	.056	.041	1.17	31.225	25	.987	.981	.032	.037	1.15
Method-U	35.302	18	.947	.893	.063	.050	1.18	32.725	18	.971	.942	.059	.034	1.23	26.194	18	.983	.966	.044	.032	1.17
Method-R	37.229	21	.950	.914	.057	.052	1.21	35.288	21	.972	.952	.053	.037	1.25	25.712	21	.990	.983	.031	.032	1.20
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*																		
Baseline with Method-C	1.816	1	ns					.371	1	ns					.488	1	ns				
Method-C with Method-U	6.243	7	***					10.930	7	***					5.031	7	***				
Method-U with Method-R	1.927	3	ns					2.563	3	ns					.482	3	ns				

Table E-21: Results of the model comparisons (phase I) for the utilitarian value models

Source: Own creation.

	Time point 1			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.770	.718	.052	6.75
Retail brand equity	.875	.822	.054	6.17
Perceived utilitarian value	.808	.716	.092	11.39
Grocery				
Loyalty	.633	.596	.036	5.69
Retail brand equity	.755	.702	.043	5.70
Perceived utilitarian value	.792	.702	.089	11.24
	Time point 2			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.846	.791	.053	6.26
Retail brand equity	.859	.797	.061	7.10
Perceived utilitarian value	.769	.688	.081	10.53
Grocery				
Loyalty	.664	.606	.058	8.73
Retail brand equity	.852	.801	.050	5.87
Perceived utilitarian value	.780	.724	.056	7.18
	Time point 3			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.816	.772	.043	5.27
Retail brand equity	.828	.754	.075	9.06
Perceived utilitarian value	.832	.742	.089	10.70
Grocery				
Loyalty	.691	.636	.055	7.96
Retail brand equity	.811	.760	.051	6.29
Perceived utilitarian value	.647	.590	.057	8.81

Table E-22: Results of the reliability decomposition (phase II) for the utilitarian value models

Source: Own creation.

	Time point 1				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.683	.683	.677	.670	.674
VAL with LOY	.488	.494	.488	.471	.490
RBE with VAL	.643	.649	.645	.636	.654
JOB with LOY	-.105	.000	.000	.000	.000
JOB with RBE	-.129	.000	.000	.000	.000
JOB with VAL	.019	.000	.000	.000	.000
Grocery					
RBE with LOY	.240	.239	.237	.195	.201
VAL with LOY	.686	.690	.694	.813	.847
RBE with VAL	.588	.589	.600	.648	.685
JOB with LOY	.209	.000	.000	.000	.000
JOB with RBE	.015	.000	.000	.000	.000
JOB with VAL	.243	.000	.000	.000	.000
	Time point 2				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.643	.645	.646	.628	.621
VAL with LOY	.792	.797	.779	.737	.723
RBE with VAL	.892	.899	.901	.882	.873
JOB with LOY	.023	.000	.000	.000	.000
JOB with RBE	-.211	.000	.000	.000	.000
JOB with VAL	-.037	.000	.000	.000	.000

Table to be continued

Table E-23 continued

Grocery					
RBE with LOY	.544	.543	.551	.575	.579
VAL with LOY	.769	.775	.731	.695	.694
RBE with VAL	.763	.766	.737	.741	.753
JOB with LOY	.119	.000	.000	.000	.000
JOB with RBE	-.034	.000	.000	.000	.000
JOB with VAL	.122	.000	.000	.000	.000
		Time point 3			
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.615	.622	.629	.643	.648
VAL with LOY	.603	.604	.614	.635	.640
RBE with VAL	.678	.678	.675	.677	.676
JOB with LOY	.080	.000	.000	.000	.000
JOB with RBE	-.146	.000	.000	.000	.000
JOB with VAL	-.102	.000	.000	.000	.000
Grocery					
RBE with LOY	.532	.532	.545	.590	.606
VAL with LOY	.629	.629	.635	.675	.690
RBE with VAL	.678	.679	.683	.679	.677
JOB with LOY	-.063	.000	.000	.000	.000
JOB with RBE	-.143	.000	.000	.000	.000
JOB with VAL	-.096	.000	.000	.000	.000

Note: LOY = Loyalty; RBE = Retail brand equity; VAL = Perceived hedonic value; JOB = Job.

Table E-23: Results of the sensitivity analyses (phase III) for the utilitarian value models

Source: Own creation.

	Time point 1							Time point 2							Time point 3						
Model	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF
Fashion																					
CFA	71.051	25	.943	.918	.087	.050	.95	53.816	25	.966	.951	.069	.047	1.05	53.626	25	.958	.940	.069	.044	1.08
Baseline	71.991	26	.943	.921	.086	.050	.93	57.696	26	.963	.948	.071	.053	1.03	49.461	26	.965	.952	.061	.046	1.06
ethod-C	72.008	25	.942	.916	.088	.048	.93	54.259	25	.966	.951	.070	.044	1.03	47.420	25	.967	.952	.061	.039	1.06
Method-U	47.104	18	.964	.928	.082	.034	.93	34.366	18	.981	.962	.061	.029	1.06	40.562	18	.967	.933	.072	.035	1.10
Method-R	46.455	21	.969	.946	.071	.036	.95	34.769	21	.984	.972	.052	.031	1.05	39.859	21	.972	.952	.061	.035	1.12
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*																		
Baseline with Method-C	.017	1	ns					3.710	1	*					2.041	1	ns				
Method-C with Method-U	24.904	7	***					19.893	7	***					6.858	7	***				
Method-U with Method-R	.649	3	ns					.403	3	ns					.703	3	ns				
Grocery																					
CFA	52.105	25	.925	.892	.067	.061	1.14	78.871	25	.908	.867	.095	.061	1.10	65.395	25	.923	.890	.082	.055	1.15
Baseline	53.029	26	.926	.897	.066	.061	1.12	80.241	26	.907	.871	.093	.061	1.09	66.683	26	.923	.893	.081	.055	1.13
Method-C	50.757	25	.929	.898	.066	.058	1.13	79.643	25	.906	.865	.096	.060	1.09	66.228	25	.922	.887	.083	.055	1.13
Method-U	44.821	18	.926	.852	.079	.052	1.13	68.740	18	.913	.826	.109	.055	1.10	57.812	18	.924	.849	.096	.049	1.14
Method-R	45.610	21	.932	.884	.070	.053	1.11	67.979	21	.920	.862	.097	.055	1.11	57.582	21	.931	.881	.085	.049	1.14
Chi-square differences of model comparison tests																					
ΔModels	$\Delta\chi^2$	Δdf	*p*																		
Baseline with Method-C	2.272	1	ns					.598	1	ns					.455	1	ns				
Method-C with Method-U	5.936	7	***					10.903	7	***					8.416	7	***				
Method-U with Method-R	.789	3	ns					.761	3	ns					.230	3	ns				

Table E-24: Results of the model comparisons (phase I) for the hedonic value models

Source: Own creation.

	Time point 1			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.770	.718	.063	8.18
Retail brand equity	.875	.822	.053	6.06
Perceived hedonic value	.721	.637	.085	11.79
Grocery				
Loyalty	.781	.718	.063	8.07
Retail brand equity	.753	.701	.052	6.91
Perceived hedonic value	.762	.694	.069	9.06
	Time point 2			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.846	.790	.055	6.50
Retail brand equity	.860	.800	.062	7.21
Perceived hedonic value	.734	.643	.091	12.40
Grocery				
Loyalty	.788	.715	.073	9.26
Retail brand equity	.852	.803	.048	5.63
Perceived hedonic value	.774	.683	.090	11.63
	Time point 3			
	Reliability baseline model	Decomposed reliability from method-U model		
Latent variable	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.828	.773	.055	6.64
Retail brand equity	.817	.757	.060	7.34
Perceived hedonic value	.687	.606	.081	11.79
Grocery				
Loyalty	.748	.684	.065	8.69
Retail brand equity	.817	.763	.055	6.73
Perceived hedonic value	.767	.680	.087	11.34

Table E-25: Results of the reliability decomposition (phase II) for the hedonic value models

Source: Own creation.

	Time point 1				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.682	.683	.676	.670	.668
VAL with LOY	.537	.574	.544	.524	.520
RBE with VAL	.564	.610	.586	.562	.556
JOB with LOY	-.106	.000	.000	.000	.000
JOB with RBE	-.128	.000	.000	.000	.000
JOB with VAL	-.323	.000	.000	.000	.000
Grocery					
RBE with LOY	.272	.272	.279	.314	.322
VAL with LOY	.625	.626	.610	.569	.556
RBE with VAL	.600	.599	.611	.656	.668
JOB with LOY	.215	.000	.000	.000	.000
JOB with RBE	.017	.000	.000	.000	.000
JOB with VAL	.206	.000	.000	.000	.000
	Time point 2				
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.652	.653	.652	.638	.639
VAL with LOY	.650	.677	.651	.624	.671
RBE with VAL	.698	.731	.690	.678	.691
JOB with LOY	.023	.000	.000	.000	.000
JOB with RBE	-.198	.000	.000	.000	.000
JOB with VAL	-.299	.000	.000	.000	.000

Table to be continued

Table E-26 continued

Grocery					
RBE with LOY	.544	.545	.555	.571	.572
VAL with LOY	.660	.660	.655	.646	.644
RBE with VAL	.684	.681	.706	.779	.795
JOB with LOY	.120	.000	.000	.000	.000
JOB with RBE	-.034	.000	.000	.000	.000
JOB with VAL	.076	.000	.000	.000	.000
		Time point 3			
Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
RBE with LOY	.615	.621	.622	.611	.607
VAL with LOY	.590	.589	.588	.578	.575
RBE with VAL	.676	.676	.657	.642	.637
JOB with LOY	.079	.000	.000	.000	.000
JOB with RBE	-.142	.000	.000	.000	.000
JOB with VAL	-.227	.000	.000	.000	.000
Grocery					
RBE with LOY	.535	.535	.544	.537	.531
VAL with LOY	.655	.653	.654	.623	.610
RBE with VAL	.731	.728	.750	.748	.745
JOB with LOY	.062	.000	.000	.000	.000
JOB with RBE	-.145	.000	.000	.000	.000
JOB with VAL	.018	.000	.000	.000	.000

Note: LOY = Loyalty; RBE = Retail brand equity; VAL = Perceived hedonic value; JOB = Job.

Table E-26: Results of the sensitivity analyses (phase III) for the hedonic value models

Source: Own creation.

3. Study 3: Interdependencies within Multichannel Retail Structures

3.1. Characteristics of the Selected Retailers

Retailer	Δ Sales 2012-2010	Δ Sales 2012-2011	Δ Sales 2011-2010	Retailer	Food Delivery	Home Delivery	In-Store Pick-Up	Δ Sales 2012-2010	Δ Sales 2012-2011	Δ Sales 2011-2010
C&A	1.6%	-1.0%	2.6%	**Edeka**	✓	✓	×	3.0%	-1.7%	4.7%
Esprit	-15.6%	-20.4%	6.1%	**Globus**	✓	✓	×	8.1%	5.2%	2.7%
H&M	4.8%	8.0%	-3.0%	Lidl	×	✓	×	18.3%	13.4%	4.3%
Karstadt	-13.3%	-9.8%	-3.8%	Netto	×	✓	×	8.7%	5.6%	2.9%
Kaufhof	-6.4%	-1.0%	-5.5%	**Real**	✓	✓	✓	-4.5%	-2.8%	-1.8%
Kik	-0.5%	2.2%	-0.3%	**Rewe**	✓	✓	✓	-2.1%	2.4%	-4.4%
s.Oliver	18.6%	3.4%	14.7%	Wasgau	✓*	✓	✓	1.7%	1.0%	0.6%
Zara	21.4%	16.2%	4.5%							

*Note: * Offers only a selection of special foods (e.g., lactose free);* ✓ = offered service; × = unoffered service.
Source: Planet Retail 2013.

Table E-27: Retailer characteristics

Source: Planet Retail (2013), own research.

3.2. Item Parceling of the Offline and Online Brand Belief Dimensions

Rather than using the four latent constructs for the offline brand beliefs and the online brand beliefs that represent the dimensions of offline brand beliefs and online brand beliefs, we used one item for each dimension. This method yielded two latent constructs, representing offline and online brand beliefs with four items each. We performed the item parceling by averaging the item scores (Bandalos 2002) for each dimension. We therefore first tested the original measurement scales for reliability and validity (see Table E-28 and Table E-29). Subsequently we tested the overall measurement model in conjunction with offline and online brand beliefs in a confirmatory factor analysis using the parcels.

		Fashion							Grocery						
Dimension	Item	MV/Std.	FL	KMO	ItTC	α	CR	λ	MV/Std.	FL	KMO	ItTC	α	CR	λ
Offline brand beliefs															
Assortment (ASS)	ASS1	4.1/1.6	.897	.808	.804	.888	.900	.855	4.8/1.2	.881	.869	.825	.903	.909	.867
	ASS2	3.4/1.7	.875		.780			.840	4.7/1.5	.895		.831			.871
	ASS3	3.4/1.8	.748		.736			.801	4.7/1.4	.815		.765			.873
	ASS4	3.9/1.6	.803		.760			.831	4.2/1.2	.770		.734			.752
	ASS5[a]	4.0/1.6	-		-			-	4.7/1.3	.685		.653			-
Price (PRI)	PRI1	4.5/1.4	.832	.764	.723	.850	.863	.894	4.6/1.3	.870	.804	.795	.879	.881	.907
	PRI2	4.5/1.3	.895		.785			.940	4.5/1.2	.902		.821			.921
	PRI3[a]	4.7/1.3	-		-			-	5.1/1.1	.366		-			-
	PRI4	4.1/1.2	.671		.639			.591	4.6/1.3	.679		.622			.637
	PRI5	3.9/1.5	.762		.698			.707	3.9/1.3	.780		.731			.755
Layout (LAY)	LAY1	3.9/1.5	.915	.893	.881	.947	.947	.916	4.4/1.3	.880	.895	.837	.927	.929	.878
	LAY2	4.0/1.5	.879		.850			.874	4.7/1.2	.806		.773			.804
	LAY3	3.8/1.6	.951		.915			.951	4.3/1.4	.922		.874			.924
	LAY4	3.7/1.7	.917		.885			.921	4.2/1.4	.904		.860			.904
	LAY5	4.0/1.8	.773		.756			.776	4.5/1.4	.735		.710			.737
Communication (COM)	COM1	3.8/1.5	.798	.833	.718	.849	.864	.833	4.2/1.4	.646	.821	.584	.833	.788	.662
	COM2[a]	3.8/1.6	-		-			-	4.2/1.6	.781		.700			-
	COM3	3.6/1.4	.851		.770			.805	4.1/1.2	.832		.736			.795
	COM4	2.5/1.5	.724		.658			.725	3.2/1.5	.655		.588			.653
	COM5	3.4/1.4	.760		.675			.785	4.1/1.1	.664		.600			.702
Online brand beliefs															
Aesthetic appeal (AES)	AES1	4.6/1.4	.887	.852	.846	.932	.932	.885	4.2/1.5	.888	.857	.859	.947	.947	.875
	AES2	4.8/1.4	.886		.844			.878	4.4/1.6	.936		.899			.935
	AES3	4.6/1.5	.850		.816			.851	4.0/1.5	.878		.851			.956
	AES4	4.9/1.4	.900		.857			.908	4.5/1.5	.917		.884			.941
Navigation convenience (NAV)	NAV1	5.1/1.1	.893	.854	.862	.947	.948	.893	4.6/1.1	.885	.869	.855	.944	.946	.885
	NAV2	5.1/1.1	.904		.873			.906	4.9/1.3	.898		.866			.898
	NAV3	5.1/1.1	.934		.898			.929	4.9/1.1	.913		.879			.913
	NAV4	5.1/1.2	.888		.858			.895	4.8/1.2	.908		.874			.909
Transaction convenience (TRA)	TRA1	5.2/1.1	.927	.768	.880	.936	.934	.924	4.9/1.1	.935	.761	.879	.931	.930	.933
	TRA2	5.1/1.2	.905		.864			.899	4.8/1.2	.873		.836			.858
	TRA3	5.2/1.1	.903		.862			.915	4.9/1.2	.907		.860			.920
Web site content (WEB)	WEB1	4.9/1.1	.836	.817	.755	.866	.867	.826	4.5/1.4	.897	.845	.841	.913	.915	.875
	WEB2	5.1/1.2	.843		.756			.862	4.5/1.7	.911		.851			.932
	WEB3	4.4/1.2	.686		.638			.681	4.0/1.5	.792		.755			.784
	WEB4	5.0/1.2	.798		.730			.788	4.5/1.4	.807		.766			.807

Confirmatory model fits:
Fashion: CFI .936; TLI .927; RMSEA .063; SRMR .062; $\chi^2(436) = 900.209$; SCF = 1.12; Grocery: CFI .946; TLI .938; RMSEA .058; SRMR .074; $\chi^2(436) = 864.906$; SCF= 1.08.
Note: MV/Std. = Mean values and standard deviations; FL = Factor loadings (exploratory factor analysis); KMO = Kaiser-Meyer-Olkin Criterion (≥.5); ItTC = Item-to-Total Correlation (≥.3); α = Cronbach's alpha (≥.7); CR = Composite Reliability (≥.6); λ = Standardized Factor Loadings (confirmatory factor analysis) (≥.5); SCF = Scaling correction factor for MLM;
[a] Item deleted due to low AVE or low item-to-total-correlation.

Table E-28: Reliability and validity of the offline and online brand belief dimensions

Source: Own creation.

Constructs	ASS	PRI	LAY	COM	AES	NAV	TRA	WEB
Fashion								
ASS	**.553**							
PRI	*.079*	**.505**						
LAY	*.773*[a]	*.005*	**.643**					
COM	*.567*[a]	*.048*	*.540*[a]	**.502**				
AES	*.424*	*.016*	*.350*	*.271*	**.688**			
NAV	*.243*	*.028*	*.218*	*.181*	*.507*	**.820**		
TRA	*.089*	*.011*	*.101*	*.042*	*.229*	*.542*	**.816**	
WEB	*.355*	*.010*	*.245*	*.205*	*.669*	*.524*	*.410*	**.680**
Grocery								
ASS	**.686**							
PRI	*.004*	**.637**						
LAY	*.598*	*.002*	**.794**					
COM	*.209*	*.106*	*.304*	**.829**				
AES	*.370*	*.009*	*.269*	*.163*	**.731**			
NAV	*.277*	*.009*	*.187*	*.127*	*.436*	**.535**		
TRA	*.187*	*.002*	*.173*	*.088*	*.257*	*.753*[a]	**.590**	
WEB	*.511*	*.000*	*.332*	*.136*	*.821*[a]	*.483*	*.327*	**.676**

Confirmatory model fits:
Fashion: CFI .936; TLI .927; RMSEA .063; SRMR .062; $\chi^2(436) = 900.209$; SCF = 1.12.
Grocery: CFI .946; TLI .938; RMSEA .058; SRMR .074; $\chi^2(436) = 864.906$; SCF = 1.08.
Note: ASS = Assortment; PRI = Price; LAY = Layout; COM = Communication; AES = Aesthetic appeal; NAV = Navigation convenience; TRA = Transaction convenience; WEB = Web site content; AVE = Average Variance Extracted (≥.5); SCF = Scaling correction factor for MLM; values in italics in italics represent squared correlations between constructs; values in bold represent the AVE of the construct.
[a] For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked discriminant validity using a Wald test (1943) following the approach of Molenberghs and Verbeke (2007). This procedure yielded satisfactory results because a significant Wald test indicates discriminant validity.

Table E-29: Discriminant validity of the offline and online brand belief dimensions

Source: Own creation.

3.3. Measurement Invariance

We checked for measurement invariance by applying confirmatory factor analysis. This approach consists of a sequence of successive tests in which each step is required for the next step. First, we assessed the model fit of the baseline model—which estimates factor loadings and intercepts freely—to assure configural invariance. Second, we estimated the metric invariant model in which factor loadings are constrained to be equal across groups/time points. The goodness-of-fit statistics are then compared to those of the baseline model. To determine measurement invariance, we applied several differences-in-fit indices (e.g., chi square difference tests and ΔCFI). In the third step we estimated the scalar-invariant model in which additionally intercepts are constrained to be equal across groups/time points. Because full measurement invariance could not be ascertained between the groups/time points, partial invariance was established (Byrne et al. 1989) by freeing several factor and intercepts loadings (see footnotes in Table E-30 and Table E-31). The results indicate a good fit for all models and thus support our proposition that partial measurement invariance holds for all latent constructs of all groups. The partial invariance models which were obtained are used in the following hypotheses testing.

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (ΔCFI)	TLI (ΔTLI)	RMSEA (ΔRMSEA)	SCF
Fashion						
Strong vs. weak offline performance						
Model 1:	561.192/266		.949	.934	.091	1.00
Configural invariance	(.000)		(-)	(-)	(-)	
Model 2:	595.381/280	34.189	.946	.933	.092	1.00
Full metric invariance	(.000)	(.002)	(.003)	(.001)	(.001)	
Model 3:	578.163/277	12.828	.948	.936	.090	1.00
Partial metric invariance[a]	(.000)	(.086)	(.001)	(.002)	(.001)	
Model 4:	694.105/296	115.942	.931	.921	.100	1.00
Partial metric and full scalar invariance	(.000)	(.000)	(.015)	(.003)	(.002)	
Model 5:	592.626/287	14.463	.947	.936	.090	1.00
Partial metric and partial scalar invariance[b]	(.000)	(.070)	(.001)	(-)	(-)	
Strong vs. weak online performance						
Model 1:	503.048/266		.950	.936	.082	1.01
Configural invariance	(.000)		(-)	(-)	(-)	
Model 2:	549.320/280	46.272	.943	.931	.085	1.00
Full metric invariance	(.000)	(.000)	(.013)	(.005)	(.003)	
Model 3:	520.968/277	17.920	.949	.937	.081	1.01
Partial metric invariance[c]	(.000)	(.088)	(.001)	(.001)	(.001)	
Model 4:	748.638/296	167.043	.917	.903	.100	1.00
Partial metric and full scalar invariance	(.000)	(.000)	(.032)	(.034)	(.019)	
Model 5:	533.470/285	12.502	.948	.937	.081	1.01
Partial metric and partial scalar invariance[d]	(.000)	(.357)	(.001)	(-)	(-)	
Grocery						
Strong vs. weak offline performance						
Model 1:	587.370/266		.935	.906	.093	1.02
Configural invariance	(.000)		(-)	(-)	(-)	
Model 2:	656.447/280	69.077	.924	.896	.098	1.02
Full metric invariance	(.000)	(.000)	(.011)	(.010)	(.005)	
Model 3:	597.611/276	10.241	.935	.910	.092	1.02
Partial metric invariance[e]	(.000)	(.323)	(-)	(.004)	(.001)	
Model 4:	815.710/295	218.099	.895	.864	.112	1.02
Partial metric and full scalar invariance	(.000)	(.000)	(.040)	(.046)	(.020)	
Model 5:	605.211/282	7.600	.935	.913	.090	1.02
Partial metric and partial scalar invariance[f]	(.000)	(.396)	(-)	(.003)	(.002)	
Strong vs. weak online performance						
Model 1:	579.118/266		.934	.905	.092	1.01
Configural invariance	(.000)		(-)	(-)	(-)	
Model 2:	659.247/281	80.129	.921	.892	.098	1.01
Full metric invariance	(.000)	(.000)	(.013)	(.014)	(.006)	
Model 3:	594.647/274	15.529	.933	.906	.091	1.01
Partial metric invariance[g]	(.000)	(.051)	(.001)	(.001)	(.001)	
Model 4:	697.115/293	102.468	.916	.891	.099	1.01
Partial metric and full scalar invariance	(.000)	(.000)	(.013)	(.015)	(.008)	
Model 5:	603.137/282	8.490	.932	.908	.091	1.01
Partial metric and partial scalar invariance[h]	(.000)	(.382)	(.001)	(.002)	(-)	

Note: SCF = Scaling correction factor for MLM; OfP = Offline channel performance; OnP = Online channel performance.
[a] Factor loadings are freed for the following items: COM, AES, and LOY2.
[b] Intercepts are freed for the following items: .ASS, LAY, COM, TRA, WEB, OFF1, ON1, LOY1, and LOY3.
[c] Factor loadings are freed for the following items: TRA, AES, and ON4.
[d] Intercepts are freed for the following items: .LAY, AES, NAV, WEB, OFF3, ON4, and LOY3.
[e] Factor loadings are freed for the following items: PRI, LAY; WEB; OFF2, and LOY2.
[f] Intercepts are freed for the following items: ASS, PRI, LAY, WEB, OFF1, OFF2, ON 2 and ON4.
[g] Factor loadings are freed for the following items: PRI, LAY, NAV, OFF3,ON4, and LOY3.
[h] Intercepts are freed for the following items: ASS, LAY, PRI, AES, WEB, OFF1, OFF2, OFF3, ON2, and ON3.

Table E-30: Measurement invariance for weak and strong OfP and OnP retailers

Source: Own creation.

Model	χ^2/df (*p*-value)	χ^2-Difference (*p*-value)	CFI (ΔCFI)	TLI (ΔTLI)	RMSEA (ΔRMSEA)	SCF
Fashion						
Model 1:	1086.156/525		.956	.948	.063	1.18.
Configural invariance	(.000)		(-)	(-)	(-)	
Model 2:	1122.210/543	36.054	.955	.948	.063	1.17
Full metric invariance	(.000)	(.008)	(.001)	(-)	(-)	
Model 4:	1114.416/542	28.260	.956	.948	.063	1.17
Partial metric invariance[a]	(.000)	(.085)	(-)	(-)	(-)	
Model 4:	1178.865/563	64.449	.952	.946	.064	1.16
Partial metric and full scalar invariance	(.000)	(.000)	(.004)	(.002)	(.001)	
Model 5:	1141.064/559	26.648	.955	.949	.062	1.16
Full metric and partial scalar invariance[b]	(.000)	(.089)	(.001)	(.001)	(.001)	
Grocery						
Model 1:	1031.389/525		.961	.953	.057	1.17
Configural invariance	(.000)					
Model 2:	1061.682/543	30.293	.960	.953	.056	1.16
Full metric invariance	(.000)	(.058)	(.001)	(-)	(.001)	
Model 3:	1185.513/564	154.124	.952	.946	.061	1.16
Full metric and full scalar invariance	(.000)	(.000)	(.008)	(.007)	(.005)	
Model 4:	1082.961/557	21.279	.959	.954	.056	1.16
Full metric and partial scalar invariance[c]	(.000)	(.103)	(.001)	(.001)	(-)	

Note: SCF = Scaling correction factor for MLM.
a Factor loading freed for the following item: RBE3 time point one.
b Intercepts freed for the following items: OFF2 and LOY3 time point one; OFF4 and ON4 time point three.
c Intercepts freed for the following items: OFF4, ON4, and LOY1 time point one; OFF1, OFF4, LOY3, and LOY4 time point three.

Table E-31: Measurement invariance across time points

Source: Own creation.

3.4. Common Method Variance

Regarding our reciprocal models, we use panel data which we collected in three waves. Collecting data at different time points and using an appropriate questionnaire design and administration diminishes the potential threat of CMV within our data set ex ante. The appropriate questionnaire design and administration included first that respondents were assured that the study was anonymous and confidential and that their answers could neither be right or wrong. Second, the question order was randomized and the study started with the measures of the dependent variables (Chang et al. 2010; Weiber and Mühlhaus 2014, p. 360). Nevertheless CMV can only be diminished by following these suggestions and we therefore additionally calculated single-factor tests using confirmatory factor analysis (Podsakoff et al. 2003) to account for CMV ex post. The models with all items loading on a single factor showed significantly worse fit than our proposed models in both sectors and in all three time points (see Table E-32). Table E-33 to Table E-35 show the results for the marker variable technique (Lindell and Whitney 2001) following the latent variable approach of Williams et al. (2010). We choose to use self-efficacy as a marker variable as it is generally used to predict work-related outcomes (Chen et al. 2001) and is therefore theoretically unrelated to our constructs. The technique consists of three successive phases. The results of the model comparisons (phase I) point out that the correlations between the latent constructs are not biased through the presence of the marker variable (Method-U vs. -R). The results of the following reliability decomposition (phase II) indicate that

the amount of method variance, associated with the measurement of the substantive latent constructs, is less than 2 percent in the fashion sector (between .732 and 1.508 percent) and less than 1 percent in the grocery sector (between .048 and .035 percent). As the impact of method variance in the study of Williams et al. (2010) was above 12.5 percent, we found that the present results of below two percent could be decreased. The results of the sensitivity analysis (phase III) show a low effect of marker-based method variance on construct correlations.

	CFI	TLI	RMSEA	SRMR	χ^2 (df)	$\Delta\chi^2$(df)	*p*-value of difference
Fashion							
Time point one							
Proposed model	.940	.922	.132	.036	289.979 (51)	827.564 (3)	.000
Single factor model	.731	.672	.271	.083	1117.543(54)		
Time point two							
Proposed model	.945	.929	.112	.034	222.729 (51)	626.884 (3)	.000
Single factor model	.747	.691	.234	.088	849.613 (54)		
Time point three							
Proposed model	.956	.943	.104	.035	199.287 (51)	753.420 (3)	.000
Single factor model	.733	.674	.248	.084	952.707 (54)		
Grocery							
Time point one							
Proposed model	.935	.915	.115	.054	252.719 (51)	879.915 (3)	.000
Single factor model	.650	.573	.258	.110	1132.634 (54)		
Time point two							
Proposed model	.945	.929	.100	.058	205.153 (51)	685.011 (3)	.000
Single factor model	.702	.636	.227	.100	890.164 (54)		
Time point three							
Proposed model	.946	.931	.099	.048	201.040 (51)	702.0252 (3)	.000
Single factor model	.696	.629	.229	.102	903.292 (54)		

Note: Difference tests were conducted using χ^2 tests of difference.

Table E-32: Single-factor tests

Source: Own creation.

Model	χ^2	df	CFI	TLI	RMSEA	SRMR	SCF
Fashion							
CFA	836.431	242	.919	.908	.093	.075	1.03
Baseline	827.664	249	.922	.913	.091	.075	1.04
Method-C	866.889	247	.916	.906	.094	.107	1.03
Method-U	814.783	229	.920	.904	.096	.049	1.03
Method-R	820.248	239	.920	.907	.095	.049	1.05
Chi-square differences of model comparison tests							
ΔModels	$\Delta\chi^2$	Δdf	*p*				
Baseline with Method-C	39.225	2	***				
Method-C with Method-U	52.106	18	***				
Method-U with Method-R	5.465	10	ns				
Grocery							
CFA	954.040	242	.882	.866	.101	.067	1.03
Baseline	941.124	249	.886	.873	.098	.067	1.05
Method-C	932.984	247	.887	.873	.098	.065	1.05
Method-U	891.301	229	.890	.867	.100	.057	1.05
Method-R	888.752	239	.891	.865	.100	.056	1.05
Chi-square differences of model comparison tests							
ΔModels	$\Delta\chi^2$	Δdf	*p*				
Baseline with Method-C	8.140	2	*				
Method-C with Method-U	41.683	18	**				
Method-U with Method-R	2.549	10	ns				

Note: SCF = Scaling correction factor for MLM.
*** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant.

Table E-33: Results of the model comparisons (phase I)

Source: Own creation.

Latent variable	Reliability baseline model: Total reliability	Decomposed reliability from method-U model: Substantive reliability	Method reliability	% reliability marker variable
Fashion				
Loyalty	.928	.914	.014	1.508
Offline retail brand equity	.956	.949	.007	.732
Online retail brand equity	.969	.957	.012	1.238
Offline brand beliefs	.819	.813	.006	.733
Online brand beliefs	.903	.892	.011	1.218
Grocery				
Loyalty	.882	.846	.036	.041
Offline retail brand equity	.946	.910	.036	.038
Online retail brand equity	.956	.923	.033	.035
Offline brand beliefs	.787	.749	.038	.048
Online brand beliefs	.872	.835	.037	.042

Table E-34: Results of the reliability decomposition (phase II)

Source: Own creation.

Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
Fashion					
Offline RBE with LOY	.806	.805	.796	.812	.812
Online RBE with LOY	.728	.728	.721	.736	.736
Offline BB with LOY	.788	.788	.779	.812	.797
Online BB with LOY	.706	.706	.705	.736	.719
Online RBE with Offline RBE	.823	.823	.821	.829	.829
Offline BB with Offline RBE	.918	.919	.913	.921	.921
Online BB with Offline RBE	.704	.704	.706	.718	.718
Offline BB with Online RBE	.780	.781	.777	.787	.787
Online BB with Online RBE	.876	.876	.875	.881	.881
Online BB with Offline BB	.687	.688	.690	.702	.702
SEL with LOY	-.199	.000	.000	.000	.000
SEL with Offline RBE	-.208	.000	.000	.000	.000
SEL with Online RBE	-.127	.000	.000	.000	.000
SEL with Offline BB	-.222	.000	.000	.000	.000
SEL with Online BB	-.072	.000	.000	.000	.000
Grocery					
Offline RBE with LOY	.664	.665	.672	.671	.670
Online RBE with LOY	.552	.553	.551	.552	.552
Offline BB with LOY	.743	.744	.746	.746	.745
Online BB with LOY	.541	.542	.545	.544	.544
Online RBE with Offline RBE	.673	.673	.680	.680	.681
Offline BB with Offline RBE	.864	.864	.863	.863	.862
Online BB with Offline RBE	.625	.625	.620	.620	.620
Offline BB with Online RBE	.648	.648	.651	.651	.651
Online BB with Online RBE	.890	.890	.896	.895	.895
Online BB with Offline BB	.731	.731	.727	.727	.727
SEL with LOY	-.015	.000	.000	.000	.000
SEL with Offline RBE	.125	.000	.000	.000	.000
SEL with Online RBE	-.011	.000	.000	.000	.000
SEL with Offline BB	.080	.000	.000	.000	.000
SEL with Online BB	.095	.000	.000	.000	.000

Note: BB = Brand beliefs; RBE = Retail brand equity; LOY = Loyalty; SEL = Self efficacy.

Table E-35: Results of the sensitivity analyses (phase III)

Source: Own creation.

3.5. Endogeneity Tests

To test for endogeneity in the crosswise models we used channel trust (offline and online) as instrumental variable (IV) for the offline and the online brand beliefs (Bart et al. 2005; McKnight et al. 2002). We first checked whether offline and online trust are strong predictors of offline and online brand beliefs using *F*-tests. The *F*-Tests are used to provide evidence that the IVs have no joint influence on the instrumented variable (offline and online brand beliefs). As the calculated *F*-values exceeded the recommended threshold of 10 in both samples (see Table E-36), the IVs can be considered to be strong predictors (Antonakis et al. 2014). Additionally to our efficient (i.e., proposed) models we estimated consistent models (see Table E-37), which included the IVs (Antonakis et al. 2010) and verified whether there was a change in path estimates using the Hausman (1978) test.

	Fashion		Grocery	
	MV/Std. of IV	*F*-value	MV/Std. of IV	*F*-value
Offline trust → Offline BB	5.5/1.0	410.7	4.5/1.4	373.9
Online trust → Online BB	4.6/1.6	100.9	3.7/1.1	109.6

Note: MV/Std. = Mean values and standard deviations; BB = Brand beliefs: *F*-value > 10 indicates strong predictor.

Table E-36: F-tests of strong instrument variables for the crosswise models

Source: Own creation.

	Fashion				Grocery			
	Efficient model		Consistent model		Efficient model		Consistent model	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
Offline trust→ Offline BB	-	-	.792	***	-	-	.863	***
Online trust → Online BB	-	-	.544	***	-	-	.459	***
Offline BB → Online RBE	.287	***	.323	***	.137	**	.201	***
Online BB → Offline RBE	.167	***	.181	***	.109	† (*p* =.061)	.192	***
Offline BB → Offline RBE	.793	***	.804	***	.793	***	.815	***
Online BB → Online RBE	.707	***	.713	***	.827	***	.867	***
Offline RBE → LOY	.467	***	.468	***	.238	***	.209	***
Online RBE → LOY	.223	***	.232	***	.200	**	.174	***
R² LOY	.671	***	.581	***	.677	***	.721	***
Total effects of Offline BB on LOY	.434	***	.451	***	.216	***	.206	***
Total effects of Online BB on LOY	.236	***	.250	***	.192	***	.191	***
Covariates								
Gender	.047	ns	.054	ns	.042	ns	.040	ns
Age	.071	ns	.097	*	-.019	ns	-.018	ns
Household size	-.031	ns	-.038	ns	-.064	† (*p* =.083)	-.059	† (*p* =.081)
Income	-.001	ns	-.003	ns	.060	ns	.056	ns
Internet expertise	.013	ns	.032	ns	.080	† (*p* =.060)	-.075	*
Familiarity	.237	***	.276	***	.716	***	.664	***

Structural model fits:
Efficient model (Fashion): CFI .937; TLI .924; RMSEA .075; SRMR .043 $\chi^2(259) = 642.074$; SCF = 1.00.
Consistent model (Fashion): CFI .900; TLI .887; RMSEA .089; SRMR .161; $\chi^2(309) = 947.261$; SCF = .97.
Efficient model (Grocery): CFI .902; TLI .884; RMSEA .092; SRMR .148; $\chi^2(262) = 899.120$; SCF = .90.
Consistent model (Grocery): CFI .901; TLI .885; RMSEA .093; SRMR .151; $\chi^2(309) = 1033.132$; SCF =.83.
Note: BB = Brand beliefs; RBE = Retail brand equity; LOY = Conative loyalty; standardized coefficients are shown. N = 271 (fashion) and N = 274 (grocery); SCF = Scaling correction factor for MLM.
*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; ns = not significant.

Table E-37: Results of the efficient and consistent crosswise models

Source: Own creation.

	Fashion		Grocery	
	MV/Std. of IV	*F*-value	MV/Std. of IV	*F*-value
Offline ATT → Offline RBE	3.9/1.6	36.9	4.4/1.4	215.4
Online ATT → Online RBE	4.0/1.5	260.1	3.6/1.2	149.8

Note: MV/Std. = Mean values and standard deviations; BB = Brand beliefs: *F*-value > 10 indicates strong predictor.

Table E-38: F-tests of strong instrument variables for the cross-lagged models

Source: Own creation.

	Fashion				Grocery			
	Efficient model		Consistent model		Efficient model		Consistent model	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
Offline ATT → Offline RBE (1)	-	-	.835	***	-	-	.729	***
Online ATT → Online RBE (1)	-	-	.678	***	-	-	.490	***
Offline RBE (1) → Online RBE (2)	.158	**	.170	***	.091	***	.061	***
Online RBE (1) → Offline RBE (2)	.046	*	.055	***	.031	**	.048	***
Offline RBE (1) → LOY (2)	.081	***	.076	***	.024	*	.080	**
Online RBE (1) → LOY (2)	.056	*	.055	***	.019	*	.068	**
Offline RBE (1) → Offline RBE (2)	.889	***	.902	***	.743	***	.868	***
Online RBE (1) → Online RBE (2)	.743	***	.781	***	.703	***	.849	***
LOY (1) → LOY (2)	.825	***	.824	***	.669	***	.714	***
Offline RBE (2) → Online RBE (3)	.167	***	.179	***	.113	***	.064	***
Online RBE (2) → Offline RBE (3)	.048	*	.055	***	.038	**	.050	***
Offline RBE (2) → LOY (3)	.091	***	.084	***	.030	*	.081	**
Online RBE (2) → LOY (3)	.064	*	.060	***	.023	*	.074	**
Offline RBE (2) → Offline RBE (3)	.907	***	.911	***	.916	***	.911	***
Online RBE (2) → Online RBE (3)	.825	***	.820	***	.873	***	.910	***
LOY (2) → LOY (3)	.879	***	.882	***	.956	***	.714	***
R^2 LOY	.845	***	.854	***	.931	***	.745	***
Total effects of Offline RBE (1) on LOY (3)	.162	***	.126	***	.047	*	.075	**
Total effect of Online RBE (1) on LOY (3)	.101	**	.091	***	.035	*	.067	**
Covariates								
Gender (1) → LOY (1)	.030	*	.030	*	.034	*	.034	*
Gender (2) → LOY (2)	.034	*	.304	*	.037	*	.038	*
Gender (3) → LOY (3)	.029	*	.029	*	.044	*	.043	*
Age (1) → LOY (1)	-.001	ns	-.001	ns	.054	***	.054	***
Age (2) → LOY (2)	-.001	ns	-.001	ns	.059	***	.060	***
Age (3) → LOY (3)	-.001	ns	-.001	ns	.070	***	.070	***
Household size (1) → LOY (1)	.010	ns	.010	ns	-.008	ns	-.008	ns
Household size (2) → LOY (2)	.011	ns	.011	ns	-.009	ns	-.010	ns
Household size (3) → LOY (3)	.009	ns	.010	ns	-.010	ns	-.010	ns
Income (1) → LOY (1)	-.013	ns	-.013	ns	-.024	*	-.024	*
Income (2) → LOY (2)	-.015	ns	-.015	ns	-.026	*	-.024	*
Income (3) → LOY (3)	-.013	ns	-.013	ns	-.031	*	-.031	*
Internet expertise (1) → LOY (1)	.034	*	.034	*	.016	ns	.017	ns
Internet expertise (2) → LOY (2)	.037	*	.037	*	.018	ns	.019	ns
Internet expertise (3) → LOY (3)	.033	*	.033	*	.021	ns	.021	ns
Familiarity (1) → LOY (1)	.209	***	.208	***	.269	***	.260	***
Familiarity (2) → LOY (2)	.230	***	.226	***	.291	***	.301	***
Familiarity (3) → LOY (3)	.213	***	.214	***	.349	***	.345	***

Structural model fits:
Efficient model (Fashion): CFI .948; TLI .944; RMSEA .056; SRMR .044; $\chi^2(1156) = 2129.857$; SCF = 1.11.
Consistent model (Fashion): CFI .862; TLI .856; RMSEA .098; SRMR .102; $\chi^2(1589) = 3545.694$; SCF = 1.10.
Efficient model (Grocery): CFI .911; TLI .905; RMSEA .078; SRMR .068; $\chi^2(1108) = 2101.729$; SCF = .99.
Consistent model (Grocery): CFI .890; TLI .883; RMSEA .087; SRMR .086; $\chi^2(1607) = 3346.774$; SCF = .98.
Note: ATT = Attractiveness; RBE = Retail brand equity; LOY = Conative loyalty; standardized coefficients are shown. N = 271 (fashion) and N = 274 (grocery); SCF = Scaling correction factor for MLM.
*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; ns = not significant.

Table E-39: Results of the efficient and consistent cross-lagged models

Source: Own creation.

To test for endogeneity in the cross-lagged models we used offline and online channel attractiveness (Verhoef et al. 2007b) as instrumental variable for retail brand equity (offline and online). In a first step we checked whether offline and online channel attractiveness are strong predictors of offline and online retail brand equity using *F*-tests (see Table E-38). The *F*-tests are conducted to prove the hypotheses that the IVs have no joint influence on the instrumented variables (offline retail brand equity and online retail brand equity). The calculated *F*-values were above the recommended threshold of 10 for both samples. Thus, both IVs (offline and online channel attractiveness) can be interpreted as strong predictors (Antonakis et al. 2014). Additionally to the efficient (proposed) models (Antonakis et al. 2010), we estimated consistent models which included the two IVs (see Table E-39) and tested if there was a change in path estimates using the Hausman (1978) test.

3.6. Description of the Cross-Lagged Design

The cross-lagged design includes stability effects of each variable over time (e.g., the modeled path from offline retail brand equity at time point one to offline retail brand equity at time point two), thus we modeled the respective effects. Also, cross-lagged designs include disturbance correlations with respect to the indicators (Burkholder and Harlow 2003). We therefore modeled disturbance correlations between the same indicators across all three time points. Another characteristic of cross-lagged panel models is that the same effects are constrained to be equal over time (e.g., the effect from offline retail brand equity at time point one on online retail brand equity at time point two and the respective effect from time point two to time point three are equally estimated) (Finkel 1995). Furthermore, we included disturbance correlations between all constructs at time point two and integrated them at time point three (Finkel 1995). The same disturbance correlations between time points two and three are constrained and thus estimated equally (Finkel 1995) for example, the disturbance correlation between offline and online retail brand equity at time point two is equally estimated at time point three.

3.7. Manipulation Check

To check whether the categorization of strong and weak OfP and OnP retailers was successful we conducted a series of *t*-tests followed by ANOVAs (see Table E-40 and Table E-41). The *t*-tests showed significant differences between the groups. Prior to run the ANOVAs we checked the assumptions for the procedure. First, we checked whether our variables are univariate and multivari-

ate normally distributed. Second, we verified whether error variances are equal across groups (Backhaus et al. 2016, p. 211). We found violations of both assumptions but—as we observe almost equal group sizes (i.e., ratio of group sizes ≤ 1.5) the test statistics will be robust in cases in which normality is violated (Bray and Maxwell 1985) as well as in cases in which error variances are heterogeneous (Glass et al. 1972).

		Offline channel performance			Online channel performance		
Dependent variable	Group	MV/Std.	*t*-test (2-sided)	*p*	MV/Std.	*t*-test (2-sided)	*p*
Fashion							
Offline brand beliefs	weak	3.5/1.1	-5.4	.000	3.4/1.0	-6.7	.000
	strong	4.1/0.8			4.2/0.8		
Online brand beliefs	weak	3.8/1.0	-2.1	.036	3.4/0.8	-9.9	.000
	strong	5.1/0.9			5.4/0.8		
Offline retail brand equity	weak	3.3/1.7	-6.2	.000	2.9/1.4	-13.2	.000
	strong	4.5/1.4			4.9/1.1		
Online retail brand equity	weak	3.6/1.6	-4.8	.000	3.3/1.3	-12.8	.000
	strong	4.9/1.3			5.1/1.1		
Grocery							
Offline brand beliefs	weak	4.2/1.0	-2.4	.017	4.1/0.8	-4.3	.000
	strong	4.4/0.7			4.5/0.8		
Online brand beliefs	weak	4.3/1.2	-5.5	.000	4.2/1.1	-6.8	.000
	strong	4.9/0.9			5.0/0.9		
Offline retail brand equity	weak	3.6/1.2	-6.6	.000	3.6/1.2	-7.1	.000
	strong	4.5/1.2			4.6/1.2		
Online retail brand equity	weak	3.7/1.4	-5.4	.000	3.6/1.3	-7.6	.000
	strong	4.6/1.1			4.7/1.0		

Note: MV/Std. = mean value and standard deviation; SE = standard error; Fashion: N = 127 (weak) and N = 144 (strong); Grocery: N = 139 (weak) and N = 135 (strong); equal variances assumed.

Table E-40: Independent samples t-test: Comparing offline and online channel performance

Source: Own creation.

		Fashion				Grocery			
Dependent variable	Effect	MS	F	*p*	Partial η^2	MS	F	*p*	Partial η^2
Offline brand beliefs	OfP	33.0	47.4	.000	.151	4.2	6.1	.014	.020
	OnP	46.3	66.4	.000	.199	13.2	18.9	.000	.060
	OfP x OnP	18.0	25.7	.000	.088	.3	.5	.498	.002
	Error	.7				.7			
Online brand beliefs	OfP	5.9	9.6	.002	.035	32.3	35.2	.000	.106
	OnP	64.6	105.2	.000	.283	46.9	51.1	.000	.147
	OfP x OnP	1.1	1.8	.178	.007	.8	.9	.344	.003
	Error	.6				.9			
Offline retail brand equity	OfP	117.3	1.04	.000	.274	56.6	48.7	.000	.145
	OnP	316.3	270.7	.000	.504	62.2	53.5	.000	.157
	OfP x OnP	17.2	14.8	.000	.053	9.6	8.3	.004	.028
	Error	1.2				1.2			
Online retail brand equity	OfP	59.8	52.5	.000	.165	4.04	30.6	.000	.096
	OnP	241.6	212.2	.000	.444	75.8	58.0	.000	.168
	OfP x OnP	7.8	6.9	.009	.025	.2	.1	.914	.000
	Error	1.1				1.3			

Note: MS = mean square; OfP = Offline channel performance; OnP = Online channel performance; N = 271 (fashion) and N = 274 (grocery)

Table E-41: ANOVA

Source: Own creation.

3.8. Additional Models: Offline and Online Purchase Intentions

Although longitudinal and cross-sectional studies show contradictory results (e.g., Swoboda et al. 2013a), the longitudinal models confirm the cross-sectional results. However, the need for further reciprocal approaches is obvious as otherwise unobserved effects might bias the conclusions, as for example channel specific effects on consumer behavior. Therefore additional models were estimated that include offline purchase intentions and online purchase intentions to check whether the crosswise and reciprocal results are stable when channel-specific outcomes are observed. With regard to the reciprocal models stable relationships are underlined: purchase intentions in offline and online channels are affected by offline retail brand equity and online retail brand equity, but however not in grocery retailing.

	Fashion retailing		Grocery retailing	
Effects	β	p	β	p
Offline BB → Online RBE	.496	***	.204	**
Online BB → Offline RBE	.034	† (p = .074)	.137	*
Offline BB → Offline RBE	.845	***	.678	***
Online BB → Online RBE	.385	***	.623	***
Offline RBE → Offline PI	.204	***	.173	***
Online RBE → Offline PI	.070	*	.127	**
Offline RBE → Online PI	.143	**	-.051	ns
Online RBE → Online PI	.269	***	.261	***
R^2 Offline PI	.767	***	.560	***
R^2 Online PI	.595	***	.144	***
Indirect effects				
Offline BB → Online RBE → Offline PI	.035	*	.026	*
Online BB → Offline RBE → Offline PI	.007	ns	.024	† (p = .066)
Offline BB → Offline RBE → Offline PI	.173	***	.117	***
Online BB → Online RBE → Offline PI	.027	*	.079	**
Offline BB → Online RBE → Online PI	.133	***	.053	**
Online BB → Offline RBE → Online PI	.005	ns	-.007	ns
Offline BB → Offline RBE → Online PI	.121	**	-.034	ns
Online BB → Online RBE → Online PI	.104	***	.163	***
Total effects				
Offline BB → Offline PI	.207	***	.143	***
Offline BB → Online PI	.254	***	.019	ns
Online BB → Offline PI	.034	† (p = .076)	.103	***
Online BB → Online PI	.108	***	.156	***
Covariates				
Gender → Offline PI	-.025	ns	.038	ns
Gender → Online PI	-.013	ns	-.006	ns
Age → Offline PI	-.047	ns	-.017	ns
Age → Online PI	-.008	ns	-.031	ns
Household size → Offline PI	.004	ns	-.022	ns
Household size → Online PI	.011	ns	.027	ns
Income → Offline PI	-.006	ns	.027	ns
Income → Online PI	-.052	ns	.066	ns
Internet expertise → Offline PI	-.072	*	-.028	ns
Internet expertise → Online PI	.072	† (p = .058)	.170	**
Familiarity → Offline PI	.693	***	.566	***
Familiarity → Online PI	.469	***	.139	*

Structural model fits:
Fashion: CFI .923; TLI .912; RMSEA .086; SRMR.,069 $\chi^2(376) = 1092.292$; SCF = 1.01.
Grocery: CFI .919; TLI .907; RMSEA .078; SRMR .066 $\chi^2(376) = 1038.381$; SCF = 1.03.
Note: BB = Brand beliefs; RBE = Retail brand equity; PI = Purchase intention; SCF = Scaling correction factor for MLM; Standardized coefficients are shown. ns = not significant; † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table E-42: Additional results for the crosswise models

Source: Own creation.

	Fashion retailing				Grocery retailing			
	Model 1: Offline PI		Model 2: Online PI		Model 3: Offline PI		Model 4: Online PI	
Effects	*β*	*p*	*β*	*p*	*β*	*p*	*β*	*p*
Offline RBE (1) → Online RBE (2)	.158	***	.157	***	.091	***	.091	***
Online RBE (1) → Offline RBE (2)	.045	**	.047	**	.031	**	.028	*
Offline RBE (1) → PI (2)	.070	**	.037	*	.088	***	.012	ns
Online RBE (1) → PI (2)	.045	*	.048	*	.064	***	.064	***
Offline RBE (1) → Offline RBE (2)	.888	***	.889	***	.742	***	.745	***
Online RBE (1) → Online RBE (2)	.743	***	.743	***	.703	***	.703	***
PI (1) → PI (2)	.814	***	.863	***	.614	***	.594	***
Offline RBE (2) → Online RBE (3)	.167	***	.166	***	.113	***	.114	***
Online RBE (2) → Offline RBE (3)	.047	**	.049	**	.038	**	.035	**
Offline RBE (2) → PI (3)	.079	**	.041	*	.104	***	.015	ns
Online RBE (2) → PI (3)	.052	*	.054	*	.075	***	.081	***
Offline RBE (2) → Offline RBE (3)	.910	***	.905	***	.914	***	.921	***
Online RBE (2) → Online RBE (3)	.804	***	.805	***	.874	***	.874	***
PI (2) → PI (3)	.883	***	.907	***	.802	***	.807	***
R^2 PI	.834	***	.855	***	.714	***	.689	***
Total effect of Offline RBE (1) on PI (3)	.140	***	.079	*	.146	***	.029	ns
Total effect of Online RBE (1) on PI (3)	.081	*	.086	*	.116	***	.109	***
Differences in total effects between sectors (t-tests)								
Δ Total effect of Offline RBE (1) on PI (3)		1.181	ns			2.526	**	
Δ Total effect of Online RBE (1) on PI (3)		.0942	ns			.165	ns	
Covariates								
Gender (1) → PI (1)	.020	ns	.017	ns	.030	ns	-.001	ns
Gender (2) → PI (2)	.022	ns	.019	ns	.030	ns	-.001	ns
Gender (3) → PI (3)	.020	ns	.017	ns	.038	ns	-.001	ns
Age (1) → PI (1)	-.006	ns	-.025	ns	.018	ns	-.007	ns
Age (2) → PI (2)	-.006	ns	-.027	ns	.018	ns	-.008	ns
Age (3) → PI (3)	-.006	ns	-.025	ns	.023	ns	-.009	ns
Household size (1) → PI (1)	-.001	ns	-.004	ns	.016	ns	-.001	ns
Household size (2) → PI (2)	-.001	ns	-.004	ns	.016	ns	-.001	ns
Household size (3) → PI (3)	-.001	ns	-.004	ns	.021	ns	-.001	ns
Income (1) → PI (1)	-.012	ns	.000	ns	.023	*	.020	ns
Income (2) → PI (2)	-.014	ns	.000	ns	.023	*	.021	ns
Income (3) → PI (3)	-.012	ns	.000	ns	.029	*	.025	ns
Internet expertise (1) → PI (1)	.039	*	.014	ns	.016	ns	.065	**
Internet expertise (2) → PI (2)	.043	*	.015	ns	.016	ns	.070	**
Internet expertise (3) → PI (3)	.039	*	.014	ns	.020	ns	.082	**
Familiarity (1) → PI (1)	.239	***	.450	***	.384	***	.108	***
Familiarity (2) → PI (2)	.257	***	.446	***	.381	***	.116	***
Familiarity (3) → PI (3)	.251	***	.472	***	.486	***	.137	***

Structural model fits:
Model 1: CFI .921; TLI .917; RMSEA .098; SRMR .072; $\chi^2(1007) = 3200.666$; SCF = .59.
Model 2: CFI .924; TLI .920; RMSEA .094; SRMR .235; $\chi^2(1007) = 3035.692$; SCF = .60.
Model 3: CFI .946; TLI .942; RMSEA .062; SRMR .123; $\chi^2(1007) = 1359.855$; SCF = 1.04.
Model 4: CFI .934; TLI .929; RMSEA .069; SRMR .217; $\chi^2(1007) = 1700.319$; SCF = 1.02.
Note: BB = Brand beliefs; RBE = Retail brand equity; PI = Purchase Intentions; (1, 2, 3) = time points; SCF = Scaling correction factor for MLM; Standardized coefficients are shown. N = 271 (fashion). ns = not significant; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table E-43: Additional results for the reciprocal models

Source: Own creation.