

## **B. Study 1: Reciprocal Effects of the Corporate Reputation and Store Equity of Retailers**

### **1. Introduction**

Retailers are increasingly focused on their corporate reputations and the position of their stores as strong brands in local markets. For example, Starbucks invests in both its corporate reputation and its retail brand (Pellet 2006) to strengthen intangible assets and performance (Jinfeng and Zhilong 2009; Brown et al. 2006) as well as to attract consumers (e.g., Nguyen and Leblanc 2001). Although these investments by retailers such as Starbucks aim to strengthen corporate and store perceptions among consumers, Stanley and Sewall (1976) noted in the 1970s that the perceptions of a corporation may be a function of the perceptions of an individual store and vice versa. Thus, these authors address important bidirectional relationships in consumer memory. To analyze such relationships, the present study focuses on the reciprocal effects of corporate reputation and retail store equity from the consumer's perspective. Corporate reputation is defined as the overall evaluation of a retail corporation by consumers (e.g., responsibility), which is primarily determined by the firm's corporate communications (Van Riel and Fombrun 2007; Walsh and Beatty 2007). Retail store equity is defined as consumer perceptions of a retailer's store as a strong brand in the local market, which is determined by local store attributes (Hartman and Spiro 2005; Yoo, Donthu, and Lee 2000; Jinfeng and Zhilong 2009); however, consumer perceptions vary for each store in a retail chain (Bloemer and De Ruyter 1998; Ou, Abratt, and Dion 2006; Jinfeng and Zhilong 2009). The reciprocity between the more general corporate-related associations and more specific store-related associations is an overlooked research topic in retailing. However, this topic is particularly important for retailers because they have to take reciprocal effects into account when allocating resources, for example, promotional investments across corporate and store levels. Furthermore, reciprocity is not easy to manage, as different organizational units may be responsible for reputation and equity (e.g., CEO/corporate communication and marketing/sales).

The retailing literature rarely addresses reciprocal relations. The interdependencies between consumer associations of different perceptual levels are undisputed, but only a few studies analyze them bidirectionally. Early conceptual references to possible reciprocal relationships are provided by Atkin (1962) and Stanley and Sewall (1976). The study by Helgesen, Ivar Håvold, and Nettet (2010) addresses two perceptual levels and shows that chain image positively influences store image through a top-down relationship. Further studies address the bottom-up effects of store brands (private labels) on store image (Grewal et al. 1998) and the top-down effect of shopping mall image on store images (Chebat, Sirgy, and St-James 2006). However, nearly all existing studies adopt a unidirectional empirical approach, although some assume the existence of a reciprocal relationship between associative constructs. One exception is the study by Kwon and Lennon (2009), who analyzed the interdependencies between beliefs and attitudes of offline and online brands for multichannel retailers. However, these authors addressed a specific context and considered a crosswise rather than reciprocal relationship. Nguyen and Leblanc (2001) also aimed to test for a relationship between reputation and image but only applied an interaction term. Thus, apart from the undisputed importance of retailer efforts to support associations between a corporation and its stores, the directionality of the effects remains unclear, for example, that between, corporate reputation and store equity. Building on the theoretical reasoning of schemata and associative networks, we believe that a reciprocal relationship exists and, more importantly, that the influence of each construct on consumer store loyalty differs in strength when comparing direct and total (i.e., the sum of direct and indirect/reciprocal) effects.

Therefore, the objective of this study is to conceptualize and test the reciprocal relationships between customer perceptions of corporate reputation and retail store equity with regard to their mutual influence on store loyalty. Specifically, we aim to analyze the following research questions: Is there actually a reciprocal relationship between corporate reputation and retail store equity? Does corporate reputation or retail store equity have a stronger effect on store loyalty?

By responding to these questions, this study contributes to retailing research, particularly with respect to the reciprocal relationships between the perceptions of consumers regarding the corporation and the store. From a theoretical

perspective, we build on the suggestion of Stanley and Sewall (1976), who stated that consumer perceptions of a corporation may influence their perceptions of a store and vice versa. Thus, we enhance the existing knowledge concerning unidirectional effects in retailing. Additionally, we address store loyalty as an important issue that is still worthy of further research (Peterson and Balasubramanian 2002; Puccinelli et al. 2009) but also as a well-researched outcome variable, which makes it easier to evaluate our reciprocal observations. From a methodological perspective, we provide insights into possible methods of successfully analyzing bidirectional relationships using studies with cross-sectional, longitudinal, and experimental designs. Finally, this study is of interest to managers; because they seek to strengthen corporate and store effects on consumer behavior, they can learn what the interrelations between these factors look like (i.e., which level more strongly determines consumer behavior) beyond their practical experience and thus gain insights on how to allocate promotional investments.

The remainder of the article is structured as follows. Based on a literature review and schema theory, we derive hypotheses that form the basis for three subsequent empirical studies with cross-sectional, longitudinal, and experimental designs. The aims, designs and results of these studies will be discussed and followed by conclusions, limitations and directions for further research.

## **2. Literature Review**

Prior research on bidirectional relationships in retailing is sparse and is distinctive from research on unidirectional relationships (see Table B–1). However, the literature has been reviewed, by focusing on two perspectives: studies that combine two perceptual levels, such as the corporate, store or store brand (private label) levels, and studies that consider one perceptual level (e.g., the corporate level only). Both types of research consider either bidirectional or unidirectional relationships but typically do not empirically study the assumed bidirectional relationships.

Study	Research question	Research type	Sample and method	Core findings
Studies considering concepts at different perception levels				
Unidirectional relationships				
Bao, Bao, and Sheng (2011)	The study tests the effects of selected extrinsic cues on customers' evaluation of a private brand.	Empirical consumer study via questionnaire	Structural equation modeling N=639	Store image has a positive effect on store brands and consists of various dimensions such as store atmosphere, store service, quality of merchandise, and store location. The authors prove that a strong store image influences both a retailer brand and its brand extension positively.
Chebat, Sirgy, and St. James (2006)	Social class image of a mall has an impact on the quality perceptions of the stores that are accommodated within the mall.	Empirical consumer study; experiment with 3x2x2 factorial design	Analysis of variance N=200	It is found that the image of a mall determines store image, especially the look and the service dimension. By comparing upscale and downscale malls, the authors found that upscale malls lead to higher store quality perceptions, especially with regard to look and service dimensions.
Grewal et al. (1998)	Analysis of the influence of store and brand name, as well as of price discounts on consumer evaluations and purchase intentions.	Empirical consumer study with 2x2x2 between subject design	Structural equation modeling N=335	Empirical evidence is presented that a strong store brand has a positive influence on store image. Furthermore, proof is given of the predicted positive effect of brand name on perceived brand quality. Despite this, brand quality evidently has a positive effect on perceived store image.
Helgesen, Ivar Håvold, and Nesset (2010)	The authors focus on examining the effects of chain and store image on consumers' satisfaction and loyalty.	Empirical consumer study via questionnaire	Structural equation modeling N=151	A positive effect of chain image on store image can be confirmed empirically. Chain image influences both store image and store satisfaction positively. Although a direct link between chain image and store loyalty could not be detected, an indirect link was identified. Chain image is indirectly linked via store satisfaction, via store image and via the relationship between store image and store satisfaction to store loyalty.
Kirkup and Rafiq (1994)	The researchers focus on answering the question of whether the tenant mix influences the perception of a shopping mall.	Case Study, first three years of trading by a shopping center	-	It is stated that the image of a shopping center is influenced by the image of the combination of stores within such a center. Thus, obtaining an attractive tenant line-up is seen as a core requirement to attract and retain customers, given that the center image is largely made up by the tenant mix.
Nevin and Houston (1980)	Addition of retailer image to the Huff model (1964) does enhance the predictions of consumers' choice within intra-urban shopping areas.	Empirical consumer study via questionnaire	Regression analysis N=827	It is shown that the image and the choice of a shopping area are dependent on the presence of a special store in a particular area. Consumers are less drawn to a certain shopping center because of its overall image but rather because of the existence of a particular store within the center.

(Table to be continued)

Table B-1 (continued)

		<b>Bidirectional relationships</b>	
		Conceptual	-
Allawadi and Keller (2004)	The authors focus on the creation of a retailer brand and therefore integrate branding principles to gain a better understanding of the concept.		Bidirectional relationships are assumed on the store as a brand, including store image. A retailer brand image can be created in different ways, including the attachment of unique associations to service quality, product assortment, pricing and/or credit policy. Furthermore, the image of a retailer brand also depends on the manufacturer brands they offer.
Atkin (1962)	Research on how advertising and face-to-face communication affects the choice of a supermarket.	Empirical consumer panel survey	Regression analysis N=145
Grewal, Levy, and Lehmann (2004)	The authors focus on how customer loyalty might be improved.	Conceptual	-
Jacoby and Mazursky (1984)	Investigation of the link between retailer image and manufacturer image.	Empirical consumer study; exploratory test of hypotheses	Exploratory investigation using a standard semantic differential scale, N=168
Martenson (2007)	How corporate store image affects customer satisfaction and store loyalty.	Empirical consumer study via mail questionnaire	Structural equation modeling N=1,000
Stanley and Sewall (1976)	How retailer image can be added to the Huff Model, which estimates retail trade potential using variables such as size of trading site.	Empirical consumer study via questionnaire	Multi-dimensional scaling N=93

(Table to be continued)

Table B-1 (continued)

Studies focusing concepts at one perception level				
Unidirectional relationships				
Burns (1992)	Image transference of, more precisely, focus on whether the image of an anchor store in a shopping complex has an impact on the image of a small and little-known store within such a shopping complex.	Empirical consumer study; experiment with 2x2 factorial design	Analysis of Variance N=369	The image of a well-known retailer's store is transferred to an unknown retailer's store within a shopping area. Consumer's perceptions of smaller, less-known stores are influenced by the image of an anchor store in the same shopping center. The image of the anchor store "spills over" and improves the image of the smaller store.
Jinfeng and Zhilong (2009)	The authors investigate the impact of store image on store equity.	Empirical consumer study via questionnaire	Structural equation modeling N=530	The effect of store image on store loyalty was verified empirically. Despite this, it was noted that store image dimensions, such as price, service facilities, and institutional factors, have a positive impact on store loyalty. Furthermore, store image dimensions positively impact store equity.
Bidirectional relationships				
Kwon and Lennon (2009)	The authors focus on examining the reciprocal effects between offline and online brand images of multi-channel retailers.	Empirical consumer study with experimental design	Analysis of Variance N=650 (experiment 1) N=630 (experiment 2)	The two experiments conducted found significant positive crosswise effects. Offline brand beliefs affect online brand beliefs and online brand beliefs influence offline brand attitudes.
Nguyen and Leblanc (2001)	The study investigates the customer's retention decision, especially the relationship between corporate image and corporate reputation.	Empirical consumer study via questionnaire	Regression analysis N=788	The positive interrelationship of corporate reputation and corporate image was confirmed by the positive interaction effect of both constructs on store patronage. Adding the interaction between the constructs leads to a better explanation of the customer's retention decision. It becomes apparent that either corporate image or corporate reputation intervenes as a moderator variable and thus enhances the effect of the other variable on the customer's loyalty.

Table B-1: Literature review  
Source: Own creation.

### 2.1. *Studies Considering Concepts at Different Perceptual Levels*

Early references to bidirectional relationships at different perceptual levels were introduced by Atkin (1962) and Stanley and Sewall (1976). Atkin (1962) analyzed whether a change in supermarket choice can be determined by advertising or personal communication. In a survey of consumers who had recently moved to a new apartment building, he assumed that former experience with a store is related to the company as a whole and then transferred to a store at the new place of residence. This linking of associations, from store to corporation and from corporation back to store, provides conceptual evidence that corporate and store-level associations are bidirectional. Stanley and Sewall (1976) focused on the improvement of retail trade forecasts by including chain image in the Huff model (Huff 1964). The authors also make conceptual references to a possible bidirectional relationship in positing that chain image perceptions are related to store perceptions and vice versa.

More recent studies that assumed bidirectional relationships focused on the store as a brand, including store image (Grewal, Levy, and Lehmann 2004) and store brands (Ailawadi and Keller 2004). Although Jacoby and Mazursky (1984) had previously posited that product brand and store image are linked to one another, Martenson (2007, p. 547) suggested the existence of a reciprocal relationship between store brand and store image, although she did not test this assumption empirically. However, she provided empirical evidence that store image has the strongest influence on corporate image, followed by (in ranked order) store brands and manufacturer brands.

Subsequent studies addressed unidirectional relationships between different perceptual levels. Helgesen, Ivar Håvold and Nettet (2010) found a positive effect of chain image on store image. Grewal et al. (1998) presented empirical evidence that a strong store brand has a positive influence on store image. However, Bao, Bao and Sheng (2011) described an effect of the opposite type: store image had a positive effect on store brands. Further studies addressed shopping area and shopping mall image. Nevin and Houston (1980) suggested that the image and the choice of a shopping area are dependent on the presence of a special store in a particular area. Kirkup and Rafiq (1994) stated that the image of a shopping center is influenced by the image of the

combination of stores within such a center. In contrast, Chebat, Sirgy and St-James (2006) found that the image of a mall determines store image.

## *2.2. Studies Considering Concepts at One Perceptual Level*

References to bidirectional relationships at the same perceptual level were made by Nguyen and Leblanc (2001) and Kwon and Lennon (2009). Nguyen and Leblanc (2001) examined whether corporate reputation and corporate image had a positive effect on store patronage. The positive interrelationship of corporate reputation and corporate image was confirmed by the positive interaction effect of both constructs on store patronage. Kwon and Lennon (2009) conducted two experiments that found positive crosswise effects: offline brand beliefs affect online brand attitudes, whereas online brand beliefs influence offline brand attitudes.

Other studies that have considered these effects on one perceptual level focused on unidirectional relationships, such as the image transference of a well-known retailer's store to an unknown retailer's store in a shopping area (Burns 1992) or the effects of store image on store equity (Jinfeng and Zhilong 2009). Furthermore, a large body of research can be categorized as being focused on one perceptual level and unidirectional. For example, all studies that have analyzed the effects of different retail marketing attributes on consumer behavior, (e.g., service and store layout perceptions on store loyalty) and all studies that have examined on the effect between retail marketing attributes (e.g., price perception on quality perceptions) consider these effects at a single level.

In summary, we draw three conclusions from the literature review. First, the number of studies that address concepts at a single perceptual level is greater than the number of studies that focus on the effects of concepts at multiple perceptual levels. In addition, few studies examine both the corporate and store levels. Second, only one study examines relationships at different perceptual levels for chain store retailers (Helgesen, Ivar Håvold, and Nettet 2010). However, it is particularly relevant for chain store retailers to determine how concepts at the corporate and store levels interact because corporate reputations are managed through corporate communication units at headquarters, whereas retail store equity is primarily managed by store man-



agers. Third, the relevance and the probable existence of bidirectional relationships have been tested empirically in only two studies: Nguyen and Leblanc (2001) tested for a relationship at a single perceptual level but only applied an interaction term showing that corporate reputation and image are positively related to one another in affecting store patronage; Kwon and Lennon (2009) considered a crosswise rather than reciprocal relationship, as four constructs were involved in their study, and thus, they did not test for a direct bidirectional relationship between two constructs. Thus we find that both approaches are not applicable to solve our research question concerning reciprocity.

### **3. Conceptual Framework and Hypothesis Development**

Scholars have previously examined unidirectional relationships from different theoretical perspectives, including the halo effect (Burns 1992), self-congruity theory (Chebat, Sirgy, and St-James 2006), signaling theory (Martenson 2007), and the summative model of attitude, which was used in the only study that aimed to test a bidirectional relationship (Kwon and Lennon 2009, p. 377f.). Addressing our research questions requires the application of a theory that is able to explain reciprocal relationships between associative constructs and link these relationships to consumer behavior. Following research that explains the effects of customer-based associative concepts through schemata and memory networks (e.g., Krishnan 1996; Hartman and Spiro 2005; Keller 1993), we use schema theoretical reasoning to explain the reciprocal relationships between corporate and store information stored in consumer memory and their effects on store loyalty (see Figure B-1). In the following sections, we first hypothesize that corporate reputation and retail store equity are reciprocal and then hypothesize concerning the effects of these constructs on store loyalty.

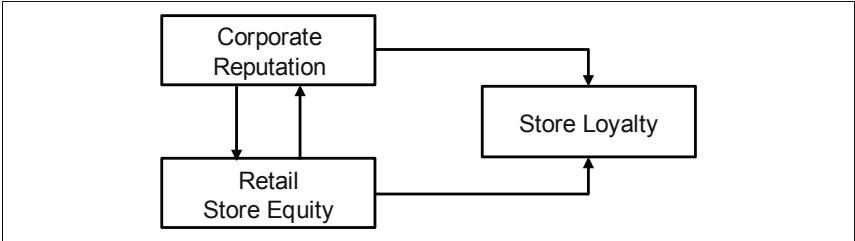


Figure B–1: Conceptual framework  
Source: Own creation.

3.1. *Hypothesis Regarding the Reciprocity between Corporate Reputation and Retail Store Equity*

Schemata are organizing mechanisms for cognition (Puligadda, Ross Jr., and Grewal 2012; McVee, Dunsmore, and Gavelek 2005). They are based on past experience and can refer to situations or objects (Mandler 1979). Although schema and memory models differ in their form and underlying assumptions (e.g., Anderson 1983; Murdock 1982; Hintzman 1986; Collins and Loftus 1975), most of them view memory as a network. This network consists of nodes or concepts, such as objects and attributes, which represent stored information (e.g., Nelson et al. 1993) and links between these nodes. For example, consumers hold information about a corporation and its stores, as well as links between them, as nodes in their minds. Considerable evidence suggests that networks can take many forms based on the nature of the cues used to access them (e.g., Barsalou 1983). Our examination of reciprocity begins with the premise that brand representations are not cognitively independent. In general, researchers have conceptualized associations, especially among brands, by using both the categorization and associative network theories.

Categorization theory implies that a consumer’s cognitive representation follows a hierarchical structure, often assuming a product category node at the highest level, followed by subcategories, brands, and, finally, attributes (e.g., Hutchinson, Raman, and Mantrala 1994; Nedungadi 1990). Scholars using the categorization model mostly focus on analyzing relations between product brand and category and product brand and subcategory rather than relationships between brand and brand (e.g., Krishnan 1996; Cowley and Mitchell 2003; Campbell and Keller 2003; Lei, Dawar, and Lemmink 2008). In our con-

text, corporate reputation may be related to a brand node, whereas retail store equity may represent a subcategory, e.g., store node. When consumers are confronted with new information, e.g., a new store, they try to integrate it into an existing corporate brand node to facilitate the formation of attitudes toward the new entity (e.g., Boush and Loken 1991). If categorization is successful, consumers transfer their corporate associations to the new entity (the new store). Our literature review supports such conceptual reasoning on bidirectional relationships between a retail corporation and a retail store (e.g., Atkin 1962; Stanley and Sewall 1976). This reasoning might also hold for the contradictory directionalities between store brand and store image (Grewal et al. 1998; Bao, Bao, and Sheng 2011; Martenson 2007).

Associative network theory (Collins and Loftus 1975) states that there are many types of relations between nodes. In general, knowledge is conceptualized as consisting of a node and a variety of associations that are linked to each other, such as attributes, brand claims, and experiences (Keller 1993; Morrin 1999; Keller 2003). Scholars using this theory focus, for example, on brand portfolio information consisting of a set of interconnected brand nodes (e.g., Farquhar and Herr 1993; Lei, Dawar, and Lemmink 2008). In a retail context, a brand node, referring to the retailer's corporate brand, is linked to other brand nodes, such as those of chain brands (within diversified retailers) or stores as strong brands in local markets (within both diversified and non-diversified retailers), which may have strong or weak links with each other. In our context, the directionality between corporate reputation (chain reputation for diversified firms) and stores as strong brands in local markets is of particular interest. Corporate reputation represents a corporate node and retail store equity refers to a store node, and these are linked to each other directly and indirectly through shared associations. To understand the directionality of the links between both concepts, one can refer to the effects of information retrieval, which occurs through spreading activation (Collins and Loftus 1975; Anderson 1983; Puligadda, Ross Jr., and Grewal 2012). According to associative network theory, the activation and links between two concepts can point in two directions. Thus, the activation of a corporate node by external information spreads to related store nodes through associative network linkages and vice versa. For example, the node related to the corporation may be activated if a

consumer watches a corporate communication spot on television or reads a newspaper article about the corporation. Through spreading activation, other related nodes, such as the store-related node, are activated. Thus, a consumer may be reminded of the store of the company where he usually shops. Conversely, an activation of the store-related node, e.g., through promotion or a direct positive shopping experience, results in spreading activation to other nodes. For example, talking to a well-trained and courteous sales clerk who helps with a product decision may cause the consumer to think about a corporation that attaches importance to the selection of good employees. Although these examples are constructed upon active cognitive thought processes, reciprocal activation across nodes takes place in the minds of consumers. The underlying relationship is positive in most of the cases when consumers hold positive associations toward the corporation and the store in their minds, whereas perceived inconsistencies by consumers are known to activate negative associations (e.g., Tse et al. 2007; Roehm and Tybout 2006; Lei, Dawar, and Lemmink 2008). However, as a first step, we propose to test the existence of a positive reciprocal relationship between corporate reputation and retail store equity. Thus we hypothesize the following:

- H1.** Corporate reputation and retail store equity have a positive reciprocal relationship.

### *3.2. Hypothesis Regarding the Effects of Corporate Reputation and Retail Store Equity on Store Loyalty*

To understand the effects of corporate reputation and retail store equity on store loyalty, it is useful to refer to the early work of Sirgy and Samli (1985), who argued that schemata can explain store loyalty, which is defined as the intention and readiness to repurchase at a store or to recommend a store (Evanschitzky and Wunderlich 2006; Oliver 1999). This understanding describes conative loyalty as a “deeply held commitment to buy” (Oliver 1999, p. 35), which forms the penultimate stage in the formation of loyalty (Harris and Goode 2004) and is viewed as a core predictor of consumer spending (Macintosh and Lockshin 1997). Schemata are said to help consumers to make choices about where to purchase and also influence shopping decisions (Crocker 1984; Grewal, Levy, and Kumar 2009; Grewal and Levy 2009). Understanding corporate reputation and retail store equity as consumer associa-

tions pertaining to a retailer and its stores will influence consumer loyalty. This conclusion is consistent with past research on the positive effects of corporate reputation on store patronage (Walsh, Beatty, and Shiu 2009; Nguyen and Leblanc 2001) and the positive effects of retail store equity on loyalty (Jinfeng and Zhilong 2009). Consequently, associations about a corporation and a store determine store loyalty.

However, whether corporate reputation or retail store equity is responsible for a greater contribution to store loyalty is of interest. It is well known that consumers retrieve information stored in memory to make plans, solve problems, or make decisions and thus, to decide whether to repurchase at a store. To explain which of the concepts more strongly predicts loyalty, it is possible to rely on the strength of the linkages of both concepts. The strength of the linkages can be explained through the degree of activation. According to some scholars (Anderson 1983; Krishnan 1996; Lei, Dawar, and Lemmink 2008), the strength of activation and the number of connections between a node and its associations increases with practice, e.g., recurring experience with the store. Thus, the possibility of the retrieval of a node is reported to be higher the more connections it has and the more often it is activated. Following this reasoning, and knowing that the strength of the links is related to the degree of repetition, practice, and recurring experience (Eckblad 1981; Anderson 1983; Malle and Horowitz 1995; Cowley and Mitchell 2003; Campbell and Keller 2003; Lei, Dawar, and Lemmink 2008), it seems logical that the concept of the store and store-node-related associations are activated and updated more frequently and that the concept of the corporation and corporate-node-related associations are used and activated less frequently. This difference may occur because the store concept and store associations are activated with each shopping experience or recommendation, whereas the corporate concept is not always addressed through spreading activation. Another reason is that the corporate concept may be less frequently activated in a direct manner, for example, if consumers do not regularly read newspaper articles or watch corporate communication spots on television. Because the store node is activated more often, it is likely that this node and its associations are retrieved more often by consumers. Thus, we propose that retail store equity, in sum, will have a stronger influence on store loyalty than corporate reputation:

- H2.** The total effect (i.e., the sum of direct and indirect effects) on store loyalty will be more positive for retail store equity than for corporate reputation.

## **4. Empirical Study**

To analyze our hypotheses, we conducted three consecutive empirical studies, including studies with cross-sectional, longitudinal, and experimental designs. First, we used a cross-sectional design on a large sample questioning do-it-yourselfers to briefly test the applied theoretical framework against alternative models. Second, we conducted a longitudinal design in two other retail sectors (fashion and grocery) to ensure generalizability and to overcome the statistical shortcomings of equilibrium and stationarity concerning the cross-sectional design. Third, we applied an experimental design to two different samples that study a real retailer and a fictional retailer to prove causality. This procedure provides a valid methodology to conduct a detailed analysis of reciprocal relationships. In the following section, we outline the aims and sample designs, measurements, method, the results, and main limitations for each study.

### *4.1. Study 1: Cross-Sectional Study*

#### *4.1.1 Aims and sample design*

To analyze our hypotheses and test our theorized model for chain store retailers, we applied a cross-sectional sample that was obtained at 30 locations of a single retailer. To develop the sample, we collaborated with a chain store retailer in the home improvement and do-it-yourself (DIY) sector. The retailer has stores located in suburban areas all over the country and uses a standardized retail brand that is centrally coordinated and communicated. Because the corporation and its stores operate under the same brand, the brand name serves as a cue for consumers to retrieve corporate and store knowledge from memory (Biehal and Sheinin 2007). To ensure the independence of the perceptions of consumers with regard to the retailer's stores, we asked the CEO and sales area managers to suggest stores with varying degrees of success in 30 different cities. We verified that specific promotional activities were not conducted during or one week prior to the data collection period. Following

Verhoef, Langerak, and Donkers (2007), we created a sector-specific quota sampling based on age and gender with the aim of interviewing 170-200 consumers per city. The sample distribution of typical DIY consumers was provided by an independent national DIY organization.

After pre-tests were administered, the survey was conducted in each city using a standardized questionnaire and face-to-face interviews over a one-week period, with approximately the same number of interviews conducted each day. Every third person who passed the interviewers in the city center and conformed to the sample was asked to participate (similar to Orth and Holancova 2004). Each respondent was first asked to list the local DIY retailers that he or she knew. Only the respondents who knew the DIY retailer and the particular store under examination participated in the survey. We collected data from a total of 5,626 respondents. Then, we applied multivariate detection of outliers according to Mahalanobis'  $D^2$  divided by the number of variables involved (Hair et al. 2006, p. 75). As 26 cases yielded values above four, we excluded these cases from further analysis. This procedure yielded a total of 5,600 respondents, with an average of 186 respondents per city. The realized sample distribution satisfied the planned quota sample (see Table B–2). Prior to the detailed analysis of confirmatory and structural modeling through Mplus, we tested for univariate normality with regard to kurtosis and skewness (Finch, West, and MacKinnon 1997) and multivariate normality using Mardia's coefficient (Vlachopoulos 2008). All values indicated that the data are normally distributed.

Age groups	Realized quota sample			Planned quota sample		
	Male %	Female %	Total %	Male %	Female %	Total %
Age 16 to 29	9.7	4.2	13.9	8.4	2.6	11.0
Age 30 to 39	16.0	5.4	21.4	16.7	5.3	22.0
Age 40 to 49	19.8	6.4	26.2	21.3	6.7	28.0
Age 50 to 64	18.2	6.4	24.6	18.2	5.8	24.0
Age over 64	10.6	3.3	13.9	11.4	3.6	15.0
Total	74.3	25.7	100.0	76.0	24.0	100.0

Table B–2:       Sample characteristics  
Source:         Own creation.

### 4.1.2 Measurement

All measurements were based on previous studies (see Table B–3) and were surveyed using seven-point Likert-type scales (from 1, indicating “strongly disagree,” to 7, indicating “strongly agree”).

Con-struct	Item		Dimen- sions	Source
Corporate Reputa- tion	CR1	Retailer X has employees who treat customers courteously.	CO	Walsh, Beatty, and Shiu (2009)
	CR2	Retailer X has employees who are concerned about customer needs.		
	CR3	Retailer X is concerned about its customers.		
	CR4	Retailer X seems like a good company to work for.	GE	
	CR5	Retailer X seems to treat its employees well.		
	CR6	Retailer X seems to have excellent leadership.		
	CR7	Retailer X tends to outperform its competitors.	RFSC	
	CR8	Retailer X seems to recognize and take advantage of market opportunities.		
	CR9	Retailer X seems to have strong prospects for future growth.		
	CR10	Retailer X seems to make an effort to create new jobs.	SER	
	CR11	Retailer X seems to be environmentally responsible.		
	CR12	Retailer X would accept reduced profits to ensure a clean environment.		
	CR13	Retailer X is a strong, reliable company.	PSQ	
	CR14	Retailer X offers innovative products.		
	CR15	Retailer X offers high-quality products and services.		
Retail Store Equity	RSE1	Store X is a strong brand.	Verhoef, Langerak, and Donkers (2007)	
	RSE2	Store X is a well-known brand.		
	RSE3	Store X is an attractive brand.		
	RSE4	Store X is a unique brand.		
Store Loyalty	SL1	I am certain that I will shop at store X again.	adopted from Sirohi, McLaugh- lin, and Wittink (1998)	
	SL2	In the future, I will make more purchases at store X than at another retailer.		
	SL3	I would recommend store X to friends and others.		
Corporate Communi- cation	CC1	Communication on company issues by retailer X is informative.	adopted from Kelly and Ste- phenson (1967)	
	CC2	I frequently see corporate communication activities from retailer X.		
	CC3	Information on what happens in the company of retailer X is believable.		
Store Attribute Percep- tions	SAP1	Store X has a large variety of products.	Chowdhury, Reardon, and Srivastava (1998)	
	SAP2	The prices at store X are fair.		
	SAP3	The service at store X is excellent.		
	SAP4	Store X is appealing.		
	SAP5	Store X is convenient.		

Notes: CO = Customer Orientation, GE = Good Employer, RFSC = Reliable and Financially Strong Company, SER = Social and Environmental Responsibility, PSQ = Product and Service Quality.

Table B–3: Measurements

Source: Own creation.



Corporate reputation was measured according to the scale of Walsh, Beatty and Shiu (2009) by means of three items for each of the five dimensions (customer orientation, good employer, reliable and financially strong company, social and environmental responsibility, and product and service quality). We measured retail store equity according to the scale of Verhoef, Langerak and Donkers (2007) with four items (strong, well-known, favorable and unique brand). Store loyalty was measured using three items according to the scale of Sirohi, McLaughlin and Wittink (1998). The scales were pre-tested by means of two consumer focus groups and quantitatively tested in one city using a questionnaire (N = 170). The quantitative pre-test provides satisfactory values for reliability and validity. We included antecedents of corporate reputation and retail store equity as instrumental variables. The inclusion of these instrumental variables is a methodological requirement in non-recursive models that analyze reciprocal relationships (Kline 2011, p. 156). Because corporate communication is seen as a core antecedent of corporate reputation (Van Riel and Fombrun 2007; Walsh and Beatty 2007), this factor was included as an instrumental variable of corporate reputation and was measured with three items (adopted from Kelly and Stephenson 1967). Because store attributes are seen as the main antecedents of retail store equity (Jinfeng and Zhilong 2009; Ailawadi and Keller 2004; Yoo, Donthu, and Lee 2000), we included perceptions of store attributes as an instrumental variable and measured it using five items (according to Chowdhury, Reardon, and Srivastava 1998).

We also included some covariates in the study. As the sector-specific sample structure does not follow the general distribution of the basic population and as consumer behavior might be influenced by gender (0 = male, 1 = female) and age (Schenk, Löffler, and Rauh 2007), we controlled for both variables. We also included a variable that describes DIY ability as a covariate (self-reported on a four-point scale from beginner to expert) based on the suggestion of Pan and Zinkhan (2006), who posit that personality traits, such as self confidence, might be important in influencing store patronage. Furthermore, we included competitive intensity as a covariate, following Sloot, Verhoef, and Franses (2005). We measured this covariate as the number of competitors within a 2-mile radius, which was chosen according to information from the sales managers on relevant competitor distances in the retail sector, applying a median split (Gauri,

Sudhir, and Talukdar (2008), with 0 = two or fewer competitors and 1 = more than two competitors, according to Talukdar, Gauri, and Grewal (2010)). Finally, we included store familiarity, measured with a single item (according to Inman, Winer, and Ferraro (2009)), because it might influence store loyalty.

#### 4.1.3 Method

To reduce the complexity of the subsequent model (Steenkamp, Batra, and Alden 2003), we used item parceling for corporate reputation. Rather than using five different latent constructs that each represent one dimension of corporate reputation, we used one item for each dimension, and this method yielded one latent construct with five items. The item parceling was performed by averaging the item scores (Bandalos 2002) for each dimension of corporate reputation. Therefore, prior to testing the overall measurement model in conjunction with corporate reputation in a confirmatory factor analysis (CFA) using parcels, we tested the original measurement scale of corporate reputation (i.e., the five dimensions) for reliability and validity (see Table B–4).

Construct	Item	Dimension	MV/Std.	FL	KMO	ItTC	$\alpha$	CR	$\lambda$
Corporate Reputation	CR1	CO	5.0/1.3	.876	.752	.844	.938	.939	.880
	CR2		4.8/1.3	.961		.904			.948
	CR3		4.8/1.3	.904		.865			.914
	CR4	GE	4.4/1.2	.905	.747	.852	.924	.926	.910
	CR5		4.4/1.2	.944		.878			.928
	CR6		4.4/1.2	.839		.805			.856
	CR7	RFSC	4.4/1.4	.755	.720	.708	.876	.880	.789
	CR8		4.6/1.3	.921		.813			.883
	CR9		4.6/1.3	.849		.769			.862
	CR10	SER	4.3/1.3	.801	.715	.703	.836	.831	.861
	CR11		4.2/1.3	.880		.752			.833
	CR12		3.5/1.6	.731		.666			.705
	CR13	PSQ	4.7/1.3	.815	.744	.759	.891	.892	.850
	CR14		4.6/1.3	.888		.810			.861
	CR15		4.7/1.4	.865		.794			.859

Confirmatory model fit: CFI .975; TLI .967; RMSEA .065; SRMR .029;  $\chi^2(80) = 1,946.024$ .

Notes: CO = Customer Orientation, GE = Good Employer, RFSC = Reliable and Financially Strong Company, SER = Social and Environmental Responsibility, PSQ = Product and Service Quality; MV/Std. = Mean values and standard deviations, FL = Factor loading (exploratory factor analysis), KMO = Kaiser-Meyer-Olkin criterion ( $\geq .5$ ), ItTC = Item-to-Total Correlation ( $\geq .5$ ),  $\alpha$  = Cronbach's alpha ( $\geq .7$ ), CR = Composite reliability ( $\geq .6$ ),  $\lambda$  = Standardized factor loadings (confirmatory factor analysis) ( $\geq .5$ ).

Table B–4: Reliability and validity of corporate reputation

Source: Own creation.

To confirm the reliability of measurements, we ensured that the corrected item-to-total correlation was above .5 (Hair et al. 2006, p. 137). To assess construct reliability, Cronbach's alpha and composite reliability were computed. These values exceeded the recommended thresholds of .7 (Nunnally 1978, p. 245) and .6 (Bagozzi and Yi 1988, p. 80), respectively. With respect to validity, face validity was assessed by means of pre-tests. For construct validity, all of the factor loadings of the CFA were above .5 (Hair et al. 2006, p. 777), and the average variance extracted (AVE) values with a threshold of .5 provided support for convergent validity (Bagozzi and Yi 1988, p. 80).

Constructs	AVE	CO	GE	RFSC	SER
Customer Orientation (CO)	.837	-			
Good Employer (GE)	.806	.741	-		
Reliable and Financially Strong Company (RFSC)	.709	.752 <sup>a</sup>	.774 <sup>a</sup>	-	
Social and Environmental Responsibility (SER)	.621	.615	.887 <sup>a</sup>	.872 <sup>a</sup>	-
Product and Service Quality (PSQ)	.734	.857 <sup>a</sup>	.752 <sup>a</sup>	.972 <sup>a</sup>	.835 <sup>a</sup>
Confirmatory model fit: CFI .975; TLI .967; RMSEA .065; SRMR .029; $\chi^2(80) = 1,946.024$ .					
Model comparisons with the confirmatory models that have fixed correlations:					
RFSC with CO: CFI .909; TLI .882; RMSEA .122; SRMR .072; $\chi^2(81) = 6843.116$ ; $\Delta\chi^2(1) = 4,897.092$ .					
RFSC with GE: CFI .923; TLI .900; RMSEA .112; SRMR .047; $\chi^2(81) = 5789.950$ ; $\Delta\chi^2(1) = 3,843.926$ .					
SER with CO: CFI .947; TLI .932; RMSEA .093; SRMR .040; $\chi^2(81) = 4003.854$ ; $\Delta\chi^2(1) = 2,057.830$ .					
SER with RFSC: CFI .947; TLI .931; RMSEA .093; SRMR .037; $\chi^2(81) = 4033.713$ ; $\Delta\chi^2(1) = 2,087.689$ .					
PSQ with CO: CFI .919; TLI .895; RMSEA .115; SRMR .062; $\chi^2(81) = 6086.436$ ; $\Delta\chi^2(1) = 4,140.412$ .					
PSQ with GE: CFI .921; TLI .898; RMSEA .113; SRMR .050; $\chi^2(81) = 5918.583$ ; $\Delta\chi^2(1) = 3,972.559$ .					
PSQ with RFSC: CFI .949; TLI .934; RMSEA .091; SRMR .032; $\chi^2(81) = 3843.388$ ; $\Delta\chi^2(1) = 1,897.364$ .					
PSQ with SER: CFI .948; TLI .933; RMSEA .092; SRMR .038; $\chi^2(81) = 3909.966$ ; $\Delta\chi^2(1) = 1,963.942$ .					
Notes: AVE = average variance extracted ( $\geq .5$ ); values in italics represent squared correlations between constructs.					
<sup>a</sup> For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked the discriminant validity using a chi-square difference test by following the approach of Anderson and Gerbing (1988). This procedure yielded satisfactory results because the nested model (the nested model is the more restrictive model with more degrees of freedom due to successively fixed correlations at value one) fits significantly more poorly ( $p < .001$ ) than the comparison model. Thus, discriminant validity is assured.					

Table B-5: Discriminant validity of corporate reputation

Source: Own creation.

We also tested the five latent constructs for discriminant validity (Fornell and Larcker 1981, p. 46). As some squared correlations exceeded the AVE values of the two respective constructs (see Table B-5), we additionally verified the discriminant validity using a chi-square difference test following the procedure of Anderson and Gerbing (1988, p. 416). For each violated case, we alternately compared the fit value of the proposed comparison model with the fit values

of a nested model. The nested model is a more restrictive model with more degrees of freedom due to a fixed correlation at value one between the two involved constructs. As the fits of all computed nested models were significantly poorer ( $p < .001$ ) than that of the comparison model, discriminant validity can be assured. The fit values for this confirmatory model were satisfactory (CFI .975; TLI .967; RMSEA .065; SRMR .029;  $\chi^2(80) = 1,946.024$ ) despite the  $\chi^2/df$  value (Hinkin 1995). As the latter fit value is dependent on the sample size, a value beyond the recommended thresholds can be considered acceptable (Wheaton 1987).

Construct	Item	MV/Std.	FL	KMO	ItTC	$\alpha$	CR	$\lambda$
Corporate Reputation (with parcels)	CO	4.9/1.2	.759		.718			.776
	GE	4.4/1.1	.840		.792			.813
	RFSC	4.5/1.2	.831	.878	.782	.908	.909	.837
	SER	4.0/1.2	.788		.742			.777
	PSQ	4.7/1.2	.868		.816			.880
Retail Store Equity	RSE1	5.0/1.4	.776		.634			.752
	RSE2	5.8/1.3	.543	.717	.517	.754	.760	.555
	RSE3	4.8/1.4	.812		.603			.809
	RSE4 <sup>a</sup>	3.8/1.7	.480		-			-
Store Loyalty	SL1	5.4/1.7	.758		.732			.753
	SL2	4.1/1.9	.806	.721	.838	.891	.861	.795
	SL3	4.5/1.8	.895		.801			.908
Corporate Communication	CC1	5.0/1.5	.776		.695			.764
	CC2	4.4/1.7	.822	.729	.725	.845	.847	.807
	CC3	4.7/1.6	.818		.723			.841
Store Attribute Perceptions	SAP1	5.1/1.3	.755		.688			.758
	SAP2	5.2/1.3	.650		.597			.661
	SAP3	4.7/1.4	.741	.863	.672	.856	.859	.752
	SAP4	4.9/1.3	.809		.730			.795
	SAP5	5.2/1.3	.737		.671			.731

Confirmatory model fit: CFI .964; TLI .956; RMSEA .054; SRMR .030;  $\chi^2(142) = 2,456.873$ .

Notes: CO = Customer Orientation, GE = Good Employer, RFSC = Reliable and Financially Strong Company, SER = Social and Environmental Responsibility, PSQ = Product and Service Quality; MV/Std. = Mean values and standard deviations, FL = Factor loading (exploratory factor analysis), KMO = Kaiser-Meyer-Olkin criterion ( $\geq .5$ ), ItTC = Item-to-Total Correlation ( $\geq .5$ ),  $\alpha$  = Cronbach's alpha ( $\geq .7$ ), CR = Composite reliability ( $\geq .6$ ),  $\lambda$  = Standardized factor loadings (confirmatory factor analysis) ( $\geq .5$ ).

<sup>a</sup> Item deleted because of a low Item-to-Total Correlation.

Table B-6: Reliability and validity of measurements

Source: Own creation.

After testing the corporate reputation scale separately, we tested all involved measurement scales of the overall measurement model, including the new five-item corporate reputation scale, for reliability and validity (see Table B-6 for

reliability and validity as well as Table B–7 for discriminant validity). All values are satisfactory, except a small item-to-total correlation for the uniqueness item (retail store equity), and we excluded this item from further analysis. The fit values for the overall confirmatory model were satisfactory (CFI .964; TLI .956; RMSEA .054; SRMR .030;  $\chi^2(142) = 2,456.873$ ).

Constructs	AVE	CR	RSE	SL	CC
Corporate Reputation (CR)	.667	-			
Retail Store Equity (RSE)	.523	.381	-		
Store Loyalty (SL)	.676	.468	.417	-	
Corporate Communication (CC)	.650	.534	.305	.425	-
Store Attribute Perceptions (SAP)	.550	.532	.590 <sup>a</sup>	.524	.396

Confirmatory model fit: CFI .964; TLI .956; RMSEA .054; SRMR .030;  $\chi^2(142) = 2,456.873$ .

Model comparison with the confirmatory model that has fixed correlation:

RSE with SAP: CFI .945; TLI .934; RMSEA .066; SRMR .035;  $\chi^2(143) = 3,653.916$ ;  $\Delta\chi^2(1) = 1,197.043$ .

Notes: AVE = average variance extracted ( $\geq .5$ ); values in italics represent squared correlations between constructs.

<sup>a</sup> For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked the discriminant validity using a chi-square difference test by following the approach of Anderson and Gerbing (1988). This procedure yielded satisfactory results because the nested model (the nested model is the more restrictive model with more degrees of freedom due to successively fixed correlations at value one) fits significantly more poorly ( $p < .001$ ) than the comparison model. Thus, discriminant validity is assured.

Table B–7: Discriminant validity

Source: Own creation.

We handled common-method bias a priori by employing an appropriate questionnaire design, including appropriate question order, and a posteriori by calculating a single-factor test using confirmatory factor analysis (Podsakoff et al. 2003). The model with all items loading on a single factor (CFI .773; TLI .744; RMSEA .131; SRMR .072;  $\chi^2(152) = 14,663.022$ ) showed significantly worsened fit values in comparison to our model ( $\Delta\chi^2(10) = 12206.149$ ,  $p < .000$ ). We further applied the marker variable technique (Lindell and Whitney 2001) following the latent variable approach of Williams, Hartman, and Cavazotte (2010). We used a variable named job (e.g., self-employed worker, civil servant, employee, laborer, or unemployed) because this variable is theoretically unrelated to the constructs of our model (similar to Rindfleisch, Burroughs, and Wong 2009). The results of the first phase (Table B–8) indicate that the correlations between the latent constructs are not biased through the marker variable (Method-U vs. Method-R).

Model	$\chi^2$	df	CFI	TLI	RMSEA	SRMR
CFA	2,486.732	156	.964	.956	.052	.029
Baseline	2,565.578	161	.962	.956	.052	.037
Method-C	2,528.606	160	.963	.956	.051	.030
Method-U	2,449.628	142	.964	.952	.054	.029
Method-R	2,450.001	152	.964	.955	.052	.029
Chi-square differences of model comparison tests:						
$\Delta$ Models	$\Delta\chi^2$	$\Delta$ df	p			
Baseline with Method-C	36.972	1	***			
Method-C with Method-U	78.978	18	***			
Method-U with Method-R	.373	10	ns			
Notes: *** p < .001; ns = not significant.						

Table B–8: Results of model comparisons (phase I)  
Source: Own creation.

The results of the second phase (Table B–9) show that the amount of method variance, associated with the measurement of the substantive latent constructs, is less than 1 percent (between .350 and .946 percent). Because the impact of method variance in the study of Williams, Hartman, and Cavazotte (2010) was above 12.5 percent, we found that the present results of below one percent could be decreased. The results of the third phase (Table B–10) indicate that marker-based method variance has a very low impact on construct correlations.

Latent variable	Reliability baseline model	Decomposed reliability from method-U model		
	Total reliability	Substantive reliability	Method reliability	% reliability marker variable
Store Loyalty	.861	.855	.006	.692
Retail Store Equity	.753	.748	.005	.664
Corporate Reputation	.909	.904	.005	.550
Store Attribute Perceptions	.858	.854	.003	.350
Corporate Communication	.846	.838	.008	.946

Table B–9: Results of the reliability decomposition (phase II)  
Source: Own creation.

We tested whether structural coefficients change due to the presence of a marker variable. This approach was similar to the test for changes in correlation (Phase I). We calculated a baseline model constraining the effects of the marker variable to zero. A second model allowed the effects of the marker variable to be freely estimated. The chi-square and degrees of freedom of this model were compared with the chi-square and degrees of freedom of a third

model. The third model was calculated like the second model (effects of marker variable are present), fixing the structural effects between the substantive constructs of our model to those values of the baseline model. The results indicate that the structural coefficients are not affected by common-method bias ( $\Delta\chi^2(6) = .194$ , no significant difference). In summary, we concluded that common-method bias was not a major issue in our study.

Construct correlations	CFA	Baseline	Method-U	Method-S (.05)	Method-S (.01)
RSE with SL	.646	.646	.643	.643	.643
SAP with SL	.724	.724	.721	.722	.722
SAP with RSE	.768	.768	.766	.766	.766
CR with SL	.684	.684	.681	.681	.681
CR with RSE	.617	.617	.613	.613	.614
CR with SI	.730	.730	.726	.727	.727
CC with SL	.652	.652	.649	.649	.649
CC with RSE	.552	.552	.548	.549	.549
CC with SI	.629	.629	.625	.625	.625
CC with CR	.731	.731	.728	.728	.728
Job with RSE	.087	.000	.000	.000	.000
Job with CR	.088	.000	.000	.000	.000
Job with SI	.108	.000	.000	.000	.000
Job with CC	.115	.000	.000	.000	.000
Job with SL	.100	.000	.000	.000	.000

Notes: CR = Corporate Reputation, RSE = Retail Store Equity, SL = Store Loyalty, CC = Corporate Communication, SAP = Store Attribute Perceptions.

Table B–10: Results of the sensitivity analyses (phase III)

Source: Own creation.

As the data have a hierarchical structure (consumers are nested within the 30 stores), we tested for the requirements of multi-level modeling (Wagner et al. 2006) and found small intra-class correlations for all items (.034). As the variance of our dependent variable was not significant between the stores, there is no significant variation in consumer perceptions between stores. Therefore, we did not test the hypotheses with multi-level modeling, as no additional explanation of variance can be given.

Prior to testing the hypotheses, we calculated three rival models (see Table B–11). In consideration of schema theoretical reasoning and schema activation (Malle and Horowitz 1995), retail store equity and corporate reputation may have a unidirectional relationship. However, applying corporate reputation as an antecedent of retail store equity and treating retail store equity as a mediator

yielded significantly poorer fit values in comparison with those of the proposed model (CFI .937; TLI .926; RMSEA .058; SRMR .046;  $\chi^2(226) = 4,445.446$ ;  $\Delta\chi^2(2) = 860.544$ ,  $p < .001$ ). In addition, treating corporate reputation as a mediator and applying retail store equity as an antecedent of corporate reputation significantly and negatively affected the fit values (CFI .944; TLI .934; RMSEA .054; SRMR .034;  $\chi^2(226) = 3,947.387$ ;  $\Delta\chi^2(2) = 362.485$ ,  $p < .001$ ). We further calculated a nested model without any effects between retail store equity and corporate reputation and therefore analyzed the model without mediating effects and thus, only included the two direct paths to store loyalty. The fit of this third rival model was also significantly poorer than that of our hypothesized proposed model (CFI .936; TLI .925; RMSEA .058; SRMR .048;  $\chi^2(227) = 4,508.744$ ;  $\Delta\chi^2(3) = 923.842$ ,  $p < .001$ ). These results therefore support the proposed theoretical model.

<b>N = 5,600</b>	<b>Rival Model 1</b>	<b>Rival Model 2</b>	<b>Rival Model 3</b>	<b>Proposed Model</b>
Effects	Structural coefficients p	Structural coefficients p	Structural coefficients p	Structural coefficients p
CR → RSE	.142 ***	- -	- -	.274 ***
RSE → CR	- -	.357 ***	- -	.635 ***
CR → SL	.359 ***	.339 ***	.473 ***	.369 ***
RSE → SL	.358 ***	.358 ***	.461 ***	.338 ***
CC → CR	.787 ***	.552 ***	.790 ***	.375 ***
SAP → RSE	.703 ***	.827 ***	.801 ***	.585 ***
<i>Covariates:</i>				
Gender	.012 ns	.012 ns	.012 ns	.012 ns
Age	-.015 ns	-.014 ns	-.015 ns	-.015 ns
DIY abilities	-.029 **	-.028 **	-.029 **	-.028 **
Store familiarity	.387 ***	.383 ***	.386 ***	.379 ***
Competitive intensity	.004 ns	.003 ns	.003 ns	.003 ns
<i>R<sup>2</sup> Store loyalty</i>	.696 ***	.703 ***	.695 ***	.706 ***
<i>Total effects of RSE on SL</i>	.358 ***	.479 ***	.361 ***	.692 ***
<i>Total effects of CR on SL</i>	.410 ***	.339 ***	.373 ***	.559 ***
Structural model fits:				
Rival model 1: CFI .937; TLI .926; RMSEA .058; SRMR .046; $\chi^2(226) = 4,445.446$ ; $\Delta\chi^2(2) = 860.544$ .				
Rival model 2: CFI .934; TLI .934; RMSEA .054; SRMR .034; $\chi^2(226) = 3,947.387$ ; $\Delta\chi^2(2) = 362.485$ .				
Rival model 3: CFI .936; TLI .925; RMSEA .058; SRMR .048; $\chi^2(227) = 4,508.744$ ; $\Delta\chi^2(3) = 923.842$ .				
Proposed model: CFI .950; TLI .940; RMSEA .052; SRMR .030; $\chi^2(224) = 3,584.902$ .				
Notes: CR = Corporate Reputation, RSE = Retail Store Equity, SL = Store Loyalty, CC = Corporate Communication, SAP = Store Attribute Perceptions; *** $p < .001$ , ** $p < .01$ , ns = not significant; standardized coefficients are shown.				

Table B–11: Results of the rival models and hypotheses testing

Source: Own creation.



To test the hypotheses, we applied non-recursive structural equation modeling (SEM) using Mplus and including the previously addressed instrumental variables as well as a required disturbance correlation between the two constructs that were assumed to have a reciprocal relationship (Kline 2011; Frone, Russell, and Cooper 1994). A test of exogeneity of the instrumental variables (Frone, Russell, and Cooper 1994; Antonakis et al. 2010) revealed that perceptions of store attributes are exogenous and that corporate communication may be endogenous (Hausman 1978). However, the structure of the path estimates remained the same, thus still supporting our hypotheses (see Appendix 1 for details). The fit values of the proposed model were all satisfactory (CFI .950; TLI .940; RMSEA .052; SRMR .030;  $\chi^2(224) = 3,584.902$ ).

#### 4.1.4 Results and limitations

With regard to the assumption of reciprocity, the effect of corporate reputation on retail store equity is positive and significant ( $\beta = .274$ ,  $p < .001$ ), and the effect of retail store equity on corporate reputation is also positive and significant ( $\beta = .635$ ,  $p < .001$ ). Thus, H1 is supported (see Table B–11). The results also support H2, which states that retail store equity has a stronger positive influence on store loyalty than corporate reputation. Although the effects of corporate reputation ( $\beta = .369$ ,  $p < .001$ ) and retail store equity ( $\beta = .338$ ,  $p < .001$ ) on store loyalty are equally positive and significant, the total sum of effects that influence store loyalty is greater for retail store equity ( $\beta = .692$ ,  $p < .001$ ) than for corporate reputation ( $\beta = .559$ ,  $p < .001$ ). We tested whether these effects differ significantly by constraining the respective effects to be estimated equally and calculating a chi-square difference test. The test showed that retail store equity has the strongest overall effect on store loyalty ( $\Delta\chi^2(2) = 69.112$ ,  $p < .001$ ). Thus, H2 is supported. With respect to the covariates, DIY ability ( $p < .01$ ) has a significant negative effect on store loyalty, whereas store familiarity ( $p < .001$ ) has a significant positive effect.

We must mention two crucial limitations of this cross-sectional study. First, because the data refer to only one retailer and one retail sector, the generalization of the results may be limited. However, an analysis of reciprocity that is based on 30 locations provides a certain degree of stability, especially when it includes perception differences in store brand equities in local markets. Se-

cond, an analysis of reciprocal effects in cross-sectional SEM might be inappropriate in terms of equilibrium and stationarity (Kaplan, Harik, and Hotchkiss 2001), i.e., the values of the estimates regarding the effects of the reciprocal relationship between the two constructs are not dependent on any time point of the data collection, and the “structural equation for a variable is not different at the two points of measurement” (Kenny 1975, p. 890). Thus, there are advantages in using a panel design to analyze reciprocal effects (Kline 2011, p. 109).

## *4.2. Study 2: Longitudinal Study*

### *4.2.1 Aims and sample design*

To address the shortcomings of the cross-sectional study, we conducted a longitudinal study, specifically a cross-lagged analysis, to test for reciprocity (H1) and to determine for whether retail store equity has a stronger effect than corporate reputation on store loyalty (H2). Surveying the same respondents at three points in time is a more suitable method of testing reciprocal relationships (Menard 2002) compared with a cross-sectional analysis. To make generalizations regarding the reciprocal relationship of corporate reputation and retail store equity, we chose two other retail sectors (fashion and grocery). We also expanded the consumer evaluations by including the associations of several chain store retailers for each retail sector but analyzing data on only one retailer for each sector.

To develop the two samples, we used quota sampling (national distribution of population according to age and gender) for 200-230 consumers per retail sector. The sampling was conducted in three waves in one middle-sized city over a period of eight months using a standardized questionnaire and face-to-face interviews at the respondents' homes. All trained interviewers had to recruit the same number of participants across genders and age groups for both the fashion and grocery samples (Patterson and Smith 2003) to reduce the possible selection biases of the interviewers. We used a gift coupon lottery as incentive for participation, following Ganesh et al. (2010). Each respondent was first asked to list the local fashion or grocery retailers he or she knows. Respondents were then instructed to name three retailers from which they frequently purchase either apparel or groceries. In the first wave, we randomly

chose one of the three mentioned retailers for the respondents to evaluate in all the subsequent waves. We included the respondents who participated in all three waves in the analysis; 82.9 percent of the fashion sample respondents and 84.6 percent of the grocery sample respondents completed all the data collection waves. This procedure resulted in a total of 609 observations (203 respondents per wave) for the fashion sample and a total of 627 observations (209 respondents per wave) for the grocery sector. Using the aforementioned procedure to identify outliers (study one), we found no striking cases in either sample. With respect to the intended quotas (see Table B–12), the under-25 age group is slightly overrepresented in our two samples, whereas the over-50 age group is slightly underrepresented. Overall, thirty fashion retailers with different fashion orientations and eleven grocery retailers with different retail formats were assessed for their respective samples; approximately half of the responses were related to diversified retailers and half to non-diversified retailers in each sample.

Age groups	Realized quota sample			Planned quota sample		
	Male %	Female %	Total %	Male %	Female %	Total %
Fashion sector (N = 203)						
Age 15 to 24	11.3	9.9	21.2	6.9	6.6	13.5
Age 25 to 49	23.6	19.2	42.8	21.5	20.7	42.2
Age 50 to 64	8.9	8.4	17.3	10.6	10.7	21.3
Age over 64	5.4	13.3	18.7	9.6	13.4	23.0
Total	49.2	50.8	100.0	48.6	51.4	100.0
Grocery sector (N = 209)						
Age 15 to 24	12.3	10.1	22.4	6.9	6.6	13.5
Age 25 to 49	23.1	20.1	43.2	21.5	20.7	42.2
Age 50 to 64	7.2	8.1	15.3	10.6	10.7	21.3
Age over 64	6.2	12.9	19.1	9.6	13.4	23.0
Total	48.8	51.2	100.0	48.6	51.4	100.0

Table B–12:     Sample characteristics  
Source:         Own creation.

Tests for normality found that the fashion data are normally distributed. For the grocery data, however, we found one variable that shows only a mediocre value for kurtosis at one time point (the first item of store loyalty at time point one). Overall, we concluded that both data samples could be treated as normally distributed.

#### 4.2.2 *Measurement and method*

We used the same measurements and scales that were used in the first study to measure corporate reputation, retail store equity, and store loyalty. As in the first study, we began by testing the corporate reputation dimensions for both the fashion and grocery samples and again used item parceling to reduce complexity in this longitudinal design. The values for reliability and validity were satisfactory for both the fashion and grocery sectors (see Table B–13). With regard to discriminant validity, we separately tested each time point with the corresponding five corporate reputation dimensions for each of the samples (see Table B–14). In situations in which the Fornell and Larcker criterion (1981) was violated, we calculated a chi-square difference test that was similar to the procedure used in the first study. In sum, we calculated five difference tests, all of which indicated that the constructs in all three waves are discriminating for both samples.

Following these initial tests, for the corporate reputation dimensions, we determined the reliability and validity of the measurements of the two overall models (corporate reputation with item parcels, retail store equity, and store loyalty; see Table B–15) for both the fashion and grocery samples. The uniqueness item of the retail store equity construct had to be excluded from the analysis in both samples due to a low item-to-total correlation. All other values show satisfactory values, except that the AVE value for store loyalty at time point one in the grocery sector was below .5. We chose to retain this construct in the model for two reasons. First, the chi-square test detected that a model without this construct yielded a significantly poorer fit than the model with the construct (CFI .944; TLI .930; RMSEA .065; SRMR .060;  $\chi^2(350) = 654.916$ ,  $\Delta\chi^2(76) = 99.157$ ,  $p < .05$ ). Second, this choice enabled us to compare the results of the fashion and grocery samples with regard to the effects on loyalty.

Item	Time point 1			Time point 2			Time point 3																
	MV/Std.	FL	KMO	ITC	$\alpha$	CR	$\lambda$	MV/Std.	FL	KMO	ITC	$\alpha$	CR	$\lambda$									
Fashion sector																							
CR1	5.8/1.1	.884	.853	.741	.917	.939	.944	.891	5.8/1.1	.871	.837	.933	.937	.874	5.7/1.1	.881	.844	.888					
CR2	5.6/1.3	.976	.741	.917	.939	.944	.944	.965	5.7/1.2	.960	.749	.900	.933	.951	5.7/1.3	.971	.738	.905	.936	.962	.877		
CR3	5.6/1.3	.892	.862	.901	5.6/1.2	.894	.856	.901	5.6/1.2	.894	.856	.857	.925	.927	.915	5.6/1.2	.900	.832	.827	.908	.907	.868	.871
CR4	5.1/1.3	.885	.828	.890	5.2/1.2	.912	.857	.890	5.2/1.2	.912	.857	.857	.925	.927	.915	5.1/1.2	.900	.832	.827	.908	.907	.868	.871
CR5	5.1/1.2	.959	.729	.879	.913	.918	.918	.926	5.2/1.2	.932	.754	.873	.925	.927	.915	5.2/1.2	.896	.752	.827	.908	.907	.868	.871
CR6	5.2/1.3	.810	.776	.850	5.3/1.2	.850	.814	.850	5.3/1.2	.850	.814	.814	.857	.857	.864	5.2/1.2	.832	.789	.789	.871			
CR7	5.2/1.4	.790	.742	.860	5.3/1.3	.787	.752	.860	5.3/1.3	.787	.752	.752	.903	.907	.818	5.3/1.3	.804	.762	.762				
CR8	5.3/1.3	.984	.690	.862	.887	.892	.892	.909	5.5/1.2	.941	.729	.855	.903	.907	.920	5.4/1.2	.915	.741	.837	.902	.904	.882	
CR9	5.2/1.3	.786	.738	.800	5.4/1.2	.892	.823	.800	5.4/1.2	.892	.823	.823	.903	.907	.893	5.1/1.2	.892	.822	.822				
CR10	4.4/1.3	.740	.680	.823	4.7/1.3	.764	.705	.823	4.7/1.3	.764	.705	.705	.836	.866	.872	4.6/1.3	.990	.678	.853	.870	.880	.924	
CR11	4.3/1.3	.911	.714	.796	.855	.856	.856	.856	4.4/1.4	.966	.695	.836	.866	.872	.912	4.6/1.3	.990	.678	.853	.870	.880	.924	
CR12	3.9/1.6	.815	.736	.784	4.0/1.6	.781	.727	.784	4.0/1.6	.781	.727	.727	.836	.866	.872	.912	4.6/1.3	.990	.678	.853	.870	.880	.924
CR13	5.2/1.3	.776	.682	.834	5.3/1.2	.763	.651	.834	5.3/1.2	.763	.651	.651	.836	.866	.872	.912	4.6/1.3	.990	.678	.853	.870	.880	.924
CR14	5.4/1.3	.881	.703	.815	5.4/1.2	.839	.700	.815	5.4/1.2	.839	.700	.694	.802	.805	.815	5.3/1.2	.835	.731	.740	.855	.855	.801	.788
CR15	5.5/1.3	.701	.634	.706	5.5/1.3	.681	.603	.706	5.5/1.3	.681	.603	.603	.802	.805	.715	5.4/1.3	.776	.703	.703				
Grocery sector																							
CR1	5.6/1.2	.819	.783	.827	5.6/1.1	.791	.752	.827	5.6/1.1	.791	.752	.752	.902	.909	.916	5.6/1.2	.770	.721	.721				
CR2	5.3/1.3	.951	.735	.873	.914	.919	.919	.940	5.3/1.2	.923	.735	.844	.902	.909	.916	5.3/1.3	.900	.730	.808	.882	.885	.880	
CR3	5.3/1.3	.883	.830	.890	5.3/1.2	.893	.826	.890	5.3/1.2	.893	.826	.826	.826	.826	.826	.826	.826	.826	.826				
CR4	4.8/1.4	.923	.871	.926	4.7/1.3	.895	.855	.926	4.7/1.3	.895	.855	.855	.855	.855	.855	.855	.855	.855	.855				
CR5	4.7/1.4	.956	.739	.893	.928	.933	.933	.949	4.8/1.3	.953	.756	.895	.934	.936	.936	.936	.936	.936	.936				
CR6	4.8/1.3	.825	.799	.835	4.8/1.3	.881	.844	.835	4.8/1.3	.881	.844	.844	.844	.844	.844	.844	.844	.844	.844				
CR7	5.1/1.3	.741	.699	.781	5.0/1.3	.803	.754	.781	5.0/1.3	.803	.754	.754	.754	.754	.754	.754	.754	.754	.754				
CR8	5.2/1.3	.991	.674	.849	.871	.881	.881	.937	5.2/1.2	.944	.724	.844	.892	.895	.895	.895	.895	.895	.895				
CR9	5.2/1.2	.779	.722	.813	5.1/1.2	.826	.768	.813	5.1/1.2	.826	.768	.768	.768	.768	.768	.768	.768	.768	.768				
CR10	4.5/1.3	.680	.597	.707	4.6/1.3	.712	.626	.707	4.6/1.3	.712	.626	.626	.626	.626	.626	.626	.626	.626	.626				
CR11	4.4/1.3	.820	.701	.687	.796	.804	.804	.807	4.4/1.3	.812	.711	.691	.810	.810	.810	.810	.810	.810	.810				
CR12	3.6/1.6	.776	.660	.765	3.8/1.5	.784	.672	.765	3.8/1.5	.784	.672	.672	.672	.672	.672	.672	.672	.672	.672				
CR13	5.2/1.2	.493	.447	.574	5.3/1.1	.618	.567	.574	5.3/1.1	.618	.567	.567	.567	.567	.567	.567	.567	.567	.567				
CR14	5.0/1.4	.838	.634	.668	.759	.789	.789	.801	5.1/1.3	.850	.680	.723	.817	.833	.846	5.0/1.3	.779	.690	.637	.773	.775	.737	
CR15	5.2/1.3	.833	.672	.824	5.2/1.2	.859	.729	.824	5.2/1.2	.859	.729	.729	.729	.729	.729	.729	.729	.729	.729				

Notes: MV/Std. = Mean values and standard deviations, FL = Factor loadings (exploratory factor analysis), KMO = Kaiser-Meyer-Olkin criterion ( $\geq .5$ ), ITC = Item-to-Total Correlation ( $\geq .3$ ),  $\alpha$  = Cronbach's alpha ( $\geq .7$ ), CR = Composite reliability ( $\geq .6$ ),  $\lambda$  = Standardized factor loadings (confirmatory factor analysis) ( $\geq .5$ ).

Table B-13: Reliability and validity of corporate reputation

Source: Own creation.

Constructs	AVE	CO (1)	GE (1)	RFSC (1)	SER (1)	CO (2)	GE (2)	RFSC (2)	SER (2)	CO (3)	GE (3)	RFSC (3)	SER (3)
Fashion sector													
CO (1)	.850	-											
GE (1)	.788	.454	-										
RFSC (1)	.734	.309	.587	-									
SER (1)	.666	.230	.523	.430	-								
PSQ (1)	.615	.456	.599	.696 <sup>a</sup>	.563								
Confirmatory model fit: CFI .914; TLI .887; RMSEA .119; SRMR .060; $\chi^2(80) = 307.871$ .													
Model comparison with the confirmatory model that have fixed correlations:													
Correlation PSQ with RFSC fixed: CFI .898; TLI .868; RMSEA .129; SRMR .063; $\chi^2(81) = 353.867$ ; $\Delta\chi^2(1) = 45.996$ .													
CO (2)	.833					-							
GE (2)	.809					.421	-						
RFSC (2)	.765					.206	.465	-					
SER (2)	.696					.187	.442	.412	-				
PSQ (2)	.580					.386	.661 <sup>a</sup>	.590 <sup>a</sup>	.576				
Confirmatory model fit: CFI .924; TLI .901; RMSEA .111; SRMR .062; $\chi^2(80) = 278.965$ .													
Model comparisons with the confirmatory models that have fixed correlations:													
PSQ with GE: CFI .907; TLI .880; RMSEA .122; SRMR .067; $\chi^2(81) = 325.153$ ; $\Delta\chi^2(1) = 46.188$ .													
PSQ with RFSC: CFI .901; TLI .872; RMSEA .126; SRMR .073; $\chi^2(81) = 341.212$ ; $\Delta\chi^2(1) = 62.247$ .													
CO (3)	.831									-			
GE (3)	.766									.408	-		
RFSC (3)	.759									.235	.604	-	
SER (3)	.712									.173	.376	.379	-
PSQ (3)	.664									.410	.614	.637	.471
Confirmatory model fit: CFI .938; TLI .919; RMSEA .100; SRMR .057; $\chi^2(80) = 241.171$ .													
Grocery sector													
CO (1)	.792	-											
GE (1)	.823	.343	-										
RFSC (1)	.713	.279	.271	-									
SER (1)	.581	.332	.412	.245	-								
PSQ (1)	.564	.490	.398	.259	.388								
Confirmatory model fit: CFI .921; TLI .897; RMSEA .103; SRMR .074; $\chi^2(80) = 257.870$ .													

(Table to be continued)

Table B-14 (continued)

CO (2)	.768	-	
GE (2)	.830	.487	-
RFSC (2)	.741	.346	.386
SER (2)	.588	.342	.438
PSQ (2)	.631	.558	.445
Confirmatory model fit: CFI .975; TLI .967; RMSEA .058; SRMR .049; $\chi^2(80) = 136.256$ .			
CO (3)	.721	-	
GE (3)	.775	.452	-
RFSC (3)	.645	.442	.483
SER (3)	.603	.449	.585
PSQ (3)	.536	.681 <sup>a</sup>	.469
Confirmatory model fit: CFI .959; TLI .947; RMSEA .071; SRMR .041; $\chi^2(80) = 163.103$ .			
Model comparisons with the confirmatory models that have fixed correlations:			
PSQ with CO: CFI .945; TLI .928; RMSEA .082; SRMR .047; $\chi^2(81) = 194.420$ ; $\Delta\chi^2(1) = 31.317$ .			
PSQ with SER: CFI .943; TLI .926; RMSEA .083; SRMR .047; $\chi^2(81) = 196.956$ ; $\Delta\chi^2(1) = 33.853$ .			
Notes: CO = Customer Orientation, GE = Good Employer, RFSC = Reliable and Financially Strong Company, SER = Social and Environmental Responsibility, PSQ = Product and Service Quality; (1) = time point one, (2) = time point two, (3) = time point three; AVE = average variance extracted ( $\geq .5$ ); values in italics represent squared correlations between constructs.			
<sup>a</sup> For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked the discriminant validity using a chi-square difference test by following the approach of Anderson and Gerbing (1988). This procedure yielded satisfactory results because the nested model (the nested model is the more restrictive model with more degrees of freedom due to successively fixed correlations at value one) fits significantly more poorly ( $p < .001$ ) than the comparison model. Thus, discriminant validity is assured.			

Table B-14: Discriminant validity of corporate reputation

Source: Own creation.

Item	Time point 1				Time point 2				Time point 3					
	MV/Std.	FL	KMO	ITC	$\alpha$	CR	$\lambda$	MV/Std.	FL	KMO	ITC	$\alpha$	CR	$\lambda$
Fashion sector														
CO	5.7/1.2	.694		.646			.694	5.7/1.1	.639		.589		.593	.663
GE	5.1/1.1	.873		.812			.835	5.2/1.1	.869		.798		.862	.810
RFSC	5.3/1.2	.811		.844	.751	.890	.891	5.4/1.2	.763	.857	.704	.875	.794	.876
SER	4.2/1.2	.704		.658			.690	4.4/1.3	.707		.654		.680	.813
PSQ	5.4/1.1	.861		.801			.874	5.4/1.0	.870		.800		.683	.669
RSE1	5.6/1.3	.984		.831			.658	5.8/1.2	.865		.767		.864	.887
RSE2	5.9/1.1	.616		.750	.625	.864	.880	.971	5.9/1.1	.708	.681	.849	.849	.651
RSE3	5.6/1.2	.877		.779			.857	5.7/1.1	.848		.782	.708	.622	.724
RSE4 <sup>a</sup>	4.8/1.6	.630		-	-	-	-	5.0/1.6	.622		-	-	4.9/1.5	.785
SL1	6.3/1.0	.677		.563			.674	6.3/1.0	.724	.714	.649		.722	.700
SL2	5.2/1.6	.600		.652	.538	.741	.768	.674	5.5/1.4	.795	.704	.818	.841	.828
SL3	5.7/1.2	.917		.681			.860	5.8/1.1	.856		.736		.851	.855
Confirmatory model fit: CFI .946; TLI .934; RMSEA .065; SRMR .059; $\chi^2(426) = 796.540$ .														
Grocery sector														
CO	5.4/1.2	.758		.685			.808	5.4/1.1	.799		.724		.812	.812
GE	4.8/1.3	.783		.710			.751	4.8/1.2	.837		.761		.797	.779
RFSC	5.2/1.1	.692		.864	.633	.855	.854	.668	5.1/1.1	.700	.864	.646	.864	.881
SER	4.2/1.2	.676		.621			.659	4.2/1.2	.651		.604		.656	.746
PSQ	5.1/1.0	.779		.705			.782	5.2/1.0	.767		.700		.777	.809
RSE1	5.5/1.2	.871		.669			.818	5.6/1.1	.847		.759		.886	.846
RSE2	4.2/1.7	.597		.758	.596	.797	.806	.694	5.9/1.1	.640	.624	.827	.687	.691
RSE3	5.2/1.3	.855		.718			.829	5.3/1.2	.872	.746	.683		.770	.797
RSE4 <sup>a</sup>	5.9/1.1	.642		-	-	-	-	4.5/1.6	.593		-	-	4.5/1.5	-
SL1	6.5/1.0	.571		.461			.543	6.4/1.0	.547	.648	.457		.587	.532
SL2	5.4/1.6	.722		.661	.541	.677	.698	.631	5.5/1.4	.653	.542	.699	.723	.751
SL3	5.6/1.4	.664		.519			.770	5.7/1.3	.826		.607		.765	.819
Confirmatory model fit: CFI .944; TLI .931; RMSEA .061; SRMR .061; $\chi^2(426) = 754.073$ .														
Notes: CR <sub>p</sub> = Corporate Reputation with Parcels, RSE = Retail Store Equity, SL = Store Loyalty, CO = Customer Orientation, GE = Good Employer, RFSC = Reliable and Financially Strong Company, SER = Social and Environmental Responsibility, PSQ = Product and Service Quality; (1) = time point one, (2) = time point two, (3) = time point three; MV/Std. = Mean values and standard deviations, FL = Factor loadings (exploratory factor analysis), KMO = Kaiser-Meyer-Olkin criterion ( $\geq .5$ ), ITC = Item-to-Total Correlation ( $\geq .3$ ), $\alpha$ = Cronbach's alpha ( $\geq .7$ ), CR = Composite reliability ( $\geq .6$ ), AVE = Average variance extracted ( $\geq .5$ ), $\lambda$ = Standardized factor loadings (confirmatory factor analysis) ( $\geq .5$ ).														
<sup>a</sup> Item deleted because of low Item-to-Total Correlation.														

Table B-15: Reliability and validity of measurements

Source: Own creation.



The tests of discriminant validity were conducted separately for the three corresponding constructs at each time point and for each sample. The results, including five calculated chi-square difference tests (see Table B–16), show that the constructs are discriminatory. Finally, the fit values for the two confirmatory models were satisfactory (CFI .946; TLI .934; RMSEA .065; SRMR .059;  $\chi^2(426) = 796.540$  for the fashion sample; and CFI .944; TLI .931; RMSEA .061; SRMR .061;  $\chi^2(426) = 754.073$  for the grocery sample).

Prior to testing the hypotheses, we determined whether the measurements are invariant over time (Raykov and Amemiya 2008). The analysis of measurement invariance is performed by applying confirmatory factor analysis. The use of this approach requires a sequence of successive tests in which each step is a requirement for the following step. The first step assures 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. Second, a factor loading invariant model is calculated. In this step, the factor loadings of each item are fixed across time points. The goodness-of-fit statistics for the second model are then compared with the corresponding values for the first model. We applied several differences-in-fit indices to determine the measurement invariance (e.g., chi-square difference tests and  $\Delta CFI$ ). The third step is designed to fix 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 approved. As full measurement invariance was not accomplished for both samples, partial invariance was ascertained (Byrne, Shavelson, and Muthén 1989). This determination was made by freeing several intercept and factor loading values (see Table B–17). The results indicate the good fit of all models and provide support for the proposition that partial measurement invariance holds for all constructs of both the fashion and grocery samples. The derived partial invariance models of both sectors are used in the subsequent analyses of hypotheses testing.

Constructs	AVE	CR (1)	RSE (1)	CR (2)	RSE (2)	CR (3)	RSE (3)
<b>Fashion sector</b>							
CR (1)	.622	-					
RSE (1)	.714	.638 <sup>a</sup>	-				
SL (1)	.532	.486	.501				
Confirmatory model fit: CFI .925; TLI .900; RMSEA .114; SRMR .060; $\chi^2(41) = 149.710$ .							
Model comparison with the confirmatory model that has fixed correlation:							
RSE (1) with CR (1): CFI .837; TLI .786; RMSEA .167; SRMR .072; $\chi^2(42) = 279.488$ ; $\Delta\chi^2(1) = 129.778$ .							
CR (2)	.589			-			
RSE (2)	.654			.575	-		
SL (2)	.649			.421	.493		
Confirmatory model fit: CFI .937; TLI .915; RMSEA .100; SRMR .060; $\chi^2(41) = 124.703$ .							
CR (3)	.587					-	
RSE (3)	.617					.743 <sup>a</sup>	-
SL (3)	.625					.430	.507
Confirmatory model fit: CFI .937; TLI .915; RMSEA .100; SRMR .048; $\chi^2(41) = 124.154$ .							
Model comparison with the confirmatory model that has fixed correlation:							
RSE (3) with CR (3): CFI .906; TLI .877; RMSEA .121; SRMR .055; $\chi^2(42) = 165.893$ ; $\Delta\chi^2(1) = 41.739$ .							
<b>Grocery sector</b>							
CR (1)	.540	-					
RSE (1)	.585	.688 <sup>a</sup>	-				
SL (1)	.461	.473 <sup>a</sup>	.416				
Confirmatory model fit: CFI .945; TLI .926; RMSEA .081; SRMR .050; $\chi^2(41) = 96.815$ .							
Model comparisons with the confirmatory models that have fixed correlations:							
RSE (1) with CR (1): CFI .910; TLI .882; RMSEA .102; SRMR .054; $\chi^2(42) = 133.465$ ; $\Delta\chi^2(1) = 36.650$ .							
SL (1) with CR (1): CFI .906; TLI .876; RMSEA .105; SRMR .062; $\chi^2(42) = 138.119$ ; $\Delta\chi^2(1) = 41.304$ .							
CR (2)	.564			-			
RSE (2)	.632			.558	-		
SL (2)	.499			.491	.408		
Confirmatory model fit: CFI .942; TLI .922; RMSEA .086; SRMR .050; $\chi^2(41) = 103.999$ .							
CR (3)	.597					-	
RSE (3)	.612					.635 <sup>a</sup>	-
SL (3)	.544					.483	.465
Confirmatory model fit: CFI .935; TLI .913; RMSEA .095; SRMR .057; $\chi^2(41) = 117.706$ .							
Model comparison with the confirmatory model that has fixed correlation:							
RSE (3) with CR (3): CFI .887; TLI .853; RMSEA .123; SRMR .066; $\chi^2(42) = 175.755$ ; $\Delta\chi^2(1) = 58.049$ .							
Notes: CR = Corporate Reputation, RSE = Retail Store Equity, SL = Store Loyalty; (1) = time point one, (2) = time point two, (3) = time point three; AVE = average variance extracted ( $\geq .5$ ); values in italics represent squared correlations between constructs.							
<sup>a</sup> For situations in which the criterion of Fornell and Larcker (1981) was violated, we also checked the discriminant validity using a chi-square difference test by following the approach of Anderson and Gerbing (1988). This procedure yielded satisfactory results because the nested model (the nested model is the more restrictive model with more degrees of freedom due to successively fixed correlations at value one) fits significantly more poorly ( $p < .001$ ) than the comparison model. Thus, discriminant validity is assured.							

Table B–16: Discriminant validity

Source: Own creation.

Model	$\chi^2/df$ (p-value)	$\chi^2$ - Difference (p-value)	CFI ( $\Delta$ CFI)	TLI ( $\Delta$ TLI)	RMSEA ( $\Delta$ RMSEA)
<b>Fashion sector</b>					
Model 1: Configural invariance	796.540/426 (.000)	-	.946	.934 (-)	.059 (-)
Model 2: Factor loading invariance	814.261/442 (.000)	17.721 (.340)	.946 (.000)	.936 (.002)	.064 (.006)
Model 3: Factor loading and intercept invariance	878.169/458 (.000)	63.908 (.000)	.939 (.007)	.930 (.006)	.073 (.009)
Model 4: Partial factor loading and partial intercept invariance <sup>a</sup>	827.604/454 (.000)	13.343 (.345)	.946 (.000)	.937 (.001)	.064 (.000)
<b>Grocery sector</b>					
Model 1: Configural invariance	754.073/426 (.000)	-	.944	.931 (-)	.061 (-)
Model 2: Factor loading invariance	782.998/442 (.000)	28.925 (.024)	.942 (.002)	.931 (.000)	.061 (.000)
Model 3: Partial factor loading invariance <sup>b</sup>	775.400/440 (.000)	21.327 (.094)	.943 (.001)	.932 (.001)	.060 (.001)
Model 4: Partial factor loading and intercept invariance	957.832/456 (.000)	182.432 (.000)	.915 (.028)	.901 (.031)	.073 (.013)
Model 5: Partial factor loading and partial intercept invariance <sup>c</sup>	795.225/453 (.000)	19.825 (.100)	.942 (.001)	.932 (.000)	.060 (.000)
Notes: <sup>a</sup> Intercepts are freed for the following items: SER time point one, SER time point three, SL1 time point three, and SL2 time point one.					
<sup>b</sup> Factor loadings are freed for the following items: SER time points one, two and three.					
<sup>c</sup> Intercepts are freed for the following items: RSE2 time point one, SER time point three, SL1 time point one.					

Table B–17: Measurement invariance

Source: Own creation.

To test the hypotheses, we applied a cross-lagged design (Finkel 1995) for SEM using Mplus for both samples. As a cross-lagged design includes the stability effects of each variable over time (e.g., the modeled path from the corporate reputation at time point one to the corporate reputation at time point two), we modeled the corresponding effects. A second characteristic of cross-lagged panel models is the use of disturbance correlations with respect to the indicators (Burkholder and Harlow 2003). Thus, we modeled disturbance cor-

relations of the same indicators across all time points. Third, as the same effects are said to be equal over time (Finkel 1995, p. 29), we included corresponding constraints (e.g., that the effect of corporate reputation at time point one on retail store equity at time point two and the respective effect from time point two on time point three are estimated equally). Fourth, we included disturbance correlations between all constructs at time point two and integrated them at time point three (Finkel 1995, p. 28). The same disturbance correlations between time points two and three are constrained and thus estimated equally (Finkel 1995, p. 30); for example, the disturbance correlation between corporate reputation and retail store equity at time point two is equally estimated at time point three. All of the fit values of the cross-lagged structural model are satisfactory for both retail sectors (CFI .946; TLI .940; RMSEA .062; SRMR .067;  $\chi^2(477) = 852.068$  for the fashion sector; and CFI .937; TLI .930; RMSEA .061; SRMR .074;  $\chi^2(476) = 846.449$  for the grocery sector).

#### 4.2.3 Results and limitations

With regard to the assumption of reciprocity, the effect of corporate reputation on retail store equity is positive and significant over time in both samples (fashion:  $\beta_{1-2} = .202$ ,  $p < .01$ ;  $\beta_{2-3} = .218$ ,  $p < .01$ ; grocery:  $\beta_{1-2} = .143$ ,  $p < .05$ ;  $\beta_{2-3} = .152$ ,  $p < .05$ ). The effect of retail store equity on corporate reputation is also positive and significant over time (fashion:  $\beta_{1-2} = .103$ ,  $p < .1$ ;  $\beta_{2-3} = .100$ ,  $p < .1$ ; grocery:  $\beta_{1-2} = .092$ ,  $p < .1$ ;  $\beta_{2-3} = .096$ ,  $p < .1$ ) (see Table B–18). Thus, the assumption of reciprocity between corporate reputation and retail store equity (H1) is supported. The results also provide support for H2, which proposes that retail store equity has a stronger positive effect on store loyalty than corporate reputation. Corporate reputation has no significant effect on store loyalty in either sample, whereas the effects of retail store equity are significant (fashion:  $\beta_{1-2} = .127$ ,  $p < .05$ ;  $\beta_{2-3} = .122$ ,  $p < .05$ ; grocery:  $\beta_{1-2} = .241$ ,  $p < .01$ ;  $\beta_{2-3} = .282$ ,  $p < .01$ ). Additionally, the sum of the direct and indirect effects on store loyalty is significant for retail store equity. This result is applicable to both the fashion and grocery samples.

Effects	Fashion sector (N = 609)		Grocery sector (N = 627)	
	Structural coefficients	p-value	Structural coefficients	p-value
CR (1) → RSE (2)	.202	**	.143	*
RSE (1) → CR (2)	.103	† (p = .059)	.092	† (p = .055)
CR (1) → SL (2)	.027	ns	.004	ns
RSE (1) → SL (2)	.127	*	.241	**
CR (1) → CR (2)	.782	***	.825	***
RSE (1) → RSE (2)	.651	***	.691	***
SL (1) → SL (2)	.787	***	.547	***
CR (2) → RSE (3)	.218	**	.152	*
RSE (2) → CR (3)	.100	† (p = .063)	.096	† (p = .057)
CR (2) → SL (3)	.028	ns	.004	ns
RSE (2) → SL (3)	.122	*	.282	**
CR (2) → CR (3)	.803	***	.856	***
RSE (2) → RSE (3)	.659	***	.748	***
SL (2) → SL (3)	.787	***	.648	***
R <sup>2</sup> SL (3)	.799	***	.699	***
Total effects of RSE (1) on SL (3)	.183	*	.350	***
Total effects of CR (1) on SL (3)	.068	ns	.034	ns
Structural model fits:				
Fashion sector: CFI .946; TLI .940; RMSEA .062; SRMR .067; $\chi^2(477) = 852.068$ .				
Grocery sector: CFI .937; TLI .930; RMSEA .061; SRMR .074; $\chi^2(476) = 846.449$ .				
Notes: CR = Corporate Reputation, RSE = Retail Store Equity, SL = Store Loyalty; (1) = time point one, (2) = time point two, (3) = time point three; *** p < .001, ** p < .01, * p < .05, † p < .1, ns = not significant; standardized coefficients are shown.				

Table B–18: Results of hypotheses testing

Source: Own creation.

One limitation of the longitudinal study relates to the minor effect of retail store equity on corporate reputation. This minor effect may be caused by the small sample size or the sampling distribution (with respect to age or gender). A replication of the study would allow the model to be analyzed using a larger sample size, and the inclusion of sample weights would address the topic of sampling distribution. The second limitation concerns methodology. Even if panel designs offer advantages over cross-sectional designs in analyzing reciprocal relationships, Kline (2011, p. 293) remarked that if a structural model is tested without an experimental design, one should “not make claims about verifying causality”.

#### 4.3. Study 3: Experimental Study

##### 4.3.1 Aims and sample design

Addressing the shortcomings of the first two studies, we conducted an experimental study using a 2 x 3 design (a real or fictional retailer with a corporate,

store, or control message). In the first setting, we used one fictional DIY retailer, and in the second setting, we used one real DIY retailer. We chose this approach to establish whether reciprocity exists in both fictional and real settings. Furthermore, the possible effects of shopping experience and brand knowledge are excluded in the fictional retailer setting to provide internal validity.

Age groups	Realized quota sample			Planned quota sample		
	Male %	Female %	Total %	Male %	Female %	Total %
<b>Fictional Brand (N = 181)</b>						
Age 15 to 29	8.3	2.8	11.0	8.4	2.6	11.0
Age 30 to 39	16.6	6.1	22.7	16.7	5.3	22.0
Age 40 to 49	20.4	6.1	26.5	21.3	6.7	28.0
Age 50 to 64	19.3	5.5	24.9	18.2	5.8	24.0
Age over 64	11.6	3.3	14.9	11.4	3.6	15.0
Total	76.2	23.8	100.0	76.0	24.0	100.0
<b>Real Brand (N = 169)</b>						
Age 15 to 29	10.1	3.5	13.6	8.4	2.6	11.0
Age 30 to 39	15.4	7.7	23.1	16.7	5.3	22.0
Age 40 to 49	21.9	6.5	28.4	21.3	6.7	28.0
Age 50 to 64	17.8	6.5	24.3	18.2	5.8	24.0
Age over 64	8.3	2.4	10.7	11.4	3.6	15.0
Total	73.4	26.6	100.0	76.0	24.0	100.0

Table B–19: Sample characteristics

Source: Own creation.

After pre-testing the manipulations with graduate students ( $N = 23$ ), we conducted DIY-specific quota sampling according to age and gender as done in the first study. Each respondent was randomly chosen for either the real or fictional retailer setting and was asked to name all local DIY retailers with which he or she was familiar at the beginning of the questionnaire. To participate in the real retailer setting, the respondents had to be familiar with the real retailer that we chose for the experiment. This procedure resulted in 332 total respondents: 165 respondents for the fictional setting and 167 respondents for the real retailer setting. Altogether, the realized samples met the intended sampling (see Table B–19), except that the over-64 age group was underrepresented in the real retailer setting. With regard to the survey design, we considered visual design and the hierarchy of effects to counteract the possibility of common method bias.

#### 4.3.2 *Measurement and method*

We used the same measurements and scale that were used in our two previous studies to measure corporate reputation, retail store equity, and store loyalty. Store loyalty was measured only for the real retailer sample, as the measurement of repurchase intentions is not applicable to the fictional retail setting. The measurements were tested for reliability and validity (see Table B–20). All values for corporate reputation and retail store equity were satisfactory for both the fictional and real samples, and the values for store loyalty were satisfactory for the real retailer sample.

Prior to participating in a face-to-face interview using the standardized questionnaire, each respondent listened to one cover story (a corporate, store, or control message) pertaining to a DIY retailer. All of the cover stories (which appeared in the form of newspaper cuttings) were structured similarly and contained corporate and store information pertaining to the (real or fictional) retailer. The neutral corporate information was provided through a statement regarding the site of the headquarters and the number of stores that belong to the corporation. The neutral store information was given by explaining the services and product categories that are offered in the stores. With the exception of the control group (who received the two neutral messages as described above), we further included positive manipulations for the corporation or the store, respectively. For the corporate manipulation, we positively activated the ‘customer orientation’ and ‘good employer’ dimensions (Walsh, Beatty, and Shiu 2009) by writing that a well-known national retail association named the corporation as the best DIY retailer in the country in 2010 because of its excellent customer orientation and outstanding leadership (compared with other leading competitors in the market). For the purpose of store manipulation, we positively activated the ‘favorability’ and ‘uniqueness’ characteristics of the store (Verhoef, Langerak, and Donkers 2007). We wrote that a well-known local chamber of commerce named the store as the best DIY store in 2010 because of its outstanding attractiveness and found the store to be outstanding compared with major competing stores. Thus, the manipulated stories differed in their activation of information at the corporate and store levels, whereas identical stories were provided for the fictional retailer setting (please see Appendix 2 for the presentation of cover stories).

Construct	Item	MV/Std.	FL	KMO	ItTC	$\alpha$	MV/Std.	FL	KMO	ItTC	$\alpha$
Fictional Brand						Real Brand					
Corporate Reputation	CR1	4.4/1.3	.894		.835		4.8/1.3	.771		.731	
	CR2	4.4/1.3	.931	.746	.860	.914	4.5/1.2	.984	.692	.867	.890
	CR3	4.3/1.3	.828		.789		4.4/1.2	.818		.763	
	CR4	4.4/1.3	.896		.778		4.4/1.1	.866		.761	
	CR5	4.3/1.2	.876	.703	.767	.855	4.4/1.1	.972	.646	.811	.842
	CR6	4.5/1.4	.690		.647		4.6/1.1	.588		.563	
	CR7	4.8/1.6	.512		.476		4.4/1.3	.652		.601	
	CR8	4.4/1.4	.985	.613	.736	.770	4.5/1.2	.919	.682	.760	.824
	CR9	4.5/1.4	.748		.628		4.7/1.2	.797		.692	
	CR10	4.3/1.3	.591		.512		4.0/1.2	.720		.572	
	CR11	3.8/1.1	.753	.673	.614	.749	4.0/1.0	.748	.683	.591	.735
	CR12	2.9/1.4	.795		.625		2.6/1.3	.633		.528	
	CR13	4.3/1.2	.701		.641		4.8/1.0	.584		.508	
	CR14	4.1/1.4	.846	.710	.741	.840	4.4/1.2	.785	.672	.627	.755
	CR15	4.2/1.5	.851		.743		4.6/1.1	.776		.626	
Retail Store Equity	RSE1	3.8/1.4	.837		.698		4.9/1.2	.744		.579	
	RSE2	2.8/1.6	.637	.761	.562	.795	5.8/1.1	.528	.632	.389	.699
	RSE3	4.0/1.5	.747		.633		4.7/1.1	.693		.581	
	RSE4	3.3/1.5	.603		.539		3.6/1.5	.501		.399	
Store Loyalty	SL1						5.0/1.6	.646		.570	
	SL2	-	-	-	-	-	3.4/1.4	.698	.668	.596	.781
	SL3						4.0/1.2	.914		.719	

Notes: MV/Std. = Mean values and standard deviations, FL = Factor loadings (exploratory factor analysis), KMO = Kaiser-Meyer-Olkin criterion ( $\geq .5$ ), ItTC = Item-to-Total Correlation ( $\geq .3$ ),  $\alpha$  = Cronbach's alpha ( $\geq .7$ ).

Table B–20: Reliability and validity of measurements

Source: Own creation.

Prior to the manipulation checks and hypothesis testing, we calculated indices for all scales. In the manipulation checks, we analyzed the differences in mean values between the experimental groups (corporate and store messages) and the control group (neutral message) by comparing the corporate reputation index between the control message and corporate message groups and by comparing the retail store equity index between the control message and store message groups. All manipulation checks for the fictional and real retailer samples yielded significant differences and proved that the manipulations were successful (see Table B–21). We tested the hypotheses using regression analysis with SPSS.



Fictional Brand									
Message	Neutral (N = 35)		Corporate (N = 58)		Store (N = 72)		Mean Difference	p	Standard Error Difference
	MV	Std.	MV	Std.	MV	Std.			
Corporate Reputation	3.71	1.09	4.38	.700	-	-	-.677	**	.206
Retail Store Equity	2.96	.96	-	-	3.56	1.29	-.595	**	.223
Real Brand									
Message	Neutral (N = 28)		Corporate (N = 71)		Store (N = 68)		Mean Difference	p	Standard Error Difference
	MV	Std.	MV	Std.	MV	Std.			
Corporate Reputation	3.99	.84	4.56	.700	-	-	-.573	**	.162
Retail Store Equity	4.34	.81	-	-	4.71	.84	-.368	*	.184
Notes: MV = Mean values, Std. = Standard deviations; ** p < .01, * p < .05.									

Notes: MV = Mean values, Std. = Standard deviations; \*\*  $p < .01$ , \*  $p < .05$ .

Table B–21: Manipulation checks

Source: Own creation.

#### 4.3.3 Results and limitations

With regard to the first hypothesis, we chose the corporate message group to analyze the effect of corporate reputation on retail store equity in the first step. Second, we chose the store message group to examine the effect of retail store equity on corporate reputation (see Table B–22). Both effects are significant and positive for the fictional and real retailer samples (fictional retailer:  $\beta_{CR \rightarrow RSE} = .669$ ,  $p < .001$ ;  $\beta_{RSE \rightarrow CR} = .510$ ,  $p < .001$ ; and real retailer:  $\beta_{CR \rightarrow RSE} = .674$ ,  $p < .001$ ;  $\beta_{RSE \rightarrow CR} = .572$ ,  $p < .001$ ). Thus, the assumption of reciprocity between corporate reputation and retail store equity is supported (H1). Considering the effects on store loyalty for the real retailer sample, we tested the effect of corporate reputation on store loyalty using the corporate message group and analyzed the effect of retail store equity on store loyalty using the store message group. Corporate reputation and retail store equity positively affect store loyalty ( $\beta_{CR \rightarrow SL} = .514$ ,  $p < .001$ ;  $\beta_{RSE \rightarrow SL} = .321$ ,  $p < .01$ ). However, as retail store equity has a weaker effect on store loyalty than corporate reputation, the results do not support H2.

One limitation of this experimental study is its restricted external validity. However, by applying quota sampling (particularly a sector-specific sampling) rather than convenience sampling, we attempted to address external validity to a certain extent. The reciprocity of corporate reputation and retail store equity is supported, but we cannot confirm that the effect of retail store equity on store

loyalty is stronger than that of corporate reputation. The cause of the latter result requires further discussion and investigation.

Fictional Brand							
CR → RSE (N = 58)	B	Beta	t-value	p	RSE → CR (N = 72)	B	Beta t-value p
Constant	-.921		-1.351	ns	Constant	2.980	10.993 ***
Corporate Reputation	1.035	.669	6.737	***	Retail Store Equity	.356	.510 4.966 ***
R <sup>2</sup> = .448					R <sup>2</sup> = .260		
Real Brand							
CR → RSE (N = 71)					RSE → CR (N = 68)		
Constant	.891		1.641	ns	Constant	1.985	4.816 ***
Corporate Reputation	.891	.674	7.570	***	Retail Store Equity	.488	.572 5.665 ***
R <sup>2</sup> = .454					R <sup>2</sup> = .327		
CR → SL (N = 71)					RSE → SL (N = 68)		
Constant	.314		.393	ns	Constant	2.332	3.421 **
Corporate Reputation	.863	.514	4.976	***	Retail Store Equity	.393	.321 2.754 **
R <sup>2</sup> = .264					R <sup>2</sup> = .103		
Notes: CR = Corporate Reputation, RSE = Retail Store Equity, SL = Store Loyalty. *** p < .001, ** p < .01, ns = not significant.							

Table B–22: Results of hypotheses testing  
Source: Own creation.

5. Discussion and Conclusions

This article examines the reciprocity between corporate reputation and retail store equity as well as their effects on store loyalty by conducting studies with cross-sectional, longitudinal, and experimental designs. This under-researched area is relevant because retailers are increasingly focusing on their corporate reputations and the positioning of their stores as strong brands and because they frequently must decide on actions such as the relative allocation of promotional investments across different levels (e.g., corporation, store, and store brands) to attract consumers. We found strong evidence that corporate reputation and retail store equity have a positive reciprocal relationship and that retail store equity has the greatest effect on store loyalty. Thus, we agree with the early conceptual conclusions of Atkin (1962) and Stanley and Sewall (1976) that reciprocal effects between corporate and store levels exist. These observations have both theoretical and managerial implications.

### 5.1. *Theoretical Implications*

This study contributes to theory because the conceptualization of reciprocal relationships for associative concepts can be explained using schema theory. With respect to the first research question, concerning the reciprocal relationship between corporate reputation and retail store equity, the results strongly support the existence of positive reciprocal relationship. Thus, it can be concluded that, in line with schema and associative network theory, schema activation can occur in both directions (e.g., Malle and Horowitz 1995) in that the links between two associative concepts point in two directions (Lei, Dawar, and Lemmink 2008). As positive reciprocal relationships exist between associative concepts in consumer's memories, the present study provides strong empirical evidence for marketing rules that may have previously been founded mostly on managerial experience. Furthermore, the relationship and its positive direction were congruently demonstrated in all three studies, for one retailer with 30 locations (cross-sectional design), for two other retail sectors in one city (longitudinal design), and for a real and fictional retailer setting in one sector (experimental design); thus, we can conclude that it may be stable. However, situational differences may occur because store-level factors may not dominate corporate-level factors for all consumers or in all local competitive situations, for example. Thus, we call for further tests of contingencies within our or similar reciprocal models.

With respect to the second research question, concerning the assumed differences in the strength of effects of corporate reputation and retail store equity on store loyalty, the results seems to be not fully consistent. However, two of our studies (the studies employing cross-sectional and longitudinal designs) show that retail store equity more strongly determines store loyalty than does corporate reputation. Consequently, it can be concluded that consumers activate the store-related node more frequently, i.e., through past and current shopping experiences (Anderson 1983; Malle and Horowitz 1995; Lei, Dawar, and Lemmink 2008), than the corporate-related node. Hence, consumers' direct contact with local stores (and thus the stored information about a specific store) primarily influences store loyalty among consumers in comparison to stored information about the corporation. More importantly, especially in our cross-sectional study, the direct effects of corporate reputation and store equi-

ty on store loyalty are of equal strength, whereas the total effect of store equity on store loyalty is significantly stronger. We conclude that this observation underlines the necessity of including reciprocal relations in future studies because otherwise, the observed isolated effects might bias the results and conclusions drawn from such studies. Again, this observation might vary according to various contingencies but seems to be stable, applying to 30 local stores of a DIY retailer in diverse local markets as well as to a typical local competitive situation of fashion and food retailers in one city. However, the experimental study does not support our assumption that retail store equity more strongly affects the store loyalty of consumers. These inconsistent findings must be discussed in greater detail. One reason for this contradictory result of the experimental study may be related to the study design (e.g., the sampling and manipulations). The presence of one underrepresented age group may have triggered the unexpected findings. This contradictory result may be also related to the abstract nature of the store-related information that was provided (i.e., the store was described as attractive and unique compared with other stores) in comparison with more specific, manipulated corporate information (i.e., excellent customer orientation and outstanding leadership in contrast with competing retailers). Although we find positive effects of the relationship between corporate reputation and retail store equity on store loyalty, the analysis of the strength of the effects requires further research.

According to the methodology, this article provides a valid procedure to test for reciprocity assumptions by means of consecutively conducted studies. Although each design is associated with the challenges and limitations that were discussed above, this procedure is a useful step-by-step approach to conduct a detailed analysis of corresponding assumptions and to understand reciprocity.

## 5.2. *Managerial Implications*

This study has managerial implications, highlighting the importance of the reciprocal effects that chain store retailers must take into account to efficiently attract consumers through various activities. Although the marketing rule of reciprocity may result from practical experience, it is beneficial to provide scientific evidence regarding whether there are interrelations between, for example, promotional investments, to determine which investment has a stronger

impact on consumer behavior, and how resources can be allocated more efficiently. In our context, the allocation of promotional investments between the more general corporate level and the more specific store level seems to be particularly challenging because consumer associations related to both levels interact in determining store loyalty and because these decisions are in the responsibility of different organizational units (e.g., corporate communication and sales). Thus, it is advantageous to align decisions so that positive, strong, and congruent associations of corporate reputation and store equity are created to take advantage of the reciprocal effects of these investments.

Because the results of our studies suggest that store loyalty is more strongly influenced by retail store equity than by corporate reputation (except in the experimental design), we conclude that retailers should generally focus on building a positive, strong, and unique retail store equity in the minds of consumers. This endeavor will be more effective in ensuring positive feedback on consumer store patronage behavior. However, solely focusing on store equity effects may be insufficient because corporate communication campaigns may be less expensive than campaigns concerning stores or further investments in creating attractive or unique stores. In practice, the efficient allocation of promotional resources depends on various contextual factors, such as the objectives of a retailer (e.g., for attracting more stakeholder groups, corporate communication may be more effective), the local competitive landscape (e.g., more effort should be placed on local stores in highly competitive communities), and especially consumer behavior (e.g., attracting consumers with high vs. low store experience). Thus, retailers need to consider these contingencies. Finally, our study demonstrates that positive relationships between constructs exist, but negative communication about the corporation (e.g., due to weak social responsibility) or negative consumer experiences in a store (e.g., due to weak service) may also be transferred and be of consequence.

## **6. Limitations and Further Research**

With respect to the linkage between corporate reputation and retail store equity as well as their influence on consumer behavior for chain store retailers, there is still a need for further research. In addition to the limitations that were

briefly mentioned for each study, we identify three further limitations. First, we concentrated on two levels of perception in this study: the more general corporate reputation and the more specific retail store equity. Future studies could focus on other levels (e.g., store or products brands, corporate brands or chain brands in diversified companies, or e-commerce channels in multichannel retailing). However, there is an absence of common distinctions as well as related measures among some related concepts, such as reputation, image, and brand equity (Markwick and Fill 1997; Gotsi and Wilson 2001). Second, associative, and thus cognitive, schema theoretical reasoning has been used in this study. Hence, it may be challenging to apply schema theory to reciprocal effects concerning more affective concepts (Da Silva and Syed Alwi 2006). Third, despite the inclusion of some covariates, the analyses were conducted without consideration of further contextual factors. Thus, future research should consider the contingencies of reciprocal effects, taking into consideration factors such as consumer shopping motives (Schenk, Löffler, and Rauh 2007), self-confidence (Pan and Zinkhan 2006), or store and brand familiarity (Cowley and Mitchell 2003; Inman, Winer, and Ferraro 2009; Benedictus et al. 2010), as these may influence the analyzed relationships and may provide additional insights into the boundary conditions of reciprocal effects on consumer behavior. However, we believe that the reciprocity and relative importance of retail store equity will still be demonstrated because our additional analysis (not reported here) on the moderating role of store familiarity (measured by the item “how often do you visit a particular store” (Inman, Winer, and Ferraro (2009)) also supports this conclusion.

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