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# The Role of Parent Brand Quality for Service Brand Extension Success

Franziska Völckner<sup>1</sup>, Henrik Sattler<sup>2</sup>,  
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## Abstract

Although substantial differences between product quality and service quality have spurred service research for the past 30 years, studies of brand extension success drivers in a services context measure the core driver of parent brand quality, using scales developed for fast moving consumer goods (FMCG). This study instead assesses parent brand quality with a context-specific measure, drawn from service quality research, and analyzes the relative effects of key brand extension success drivers for services. Partial least squares (PLS) modeling offers diagnostic information about the impact of three dimensions of perceived parent brand quality on the perceived service quality of an extension product, a key success metric for service brand extensions. In contrast with previous studies, the dominant success driver is parent brand quality rather than the perceived fit between the parent brand and the extension. Moreover, all three dimensions of parent brand quality constitute distinct drivers that should be considered when managers assess the chances of service brand extension success, with outcome quality having the strongest impact on service brand extension success. An importance performance analysis of the PLS estimates for 27 hypothetical service extensions demonstrates the diagnostic value of this approach and charts a “priority map” for managerial decisions.

## Keywords

service brand extensions, success drivers, perceived service quality, partial least squares

## Introduction

Brand extensions are among the most important and often used branding strategies (Keller 2003). They refer to the use of well-known brand names when launching new products—for example, the transfer of the Virgin brand (i.e., the parent) to a new product (i.e., the extension) such as limousine services. The economic relevance of brand extensions is reflected in some basic numbers; more than 70 empirical studies have addressed brand extension strategies during the past 20 years (e.g., Ahluwalia and Gürhan-Canli 2000; Bottomley and Holden 2001; Hennig-Thurau, Houston, and Heitjans 2009; Klink and Smith 2001; Shine, Park, and Wyer 2007).

A substantial part of this research investigates drivers of successful brand extensions. Proxies for brand extension success focus on how customers evaluate the extension product (e.g., Klink and Smith 2001), such that the perceived quality of the extension provides an important indicator of brand extension success (e.g., Aaker and Keller 1990; Bottomley and Holden 2001; Van Riel, Lemmink, and Ouwersloot 2001; Van Riel and Ouwersloot 2005). A key finding of these studies indicates that the most important determinants of consumers' evaluations of an extension product are (a) the perceived similarity or fit between the parent brand and the extension product (i.e., the extent to which a consumer perceives the new product to be consistent with the parent brand; Tauber 1988) and (b) perceived quality (i.e., consumer's judgment of the superiority

or excellence of a brand; Zeithaml 1988) of the parent brand (e.g., Bottomley and Holden 2001; Broniarczyk and Alba 1994; Völckner and Sattler 2007).

However, most of these studies consider the context of FMCG, whereas brand extensions of services receive considerably less research attention. This focus contrasts with the importance of service brand extensions in practice; service companies have embraced the concept of brand extensions. Prominent examples include the extensions of the “easy” brand to car rentals (easyCar.com), Internet cafés (netcafe.com), and banking services (easyMoney.com), as well as the extensions of the Virgin brand to holiday cruises (Virgin

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Holidays Cruises). The scarce existing research on brand extensions in the service context replicates key findings from the goods domain, namely, that the perceived quality of the parent brand (or closely related constructs) and the fit between the parent brand and extension product drive consumers' evaluations of service brand extensions (Hem, de Chernatony, and Iversen 2003; Martínez and Pina 2005; Van Riel, Lemmink, and Ouwersloot 2001; Van Riel and Ouwersloot 2005). They also identify fit as most influential, even more so than parent brand quality (e.g., Hem, de Chernatony, and Iversen 2003).

In this study, we question these findings and argue that service brand extension research must acknowledge the conceptual differences between consumer products and services to conceptualize and measure key variables of interest. In particular, the conceptual differences between consumers' perceptions of the quality of a manifest product and that of a service should be taken into account when measuring parent brand quality. These differences have motivated extensive research on service management that establishes service quality as a pivotal concept, almost from the beginning (e.g., Bolton and Drew 1991; Fisk, Brown, and Bitner 1993; Iacobucci 1998; Rust and Oliver 1994). They also should be pivotal in discussions of parent brand quality, whose conceptualization should reflect that the parent brand is a service, not a manifest product. The knowledge accumulated by service researchers with regard to the concept of service quality can inform research on brand extensions, yet existing studies of service brand extensions continue to apply only measurement scales developed in the FMCG context. For example, Van Riel, Lemmink, and Ouwersloot (2001) and Van Riel and Ouwersloot (2005) both replicate the seminal study of Aaker and Keller (1990) using the same measurement scales (see also De Ruyter and Wetzels 2000; Hem, de Chernatony, and Iversen 2003; Lei et al. 2004; Martínez and Pina 2005). Yet, the specific character of service quality demands consideration in any efforts to model the impact of the potential drivers of consumers' evaluations of service brand extensions, particularly the impact of parent brand quality.

Against this background, this article makes two main contributions. First, we introduce context-specific measures of parent brand and extension quality to empirical models of brand extension success. Our measure builds on the hierarchical model of service quality of Brady and Cronin (2001), which recognizes that service quality should incorporate customer evaluations of outcomes, interactions with service employees, and the service environment. The model seems appropriate for our study's objectives, because it represents a unifying approach that conceives of service quality by integrating its different dimensions.

Second, we use this new measure to challenge prior findings that suggest the perceived fit between the parent brand and the extension is a stronger driver of service brand extensions success than is parent brand quality. With a partial least squares (PLS) approach, we model the context-specific measures of parent brand and extension quality in a manner that allows managers to draw diagnostic information on service brand

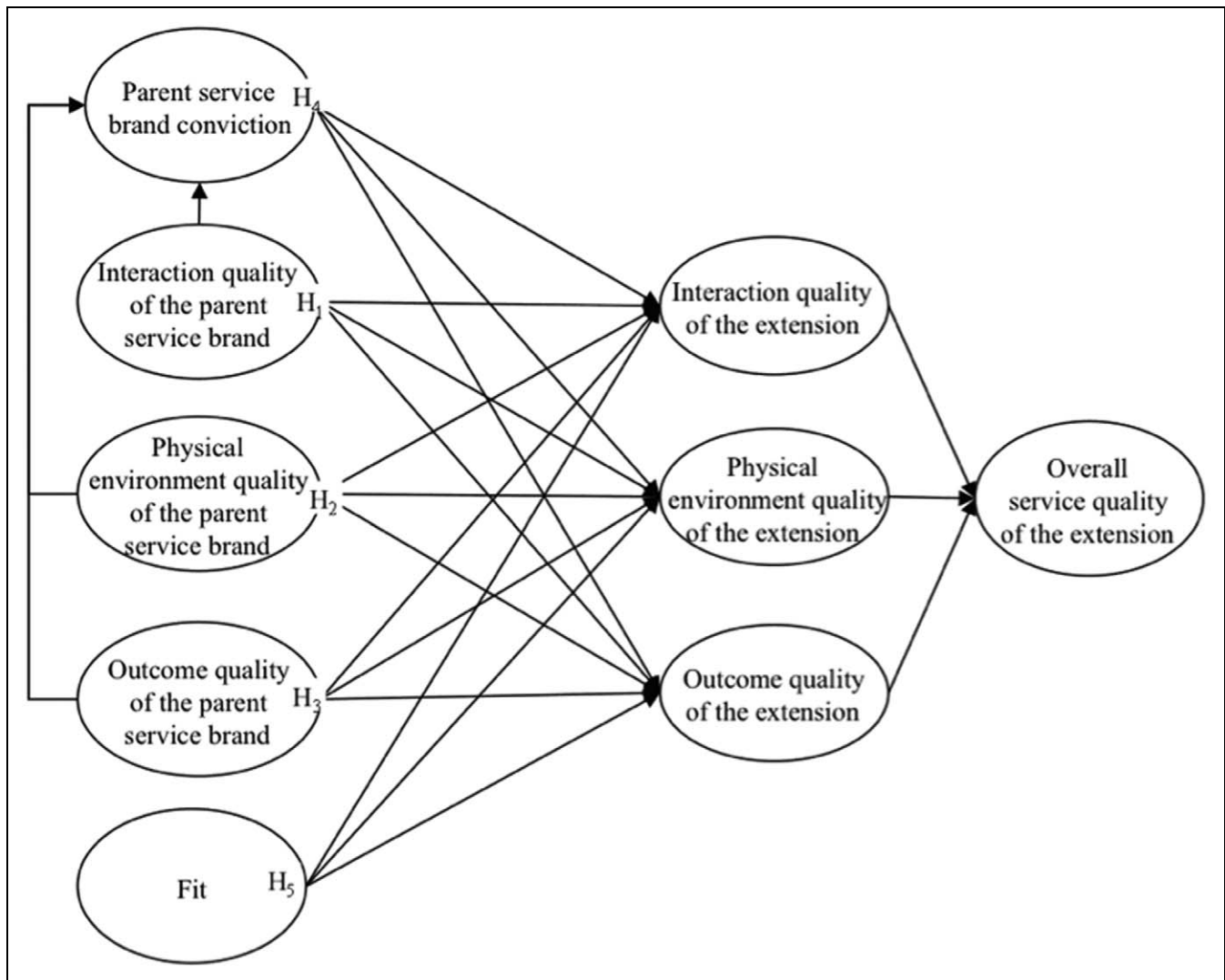
extension success. Specifically, we determine the relative impact (significance and relative importance) of the three dimensions of perceived parent brand quality on the extension product's perceived service quality, including both the overall service quality of the extension and its three dimensions (i.e., interaction, physical environment, and outcome quality of the extension). We compare our results with other established brand extension drivers such as fit and parent brand conviction (i.e., consumers' liking for and trust in the parent brand). We illustrate the diagnostic value of this proposed model by running an importance performance analysis for each of the 27 hypothetical service extensions under consideration; the outcome of this analysis is a "priority map" that reveals to managers how they can enhance the chances for their service brand extension success. We also test for moderating effects, including the interactions of the three dimensions of the parent brand's quality with the fit variable, and we compare results across three parent brand types.

In contrast with previous studies, we find that parent service brand quality, not perceived fit between the parent service brand and the extension, is the dominant success driver. All three dimensions of parent service brand quality are influential, though outcome quality has the strongest impact on success. The effects of parent service brand quality, parent service brand conviction, and fit on consumers' perceptions of extension quality vary—to some extent—according to the service type offered by the parent brand.

We organize the remainder of this manuscript as follows: We first review literature on brand extensions in a service context and develop our conceptual framework and hypotheses. We describe the research design and data used and report the empirical results. To conclude, we outline the implications of context-specific modifications of potential drivers of consumers' brand extension evaluations when determining the relative importance of such drivers in a service context.

## Extant Research on Service Brand Extensions

Previous research on service brand extensions replicates findings from the FMCG context that perceived fit and perceived quality of the parent brand (or related constructs) are the predominant drivers of consumers' evaluations of brand extensions (Hem, de Chernatony, and Iversen 2003; Martínez and Pina 2005; Van Riel, Lemmink, and Ouwersloot 2001; Van Riel and Ouwersloot 2005). Most of these studies use scales developed for FMCG studies, assessing parent brands in global terms (e.g., overall quality of the parent brand on a 7-point scale, with 1 = *inferior* and 7 = *superior*, Aaker and Keller 1990; agreement/disagreement with the statement "Overall, I have a very favorable opinion about [brand]," 1 = *strongly disagree*, 7 = *strongly agree*, Klink and Smith 2001; see also Van Riel, Lemmink, and Ouwersloot 2001; Van Riel and Ouwersloot 2005). The findings match those offered by Aaker and Keller and extensions of their work (e.g., Bottomley and Holden 2001), in that (a) fit and the quality of the parent brand are the main drivers of consumers' evaluations of



**Figure 1.** Tested Model of the Drivers of Perceived Service Quality of the Extension

(service) brand extensions, though (b) fit seems to have a greater impact than parent brand quality. Van Riel and Ouwersloot (2005, p. 253) thus conclude that their “findings confirmed the validity of the model proposed by Aaker and Keller.”

A separate group of service brand extension studies (de Ruyter and Wetzels 2000; Hem, de Chernatony, and Iversen 2003; Lei et al. 2004; Martínez and Pina 2005) does not directly replicate the work of Aaker and Keller (1990) but uses scales similar to those developed by Aaker and Keller or other researchers in the FMCG domain (e.g., Boush et al. 1987; Loken and John 1993). This second group of service brand extension studies attains generally similar results; fit and the quality of the parent brand drive consumers’ evaluations of service brand extensions, and fit is more important than parent brand quality. For example, Hem, de Chernatony, and Iversen (2003) identify perceived fit (which they measure with three rating scales adopted from Aaker and Keller 1990 and other FMCG researchers) as the crucial determinant, much more

important than parent brand quality (which they measure as “brand reputation”).

Although these studies are important for analyzing the generalizability and robustness of prior research findings, we are not aware of any work that addresses the conceptual differences between services and FMCGs when conceptualizing the core concept of (parent brand) quality. We argue that to assess the impact of different drivers for brand extension success accurately, the researcher must consider the specific character of services and service quality versus product quality—as has not been done in extant research on service brand extensions.

### Conceptual Model Development

In this section, we develop a conceptual model of the impact of service brand extension success drivers. Because brand extension success largely is determined by how customers evaluate the extension product (Klink and Smith 2001), we focus on the extension’s perceived quality as the dependent variable, in line

with prior research (e.g., Aaker and Keller 1990; Bottomley and Holden 2001; Van Riel, Lemmink, and Ouwersloot 2001; van Riel and Ouwersloot 2005). Although the perceived quality of the extension might not be a perfect indicator of its economic success, previous research has confirmed a strong relationship between these concepts (Völckner and Sattler 2007). As illustrated in Figure 1, our model proposes impacts of three extension success drivers, namely, perceived parent brand service quality, parent service brand conviction, and fit, on the perceived service quality of the extension.

### **Effects of the Parent Brand: Service Quality and Conviction**

**Perceived parent brand service quality.** A basic premise underlying the use of brand extensions is that parent brands that consumers perceive to have high quality provide greater leverage for extensions than do brands that consumers associate with low quality (Aaker and Keller 1990). In the context of services, service quality—the equivalent of product quality—is widely acknowledged as a critical factor (e.g., Bolton and Drew 1991; Rust and Oliver 1994). Wide agreement also indicates that service characteristics, such as intangibility, simultaneity, and heterogeneity, require a specific understanding and conceptualization of the quality concept (Iacobucci 1998). We argue that the specific character of service quality (compared with product quality) requires consideration when modeling the relationship between a parent brand's service quality and consumers' brand extension evaluations. More specifically, we use the widely cited hierarchical conceptualization of service quality of Brady and Cronin (2001). The authors distinguish three dimensions of service quality—interaction, service environment, and outcome quality—and empirically support this conceptualization with a comprehensive consumer survey across four service industries. Service interaction quality refers to the interpersonal interactions that take place during service delivery; its relevance derives from services' intangibility and the prominent role of the employee-customer interface (Brady and Cronin 2001). Service environment quality considers the influence of the physical or "built" environment on consumers' service evaluations, which is relevant because customers must be present during the service delivery process (Brady and Cronin 2001). Finally, outcome quality refers to the technical outcome of the service encounter or service product or "what the customer is left with when the production process is finished" (Brady and Cronin 2001, p. 40).

Consistent with brand extension theory, we expect each of these service quality dimensions to provide an important risk-reducing signal to consumers, which is particularly relevant due to the uncertainty that service consumers perceive as a result of the experience aspect of services. In brand extensions, the parent brand represents an implicit "bond" of quality. Consumers believe that the parent brand firm would not risk the accumulated investment in its brand by attaching its name to a service with inferior quality and transfer their quality-related perceptions of the parent to the extension service. We

do not speculate about the relative importance of the three service quality dimensions for consumers' evaluations of the extension but rather expect all three to be significant for customers of new extension services. Formally,

*Hypothesis 1:* The perceived interaction quality of a parent service brand has a positive effect on the perceived service quality of the extension.

*Hypothesis 2:* The perceived physical environment quality of a parent service brand has a positive effect on the perceived service quality of the extension.

*Hypothesis 3:* The perceived outcome quality of a parent service brand has a positive effect on the perceived service quality of the extension.

**Parent service brand conviction.** In addition to the perceived quality of the parent brand, previous research on brand extensions suggests that consumers' parent brand conviction, defined as the liking of and trust in the parent brand, may positively affect consumers' evaluations of the extension (e.g., Kirmani, Sood, and Bridges 1999). Because parent brand conviction results from favorable experiences with the parent brand, it represents accumulated perceptions of parent service brand quality over time. Thus, parent brand conviction is a particular facet of perceived parent brand quality. High levels reflect favorable predispositions toward the brand, resulting from favorable experiences with the parent brand over time that generate greater liking for that brand. Higher parent brand conviction therefore should provide consumers with greater risk relief and encourage more positive extension evaluations than low parent brand conviction. Formally,

*Hypothesis 4:* Consumers' parent service brand conviction has a positive effect on the perceived service quality of the extension.

### **Effects of Perceived Parent Brand–Extension Fit**

Categorization theory suggests that brands and product/service categories represent cognitive categories in consumers' memory (Boush and Loken 1991; Broniarczyk and Alba 1994). In this spirit, a brand extension represents a new instance that can be more or less similar to the parent brand and its existing products. Consistent with categorization theory, prior brand extension studies posit that the degree to which consumers transfer their parent brand associations to an extension depends on the level of perceived fit or similarity between the extension category and the parent brand. Specifically, consumers evaluate extensions more favorably, if the perceived similarity between the parent brand and the extension is high (Aaker and Keller 1990). Perceived similarity consists of the number of shared associations between the parent brand and the extension product category and often is conceptualized as consumers' perceptions of the degree of global similarity between the parent brand and the extension category (e.g., Aaker and Keller 1990) or how much the brand-specific associations overlap



between a parent brand and an extension category (e.g., Broniarczyk and Alba 1994). Formally,

*Hypothesis 5:* The perceived fit between the parent service brand and the extension has a positive effect on the perceived service quality of the extension.

Our hypotheses thus focus on the impact of both the parent service brand and its fit with the extension on the extension's perceived service quality. For the sake of model coherence, we also include paths from the parent brand quality dimensions to parent brand conviction, for which prior research offers support on a general level (e.g., Kirmani, Sood, and Bridges 1999; Völckner and Sattler 2006). As parent brand conviction accumulates perceptions of parent service brand quality over time, greater perceived parent brand quality should generate greater liking of and trust in the brand name.

## Research Design

### Parent Brands and Extensions

We test the postulated hypotheses with a broad variety of real parent brands and hypothetical extensions from the service sector, adapting an approach used successfully by other brand extension researchers (e.g., Völckner and Sattler 2007). Specifically, we asked five academic brand experts to suggest a list of parent brands that (a) a substantial number of respondents would be familiar with (to limit missing values); (b) stem from the service sector (i.e., not originated for material goods); (c) are predominantly considered high-quality brands but also vary in their perceived quality; and (d) provide sufficient variance on the three service quality dimensions identified by Brady and Cronin (2001). To make the final selection of service brands and corresponding extension industries, we relied on a pretest with a convenience sample of 112 consumers. This procedure resulted in nine parent brands across a broad variety of services (i.e., banking, travel agency, fast food restaurant, restaurant, coffee shop, hotel, car rental, movie theater, and telecommunication).

These nine parent brands were linked to 27 extensions, which had to be relevant and logically connected to the parent brand (i.e., excluding unrealistic extensions), as well as vary sufficiently in terms of perceived fit with the parent brand (a necessary methodological requirement). Specifically, to select the 27 service industries, we relied on the list of service categories published in the "Nice Classification" (a formal classification of goods and services for the purposes of registering trademarks and service marks; WIPO 2009, accessed on October 20). We asked five academic experts to discuss these service categories against the background of the nine parent brands and come up with a high, medium, and low fit extension for each brand. The results of the main study show that the selected extensions—with few exceptions—differ significantly ( $p < .05$ ) in perceived fit (see Table 1). Hence, overall the extensions vary sufficiently in terms of perceived fit with the parent brand.

We also ensured that all extensions were hypothetical at the time the study took place, such that none of the parent brands ever offered services in any of the extension categories assigned to them. In Table 1, we list the service industries for the nine parent brands and the corresponding extension categories.

### Sample and Procedure

We collected data with a Web-based survey (e.g., Deutskens et al. 2004). The application of such a uniform data collection procedure helps control for response styles (Adler 1983), and online surveys have been employed successfully in recent marketing research (e.g., Hennig-Thurau et al. 2007). The 2,793 respondents who participated in the survey initially were recruited offline by trained marketing students, who used a quota sampling procedure to ensure a representative structure for Germany in terms of age, gender, and number of household members. The students personally contacted potential respondents from their respective social networks, according to the given quotas. Respondents then received an e-mail invitation from the research team that asked them to respond to an online questionnaire.

Each participant was randomly assigned to one of the 27 brand extensions. A total of 2,495 (response rate = 89.3%) online questionnaires were returned. In line with previous brand extension studies, we excluded respondents who did not know the parent brand, which would prevent them from transferring any brand associations from the parent brand to the extension product (i.e., the essence of a brand extension strategy). Furthermore, we checked for obvious instances of yeasaying and discarded respondents with a uniform response style (i.e., standard deviation of a person's responses across all items = 0). These steps led us to exclude 318 responses, for a final effective sample of 2,177 cases.

A comparison of this sample to the adult population in Germany reveals that the respondents' demographics are similar to those of the overall population. Specifically, 59.6% of the respondents are women (51.6% in the German population) and 40.4% are men. In terms of age, 51.8% of the sample are 18–34 years of age (24.5% in the German population), 33.6% are 35–55 years (39.5%), and 14.6% are older than 55 years (36%). The overrepresentation of the youngest age group might be attributed to the greater Internet penetration among and use by these consumers. We refrain from weighting the sample elements, as our interest centers on construct associations (not descriptive insights), which are clearly less sensitive to sample deviations.

### Measures

We use the multi-item scales developed by Brady and Cronin (2001) to measure the three parent brand quality constructs of interaction, physical environment, and outcome quality. We use 7-point agreement scales (1 = *strongly disagree* to 7 = *strongly agree*) in all cases.

**Table 1.** Parent Service Brands and Associated Hypothetical Extension Industries

Parent Brand	Parent Brand Category	Categories of Hypothetical Extension Services
A	Banking service	Travel agency (2.27), hotel (2.54), and Internet provider (3.18)
B	Travel agency	Banking service (3.05), tanning service (3.27), and car rental (4.94)
C	Fast food restaurant	Hairdresser (1.90), dry cleaning (2.72), and theme park (4.97)
D	Full-service restaurant	Shoe repair (1.49), amusement park (3.20), and cooking school (4.84)
E	Coffee shop	Spa (2.52), Internet provider (2.56), and restaurant (5.08)
F	Hotel	Car rental (3.78), musical theater (4.04), and travel agency (4.91)
G	Car rental	Car repair (4.01), hotel (4.41), and travel agency (4.44)
H	Movie theater	Hairdresser (1.95), gym (2.63), and fast food restaurant (4.77)
I	Telecommunication	Holiday complex (2.04), photo processing (2.84), and banking service (3.22)

Note. Mean values of perceived fit in parentheses.

To measure consumers' parent brand conviction and perceived parent brand-extension fit, we used measurement scales from previous studies. Specifically, we measured consumers' parent brand conviction by asking consumers to indicate their liking of the parent service brand, their trust in it, and their relatedness to the parent service brand (Kirmani, Sood, and Bridges 1999). The perceived overall fit measure asked participants to rate (a) the similarity of the brand extension to the parent brand (1 = *not very similar* to 7 = *very similar*); (b) the perceived usefulness of the company's people, facility, and skills in making a product in the extension category (1 = *not at all helpful* to 7 = *very helpful*); and (c) the relevance of the brand-specific associations in the extension product category (1 = *not at all relevant* to 7 = *very relevant*; Völckner and Sattler 2006).

We acknowledge the potential complexity of the overall fit between a parent brand and its extension, but we follow prior work and conceptualize the three measurement items as reflections of the underlying construct. Brands and products represent cognitive categories in consumer memory. A brand extension is a new instance that can be more or less similar to the parent brand. If the extension is perceived as similar to the parent brand, consumers identify it as belonging to the previously defined category of the brand, and the attitude associated with that category affects consumers' evaluations of the new instance (e.g., Boush and Loken 1991). That is, the perception of overall fit or "match" should influence consumers' evaluations of its different facets, such that changes in perceived overall fit alter perceptions of the parent brand's ability to make a product in the extension category or the relevance of the parent brand associations in the extension category. Each item therefore represents an imperfect but reliable reflection of the perceived overall fit between the parent brand and the extension category. Our study's results support this assumption, in that we attain a Cronbach's  $\alpha$  of .85, a composite reliability value of .90, and average variance extracted of .75.

For the model's outcome variable, we conceptualize extension success in terms of consumers' estimated quality of the extension, consistent with prior work (e.g., Dacin and Smith 1994; Völckner and Sattler 2006). As with parent brand quality, the specific characteristics of services (i.e., compared with goods in general and FMCGs in particular) require a specific

understanding and conceptualization of the concept of the quality of the extension (Iacobucci 1998). We therefore employed the multi-item scales developed by Brady and Cronin (2001) to measure the three quality constructs of interaction, physical environment, and outcome quality, as well as the expected overall service quality of the extension. The latter is formed by its dimensions: interaction quality, physical environment quality, and outcome quality. The study's measures for the brand extension driver constructs and the model's outcome variable appear in the Appendix.

## Method and Results

### Method

We apply PLS structural equation modeling (SEM) to estimate our theoretical model using the software application SmartPLS (Ringle, Wende, and Will 2005). PLS is particularly appropriate when the model is complex (i.e., large number of latent and/or manifest variables; Wold 1985) because it does not lead to estimation problems or improper or nonconvergent results (Henseler, Ringle, and Sinkovics 2009). Also, PLS path modeling results include latent variable scores (e.g., Wold 1982), which are required for providing diagnostic information about service brand extension success and our attempt to execute an importance performance analysis.

We present the results in four steps. First, we briefly describe the results of our measurement model assessment. Second, we discuss the estimation results of the basic model depicted in Figure 1. Third, we test for several potential interaction effects. Fourth, we report the results of a three-group PLS analysis in which we divide our sample of parent service brands into three taxonomic groups of services and estimate the model for each group.

### Measurement Model Evaluation

We report, in Table 2, the correlation matrix of all measurement items of the conceptual model from Figure 1. The Cronbach's  $\alpha$ s of the model constructs range from .85 to .96 (see the Appendix). The loadings of all items on their factors are significant ( $p < .01$ ) and greater than .7, which ensures indicator reliability. The PLS model estimation reveals that all model constructs exhibit

**Table 2.** Correlation Matrix of Measurement Items in the Conceptual Model

	Parent Brand Interaction Quality			Parent Brand Physical Environment Quality			Parent Brand Outcome Quality			Parent Brand Conviction			Fit			Extension Interaction Quality			Extension Physical Environment Quality			Extension Outcome Quality			Overall Extension Service Quality		
	PIQ1	PIQ2	PIQ3	PPQ1	PPQ2	PPQ3	POQ1	POQ2	POQ3	PC1	PC2	PC3	F1	F2	F3	EIQ1	EIQ2	EIQ3	EPQ1	EPQ2	EPQ3	EQQ1	EQQ2	EQQ3	OQ1	OQ2	OQ3
PIQ1	1	.86	.76	.46	.49	.49	.60	.61	.43	.40	.35	.22	.22	.16	.47	.44	.40	.32	.35	.35	.44	.40	.43	.46	.46	.45	
PIQ2		1	.77	.46	.48	.48	.56	.57	.42	.40	.35	.19	.20	.15	.43	.42	.37	.30	.32	.32	.38	.37	.39	.41	.41	.41	
PIQ3			1	.47	.50	.50	.60	.61	.35	.40	.37	.24	.23	.16	.43	.44	.47	.30	.33	.33	.42	.40	.42	.42	.43	.43	
PPQ1				1	.88	.85	.51	.57	.37	.37	.31	.15	.19	.12	.43	.45	.39	.46	.45	.44	.42	.40	.39	.47	.47	.44	
PPQ2					1	.93	.55	.60	.38	.38	.32	.15	.18	.11	.45	.47	.41	.46	.48	.49	.43	.43	.41	.48	.48	.48	
PPQ3						1	.57	.61	.38	.38	.31	.15	.19	.10	.45	.47	.42	.46	.49	.50	.43	.44	.41	.48	.47	.49	
POQ1							1	.81	.42	.46	.40	.23	.21	.14	.47	.49	.47	.35	.39	.40	.51	.48	.51	.49	.50	.51	
POQ2								1	.46	.51	.43	.22	.21	.17	.49	.48	.47	.39	.42	.42	.50	.48	.49	.50	.50	.50	
POQ3									.45	.49	.43	.24	.22	.14	.50	.51	.50	.37	.41	.41	.52	.49	.52	.51	.51	.52	
PC1									1	.83	.73	.18	.18	.17	.34	.33	.31	.28	.28	.29	.36	.34	.35	.39	.37	.37	
PC2										1	.86	.18	.16	.17	.31	.30	.31	.28	.25	.24	.33	.33	.33	.35	.33	.35	
PC3											1	.17	.13	.16	.27	.25	.29	.25	.25	.24	.30	.29	.31	.31	.30	.29	
F1												1	.73	.68	.28	.28	.27	.19	.23	.22	.26	.28	.26	.29	.29	.31	
F2													1	.52	.30	.30	.27	.22	.27	.28	.28	.32	.27	.32	.31	.34	
F3														1	.20	.19	.18	.13	.18	.16	.20	.21	.19	.21	.22	.22	
EIQ1															1	.85	.70	.58	.59	.58	.66	.64	.61	.72	.72	.69	
EIQ2																1	.72	.57	.63	.62	.66	.67	.63	.71	.71	.73	
EIQ3																	1	.47	.51	.52	.60	.61	.61	.60	.61	.61	
EPQ1																		1	.84	.80	.59	.60	.55	.68	.67	.63	
EPQ2																			1	.90	.60	.65	.56	.69	.67	.70	
EPQ3																				1	.60	.67	.56	.68	.66	.73	
EOQ1																					1	.80	.81	.79	.77	.75	
EOQ2																						1	.77	.74	.74	.78	
EOQ3																							1	.74	.75	.72	
OQ1																								1	.90	.85	
OQ2																									1	.84	
OQ3																										1	

Notes: Order of measurement items in this table equals order of measurement items in the Appendix. All correlations are significant ( $p < .05$ ).



satisfactory internal consistency. Composite reliability values range from .90 to .97 and average variance extracted (AVE) estimates range from 75% to 91% (Bagozzi and Yi 1988).

In addition, we test the discriminant validity of the nine latent variables in the PLS model using the criterion of Fornell and Larcker (1981)—a latent variable should share more variance with its assigned indicators than with any other latent variable. In statistical terms, the AVE of each latent variable should be greater than the latent variable's highest squared correlation with any other latent variable. As we show in Table 3, each of the latent variables meets these requirements, in support of discriminant validity.

### Testing the Hypotheses

The percentages of explained variance ( $R^2$  values) for the extension's interaction quality, physical environment quality, outcome quality, and overall service quality are .38, .29, .37, and .79, respectively. We apply a nonparametric bootstrapping procedure (500 subsamples; 2,177 cases; no sign change) to evaluate the significance of the path coefficients (Davison and Hinkley 1997; Henseler, Ringle, and Sinkovics 2009); we provide the path estimates in Table 4.

In Hypotheses 1-3, we postulate that the three dimensions of parent brand quality—interaction quality, physical environment quality, and outcome quality—have positive effects on consumers' perceptions of extension quality. The impact of the three dimensions of parent brand quality is positive and significant in most cases ( $p < .05$ ). The only path for which we find no support is from the parent brand's interaction quality to the physical environment quality of the extension. Thus, the results provide full support for Hypothesis 2 and Hypothesis 3 and partial support for Hypothesis 1.

With Hypothesis 4, we investigate the effect of consumers' parent service brand conviction on perceived extension quality. We find significant but weak positive effects of parent service brand conviction on the physical environment quality of the extension ( $\beta = .06, p < .01$ ) and the extension's outcome quality ( $\beta = .07, p < .01$ ), whereas brand conviction does not affect the extension's interaction quality. Thus, Hypothesis 4 receives partial support. Furthermore, in line with prior research in the consumer goods domain, we find that parent brand interaction quality, parent brand physical environment quality, and parent brand outcome quality all have positive impacts on parent brand conviction ( $p < .01$ ); parent brand conviction appears to accumulate perceived service quality over time.

Finally, we propose in Hypothesis 5 that fit influences consumers' perceptions of service extension quality, and we find that the fit between the parent service brand and the extension has a strong positive impact on the extension's interaction quality ( $\beta = .18; p < .01$ ), physical environment quality ( $\beta = .15; p < .01$ ), and outcome quality ( $\beta = .18; p < .01$ ).

We test the significance of the mediating effects emanating from the interaction quality of the extension, the outcome quality of the extension, and the physical environment quality of the extension, again applying a nonparametric bootstrapping

procedure (Preacher and Hayes 2008). Results show that all mediating effects are significant ( $p < .01$ ). All indirect effects through these three mediators have significant values between .062 and .266. For two driver variables—interaction quality of the parent service brand and parent brand-extension fit—the mediators indicate strong partial mediation, with variance accounted for (VAF; the indirect effect through the mediators divided by the total effect) 82.9% and 75.5%. For the three other drivers (i.e., outcome quality of the parent service brand, parent service brand conviction, and physical environment quality of the parent service brand), we find full mediation.

Although we do not aim to compare effect sizes statistically, the constructs' total effects (i.e., significant direct + indirect effects) on the overall service quality of the extension provide initial insights into the relevance of each driver, which might help service companies allocate their financial resources more effectively. We find the strongest relationships between the parent brand's physical environment quality and consumers' evaluations of the extension (total effect = .22) and the perceived outcome quality of the parent brand (total effect = .26), followed by interaction quality (total effect = .10). In other words, consumers' knowledge about the parent brand's servicescape and the parent brand's "technical" service encounter quality—or "what the customer is left with when the production process [of the parent brand product] is finished" (Grönroos 1984, p. 38)—provide the primary quality facets of brand extension success for service brands, followed by, to a somewhat lesser extent, the parent brand's employee-customer interface. In summary, consumers' knowledge of the parent brand on all three quality dimensions acts as an important surrogate for knowledge about the extension.

The total effect of fit is .17, which is clearly less than we find for the outcome and physical environment quality of the parent. These facets of the parent brand's service quality should be given special consideration during any planning to extend a service brand. The total effect of consumers' parent service brand conviction is .05, which falls well below the impacts of the three parent brand quality constructs and the fit variable.<sup>1</sup>

### Testing for Potential Moderation Effects

In addition to the theoretically hypothesized model paths illustrated in Figure 1, we test for potential moderating effects in an exploratory way. We perform this analysis for both fit and consumers' perceived risk of buying an unknown service.

*Fit as a moderator.* Prior research proposed that fit moderates the degree to which brand associations transfer from the parent brand to the extension, such that consumers prefer higher fit extensions (Aaker and Keller 1990; Bottomley and Holden 2001). Previous research shows that the positive effect of parent brand quality on extension success increases with the level of perceived fit (see, however, also the discussion by Aaker and Keller 1993). We therefore test for potential moderating effects between the three quality dimensions of the parent brand and fit on consumers' perceptions of the extension's quality.

**Table 3.** Discriminant Validity Analysis

	Interaction Quality of the PSB	Physical Environment Quality of the PSB	Outcome Quality of the PSB	PSB Conviction	Fit	Interaction Quality of the Extension	Physical Environment Quality of the Extension	Outcome Quality of the Extension	Overall Service Quality of the Extension
Interaction Quality of the PSB	<b>.84</b>								
Physical Environment Quality of the PSB	.27	<b>.91</b>							
Outcome Quality of the PSB	.42	.38	<b>.88</b>						
PSB Conviction	.19	.14	.24	<b>.85</b>					
Fit	.06	.03	.05	.04	<b>.75</b>				
Interaction Quality of the Extension	.24	.23	.29	.12	.10	<b>.82</b>			
Physical Environment Quality of the Extension	.12	.24	.18	.09	.07	.41	<b>.88</b>		
Outcome Quality of the Extension	.21	.20	.30	.13	.10	.54	.43	<b>.85</b>	
Overall Service Quality of the Extension	.22	.23	.27	.13	.11	.58	.55	.71	<b>.89</b>

Notes: PSB = parent service brand. Boldface values on the diagonal show the average variance extracted; numbers below the diagonal represent squared construct correlations.

**Table 4.** Structural Parameter Estimates

Determinants	Paths	Estimates (t-Values)
H <sub>1</sub>	Interaction quality of the parent service brand → Interaction quality of the extension	.17*** (6.99)
	→ Physical environment quality of the extension	.02ns (.73)
	→ Outcome quality of the extension	.11*** (4.34)
H <sub>2</sub>	Physical environment quality of the parent service brand → Interaction quality of the extension	.19*** (8.04)
	→ Physical environment quality of the extension	.35*** (13.96)
	→ Outcome quality of the extension	.14*** (5.67)
H <sub>3</sub>	Outcome quality of the parent service brand → Interaction quality of the extension	.26*** (9.68)
	→ Physical environment quality of the extension	.12*** (4.46)
	→ Outcome quality of the extension	.31*** (12.03)
H <sub>4</sub>	Parent service brand conviction → Interaction quality of the extension	.03ns (1.70)
	→ Physical environment quality of the extension	.06*** (2.84)
	→ Outcome quality of the extension	.07*** (3.55)
H <sub>5</sub>	Fit between the parent service brand and the extension → Interaction quality of the extension	.18*** (10.07)
	→ Physical environment quality of the extension	.15*** (7.91)
	→ Outcome quality of the extension	.18*** (10.12)
Interaction quality of the parent service brand Physical environment quality of the parent service brand Outcome quality of the parent service brand	→ Parent service brand conviction	.18*** (7.14)
	→ Parent service brand conviction	.10*** (3.68)
	→ Parent service brand conviction	.31*** (10.40)
Consumers' service brand extension evaluations:		.23*** (11.19)
Interaction quality of the extension	→ Overall service quality of the extension	.28*** (11.98)
Physical environment quality of the extension	→ Overall service quality of the extension	.50*** (21.68)
Outcome quality of the extension	→ Overall service quality of the extension	

\*\*\* Significant at the  $p < .01$  level. \*\* Significant at the  $p < .05$  level. ns: not significant.

This extension of the basic structural model includes the moderating effects between the three quality dimensions of the parent brand and fit on consumers' perceptions of the extension's interaction, physical environment, and outcome quality. We apply the product term approach proposed by Kenny and Judd (1984), which is appropriate for PLS models with reflective scales (Chin, Marcolin, and Newsted 2003; Henseler and Fassott 2010). The products of each indicator of the independent latent variable (i.e., perceived interaction quality, physical environment quality, and outcome quality of the parent brand) with each indicator of the latent moderator variable (i.e., fit) serve as indicators of the interaction term in the structural model.

Among the nine moderating effects tested, we find a statistically significant effect for only one interaction term: The positive effect of the parent brand's interaction quality on the perceived interaction quality of the extension increases as the level of perceived fit increases ( $\beta = .07$ ;  $p = .01$ ). However, the incremental variance explained by the interaction term is very small, which leads us to conclude that the interaction effects of fit with parent brand quality play a relatively minor role.

*Perceived risk as a moderator.* We also test for a potential moderating role of consumers' perceived risk of buying an

unknown service. Consumers' knowledge of the parent brand's quality may act as a surrogate for their knowledge about the extension service and reduce the uncertainty associated with the purchase of the extension service (Aaker and Keller 1990). Because the level of perceived risk varies across consumers, it might moderate the effects of parent brand quality and fit on perceived extension service quality. For example, the positive effect of fit on the perceived interaction quality of the extension likely increases as the level of risk that consumers perceive increases.

We measure perceived risk as the perceived quality uncertainty associated with unknown brands and the perceived negative consequences of buying an unknown brand that might fail to meet customers' expectations (e.g., DelVecchio 2000; Völckner and Sattler 2006). We test 15 interaction effects between perceived risk (AVE = .77, composite reliability = .87, Cronbach's  $\alpha = .73$ ) and the five driver constructs in the conceptual model (i.e., fit, parent brand interaction quality, parent brand physical environment quality, parent brand outcome quality, and parent brand conviction) on consumers' perceptions of the interaction quality, physical environment quality, and outcome quality of the extension. Again using the product term approach, we find only one statistically significant interaction term: The positive effect of fit on the perceived

interaction quality of the extension increases as the level of perceived risk increases ( $\beta = .05$ ;  $p < .01$ ). But again, the incremental variance explained by the interaction term is very small.

### **Robustness Check: The Role of Parent Service Brand Type**

Because our sample of parent brands encompasses different kinds of services, we test the robustness of our findings and compare the impact of the different drivers across parent service brand types employing the empirical taxonomy of services developed by Bowen (1990) to merge our nine parent service brands into three groups of services. The taxonomy comprises three groups of services. Group 1 consists of “high-contact, customized, personal services” (e.g., restaurants, hotels, real estate agencies), for which customers perceive the interaction with the service employees to be important and customer contact to be the highest among the three taxonomic groups; Group 2 consists of “moderate contact, semicustomized, nonpersonal services” (e.g., photo finishing, shoe repair, dry cleaning services), for which customers perceive the service to be directed at things and customer contact and the importance of employees are low; and Group 3 encompasses services directed at people, with a moderate importance of employees and employee-customer contact, which can be referred to as the “moderate contact, standardized service” group (e.g., fast food restaurants, cafeterias, movie theaters; Bowen 1990). Based on Bowen’s list of exemplary services, we assigned the parent brands B (travel agency), D (full-service restaurant), and F (hotel) to Group 1; parent brands A (banking service) and I (telecommunication) to Group 2; and the parent brands C (fast food restaurant), G (car rental), E (coffee shop), and H (movie theater) to Group 3.

We estimate the conceptual model for each group and then perform a multigroup comparison to assess whether the group-specific path coefficients differ significantly. The PLS multigroup analysis applies a permutation test procedure based on random assignments for the PLS path modeling, as described by Chin and Dibbern (2010). We present the results of the three-group PLS analysis in Table 5. Although only a limited number of paths differ significantly between the groups, we observe a general pattern of differences across the three service types.

First, the effect of parent brand extension fit on perceived extension quality is significantly weaker for Group 2 parent brands than for parent brands of Groups 1 and 3. Because the services in Group 2 are directed at things and involve only moderate employee-customer contact, it is difficult for consumers to assess the fit of the parent service brand with a new extension service; therefore, fit becomes less important for consumers’ extension evaluations.

Second, the influence of the perceived interaction quality of the parent service brand on parent service brand conviction (i.e., consumers’ liking of and trust in the parent brand) is significantly stronger for the high-contact services represented by Group 1 than for low-contact services (i.e., Groups 2 and 3). In the case of high-contact services, the customer-employee interaction is greatest and strongly influences consumers’

evaluations of the parent service brand, as well as their trust in and liking of the parent brand (i.e., parent brand conviction).

Third, the influence of the perceived outcome quality of the parent service brand on parent service brand conviction is less relevant for high-contact services (Group 1) than for moderate contact, standardized services (Group 3) or moderate contact services directed at things (Group 2). For standardized services and services directed at things, outcome dimensions such as consistency, performance, and price are most important to customers, so the outcome of the service provision should strongly influence their liking of and trust in the service brand.

### **Importance Performance Analyses**

Finally, to illustrate the diagnostic value of our model, we run a post hoc importance performance analysis for each of the 27 hypothetical service extensions (Slack 1994). This analysis builds on the PLS estimates for the relationships in the conceptual model (importance of each latent variable) and the latent variables’ average values (performance), which are available for PLS but not for covariance-based SEM approaches. Specifically, our importance performance analysis of the main outcome variable, the overall service quality of the extension, focuses on the importance of the five drivers of perceived extension quality depicted in Figure 1 and the performance of the 27 hypothetical extensions on these five constructs. To quantify importance, we consider the total effects of the estimated relationships in the PLS structural model for explaining the variance of the main outcome variable. To facilitate interpretation of the performance values, we rescale the indicators and unstandardized latent variable scores to range from 0 to 100, before computing their averages as representations of the extension’s performance (e.g., Anderson and Fornell 2000; Fornell et al. 1996).

We first address the predictive relevance of the PLS model and analyze the capability of its estimates to allow for data point predictions of the indicators in the measurement model for the outcome construct. Stone-Geisser’s  $Q^2$ , which we measure using the blindfolding procedure in PLS (Chin 1998), is .71 for the overall service quality of the extension, which signals that the model is of high predictive relevance.

We report, in Table 6, the results of the importance performance analyses. To improve the target construct’s outcome, managers should prioritize driver constructs with relatively greater importance and relatively lower performance. For example, if the index value (i.e., performance) of the physical environment quality of the parent brand increases by one unit, the performance of the overall service quality of the extension should increase by .22 points, *ceteris paribus*. In contrast, a hypothetical improvement in the index value of parent brand conviction enhances the target construct by only .05 points.

The importance performance analysis therefore offers a priority map for service brand management decisions. To exemplify this outcome, we use extension 15, namely, extending the parent brand (a coffee shop) into the restaurant category, which appears to be a good idea.

**Table 5. Three-Group PLS Analysis Testing Differences Between Parent Service Brand Types**

Determinants	Paths	Group 1 Estimates (t-Values)	Group 2 Estimates (t-Values)	Group 3 Estimates (t-Values)	Significant Differences
H <sub>1</sub> Interaction quality of the parent service brand	→ Interaction quality of the extension	.11** (2.29)	.15*** (2.92)	.18*** (5.55)	
	→ Physical environment quality of the extension	.01ns (.13)	.08ns (1.36)	-0.01ns (.29)	
	→ Outcome quality of the extension	.09ns (1.83)	.15*** (2.78)	.10*** (2.44)	
H <sub>2</sub> Physical environment quality of the parent service brand	→ Interaction quality of the extension	.23*** (5.57)	.17*** (3.89)	.19*** (5.23)	G12
	→ Physical environment quality of the extension	.43*** (10.10)	.24*** (4.67)	.34*** (8.63)	
	→ Outcome quality of the extension	.20*** (4.62)	.14*** (3.32)	.07ns (1.79)	
H <sub>3</sub> Outcome quality of the parent service brand	→ Interaction quality of the extension	.25*** (5.35)	.29*** (5.92)	.19*** (4.59)	
	→ Physical environment quality of the extension	.14*** (2.85)	.13** (2.28)	.13*** (3.12)	
	→ Outcome quality of the extension	.27*** (5.97)	.34*** (6.92)	.31*** (7.31)	
H <sub>4</sub> Parent service brand conviction	→ Interaction quality of the extension	.00ns (.002)	.06ns (1.40)	.05ns (1.67)	
	→ Physical environment quality of the extension	.05ns (1.35)	.07ns (1.56)	.07** (1.90)	
	→ Outcome quality of the extension	.04ns (1.05)	.09*** (2.35)	.09*** (2.94)	
H <sub>5</sub> Fit between the parent service brand and the extension	→ Interaction quality of the extension	.24*** (6.63)	.09*** (2.49)	.19*** (7.40)	G12, G23
	→ Physical environment quality of the extension	.19*** (5.40)	.04ns (.86)	.19*** (6.64)	
	→ Outcome quality of the extension	.19*** (5.08)	.10*** (2.98)	.22*** (8.04)	
Interaction quality of the parent service brand	→ Parent service brand conviction	.39*** (8.94)	.10** (2.10)	.11*** (3.21)	G12, G13
	→ Parent service brand conviction	.07ns (1.51)	-.001ns (.03)	.17*** (4.56)	
	→ Parent service brand conviction	.11** (2.13)	.43*** (8.20)	.30*** (6.89)	
Consumers' service brand extension evaluations:	→ Overall service quality of the extension	.24*** (6.92)	.26*** (6.41)	.18*** (6.35)	
	→ Overall service quality of the extension	.35*** (10.32)	.24*** (4.98)	.28*** (10.47)	
	→ Overall service quality of the extension	.41*** (11.60)	.50*** (10.62)	.53*** (16.31)	

Notes: The column "Significant Differences" shows whether the corresponding path coefficients significantly differ between groups. For example, G12 indicates that there is a significant ( $p < .05$ ) difference between Groups 1 and 2 with regard to the corresponding path coefficient.  
 \*\*\* Significant at the  $p < .01$  level. \*\* Significant at the  $p < .05$  level. ns: not significant.



**Table 6.** Importance Performance Analysis to Illustrate the Diagnostic Value of the Tested Model

		Outcome Quality of Parent Service Brand	Physical Environment Quality of Parent Service Brand	Interaction Quality of Parent Service Brand	Parent Service Brand Conviction	Fit	
Importance (total effects):		.26	.22	.10	.05	.17	
Parent Brand Category	Extension Category	Performance (rescaled latent variable scores index values)					
1	Banking service	Travel agency	47.79	59.02	47.75	37.08	21.56
2	Banking service	Hotel	50.74	57.50	48.89	37.80	25.89
3	Banking service	Internet provider	49.70	58.18	50.11	34.42	36.67
4	Travel agency	Banking service	58.18	58.33	53.90	44.50	34.23
5	Travel agency	Tanning service	58.45	57.34	53.47	40.70	38.11
6	Travel agency	Car rental	56.90	56.99	52.83	41.09	65.82
7	Fast food restaurant	Hairdresser	50.44	47.07	42.92	36.92	15.21
8	Fast food restaurant	Dry cleaning	48.15	45.95	41.53	37.21	28.85
9	Fast food restaurant	Theme park	52.00	48.75	41.64	39.24	66.51
10	Full-service restaurant	Shoe repair	67.83	60.60	59.36	47.51	8.33
11	Full-service restaurant	Amusement park	64.81	57.67	58.65	49.12	37.02
12	Full-service restaurant	Cooking school	69.52	60.87	61.38	52.19	64.39
13	Coffee shop	Spa	68.01	69.32	59.09	49.22	25.60
14	Coffee shop	Internet provider	68.42	67.95	57.95	47.85	26.14
15	Coffee shop	Restaurant	65.44	65.47	56.65	47.16	68.27
16	Hotel	Car rental	68.92	77.14	63.06	47.23	46.85
17	Hotel	Musical theater	76.34	79.93	65.43	55.07	51.11
18	Hotel	Travel agency	74.75	78.35	65.36	52.26	65.50
19	Car rental	Car repair	66.59	57.84	57.48	50.93	50.76
20	Car rental	Hotel	65.95	57.37	57.12	48.57	57.26
21	Car rental	Travel agency	66.79	55.77	56.37	51.14	57.74
22	Movie theater	Hairdresser	64.07	66.54	53.10	43.86	16.11
23	Movie theater	Gym	63.26	65.26	52.69	47.09	27.56
24	Movie theater	Fast food restaurant	65.12	64.26	56.46	47.65	63.33
25	Telecommunication	Holiday complex	37.84	50.36	35.78	37.53	17.60
26	Telecommunication	Photo processing	38.51	46.95	33.89	39.93	30.98
27	Telecommunication	Banking service	37.27	46.13	33.93	36.74	37.38

The parent service brand achieves a relatively high performance value (65.44) for the outcome quality of the parent service brand, which is the most important driver of consumers' perceptions of the overall service quality of the extension (total effect = .26). Managers should work to maintain this performance level. Almost the same findings apply to the physical environment quality of the parent service brand, the second most important driver of the perceived overall service quality of the extension (total effect = .22). Fit is only the third priority, with a total effect of .17, but the high performance level in this area (68.27) indicates a good match between the parent brand and the extension category. Finally, the current performance level of interaction quality of the parent brand (56.65) indicates potential for increasing consumers' perceptions of the overall quality of the extension by improving the parent brand's interaction quality. Managers of this particular brand should be concerned with marketing and training activities aimed at frontline employees of the parent service brand (e.g., Bowen 1990).

In contrast, the importance performance analysis for Extension 1 shows that extending the parent brand (banking service) into the travel agency category would be very risky. The low performance level of the parent brand's outcome quality indicates that a major effort would be needed to ensure acceptable

quality perceptions of the extension. In addition, the low fit rating implies an insufficient match of the parent service brand with the travel agency category. Overall, the low performance levels for important drivers mean that managers of this parent service brand would benefit from abstaining from this extension.

## Discussion and Implications

This research introduces a context-specific measure of service quality based on the hierarchical model of service quality of Brady and Cronin (2001) and models its impact on consumers' evaluations of brand extensions. The model distinguishes among the three parent brand quality dimensions of the service outcome, customers' interactions with service employees, and the physical service environment and tests their respective influences on service extensions using a PLS estimation. We use these PLS results to develop a priority map that managers can use to diagnose—among others—the impact of the three dimensions of perceived parent brand quality on the perceived quality of the extension.

Comparing our results with previous service brand extension research, which has applied quality measurement scales

developed in the FMCG context, reveals several interesting results. The prior research claims that fit is the dominant driver of brand extension success (e.g., Hem, de Chernatony, and Iversen 2003; Van Riel, Lemmink, and Ouwersloot 2001; Van Riel and Ouwersloot 2005) yet, we find that perceived parent brand quality—which consists of outcome quality, physical environment quality, and interaction quality—has the strongest effect. Our results also are consistent with extant findings, in that perceived fit still exerts a substantial effect on brand extension success.

This empirical study supports the appropriateness of service-specific construct conceptualizations. The three dimensions of parent brand quality constitute distinct constructs that should be considered separately when assessing the chances of service brand extension success. Although we find that all three dimensions of parent brand quality are influential, outcome quality has the strongest impact on service brand extension success. In addition to its direct impact, parent brand quality influences extension success through consumers' parent brand conviction. We also find that the effects of parent service brand quality, parent service brand conviction, and fit on consumers' perceptions of extension quality vary somewhat by the service type of the parent brand.

Several managerial implications therefore emerge from this research. We undertake an importance performance analysis to offer a priority map to guide managerial decisions. Our model might help managers understand how their customers assess new service brand extensions. The study provides insights into the different dimensions of parent brand quality that influence customers' extension evaluations in the service industry, and managers should attend to these dimensions when they attempt to extend existing parent brands into new service categories. Service providers that plan to extend their parent brand should emphasize in their brand communications the parent brand's quality, in terms of the technical outcome of the service encounter, the physical environment, and—to a lesser degree—the interpersonal interactions.

Furthermore, our findings show that consumers evaluate service extensions more favorably if they perceive some level of fit between the parent brand and the extension. The appropriate selection of an extension category directly affects fit, though advertisements might increase the salience of crucial service quality associations with the parent brand, which can help consumers infer extension benefits and understand better how the extension fits. Consumers likely infer such fit judgments when an advertisement illustrates, for example, how the parent brand's attributes improve the extension's ability to provide quality benefits.

Moreover, our findings suggest key implications for research. First, the results of our empirical study differ from those obtained by service brand extension studies that apply measurement scales developed in the goods context. Although parent brand quality remains a dominant factor in driving consumers' evaluations of service brand extensions, other variables might influence brand extension success as well. Some appear in prior service context studies (e.g., corporate image, perceived risk, and consumer innovativeness; e.g., Hem, de Chernatony, and Iversen 2003; Martínez and Pina 2005), but no empirical studies

propose or apply service-specific conceptualizations and measurement scales for these potential determinants.

Second, though we choose a diverse range of extension categories, the scales might be applied to other service categories. An even broader range of categories would allow for a more profound test of the relevance of parent brand outcome quality, physical environment quality, interaction quality, fit, and parent brand conviction across different types of services. We also find that our sample differs from the country's overall population to a certain degree. However, our focus on testing structural (versus descriptive) effects puts less weight on sampling issues in general.

Third, the fact that our respondents are from a single country (i.e., Germany) raises the question to which extent our results can be generalized for other countries. We encourage additional studies to investigate the importance of cultural differences in consumers' evaluations of service brand extensions. For consumer goods, Bottomley and Holden (2001) provide some insight into this question by analyzing the international generalizability of the model of Aaker and Keller (1990). They find uniformly strong effects of fit and parent brand quality across cultures. Although this indicates that cultural differences do not affect the importance of fit and parent brand quality for goods, one can only speculate about whether this holds also for services.

Additional studies also could go beyond the concept of the service quality of the extension and link the findings with the concept of customer equity, widely considered a key variable in customer management (e.g., Rust, Lemon, and Narayandas 2005). Exploring such links between brand extension research and customer equity would be particularly valuable, because a limited number of studies have drawn connections between branding and customer management or explored the similarities and differences between the two concepts.

## Notes

1. The importance of variables may depend on the range of their measurement in a particular study (i.e., "range effect;" von Nitzsch and Weber 1993). We analyze the unstandardized latent variable scores of our exogenous constructs and find that the scale's minimum and maximum values are the same across all constructs; furthermore, the difference between the 75% and the 25% quartile is three for the fit and nearly two for the other latent variables. That is, if any range effect exists for the importance of fit, it would lead us to overestimate, not underestimate, its importance, given the larger quartile difference for fit. Even with the higher quartile difference for fit, we find that perceived parent brand quality has the strongest effect of all the driver variables, and any potential range effect of fit further substantiates this finding.

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## Declaration of Conflicting Interests

The author(s) declared no conflicts of interest with respect to the authorship and/or publication of this article.

## Appendix: Measurement Items for the Constructs in the Conceptual Model

Items	Mean	Standard Deviation
<b>Parent brand interaction quality*</b> (Cronbach's Alpha = .92; Composite Reliability = .94; AVE = .84)		
Overall, I'd say the quality of my interaction with this firm's employees is excellent.	4.28	1.41
I would say that the quality of my interaction with XY's employees is high.	4.20	1.45
It is fun to interact with the firm's employees.	3.97	1.44
<b>Parent brand physical environment quality*</b> (Cronbach's Alpha = .96; Composite Reliability = .97; AVE = .91)		
I would say that XY's physical environment is one of the best in its industry.	4.51	1.48
I would rate XY's physical environment highly.	4.57	1.44
Overall, I would say that I have a very good impression of XY's physical environment.	4.66	1.41
<b>Parent brand outcome quality*</b> (Cronbach's Alpha = .94; Composite Reliability = .96; AVE = .88)		
I always have an excellent experience when I visit XY.	4.46	1.58
I feel good about what XY provides to its customers.	4.70	1.43
So far, I always rated XY's service highly.	4.45	1.56
<b>Parent brand conviction*</b> (Cronbach's Alpha = .93; Composite Reliability = .94; AVE = .85)		
In evaluating a new [service category] service, I could trust [brand name].	3.84	1.56
[Brand name] is a likeable brand.	3.75	1.59
I relate to [brand name].	3.38	1.60
<b>Fit between the parent brand and the extension</b> (Cronbach's Alpha = .85; Composite Reliability = .90; AVE = .75)		
How similar are [brand name] and [extension]? (1 = "not very similar", 7 = "very similar")	3.37	2.06
Would the people, facilities, and skills used in making the original product be helpful if the manufacturer were to make the extension product? (1 = "not at all helpful", 7 = "very helpful")	4.11	1.98
Extent to which parent-brand-specific associations are relevant in the extension category: Step 1: stating of brand associations; Step 2: relevance of these associations in the extension category (1 = "not at all relevant", 7 = "very relevant").	2.68	1.96
<b>Extension interaction quality*</b> (Cronbach's Alpha = .90; Composite Reliability = .93; AVE = .82)		
Overall, I'd expect the quality of my interaction with [extension]'s employees to be excellent.	4.39	1.36
I expect the quality of my interaction with [extension]'s employees to be high.	4.53	1.38
I expect the interaction with the [extension]'s employees to be fun.	4.20	1.45
<b>Extension physical environment quality*</b> (Cronbach's Alpha = .94; Composite Reliability = .96; AVE = .88)		
I expect [extension]'s physical environment to be one of the best in its industry.	4.35	1.45
I expect to rate [extension]'s physical environment highly.	4.73	1.35
Overall, I expect to have a very good impression of [extension]'s physical environment.	4.85	1.37
<b>Extension outcome quality*</b> (Cronbach's Alpha = .92; Composite Reliability = .94; AVE = .85)		
I expect to always have an excellent experience when I visit [extension].	4.23	1.36
I expect to feel good about what [extension] provides to its customers.	4.57	1.32
I expect to always rate [extension]'s service highly.	4.03	1.40
<b>Overall extension service quality*</b> (Cronbach's Alpha = .95; Composite Reliability = .96; AVE = .89)		
I expect [extension] to provide superior service.	4.44	1.33
I expect [extension] to offer excellent service.	4.24	1.37
I expect [extension's] overall service quality to be excellent.	4.65	1.36

\*Participants evaluated each item using a seven-point Likert scale with strongly disagree (1) and strongly agree (7) as anchors.

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