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## A Meta-Analysis of Brand Extension Success

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# A Meta-Analysis of Brand Extension Success: The Effects of Parent Brand Equity and Extension Fit

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 and Hong Zhao

## Abstract

Given the high failure rates of brand extensions, insights into the drivers of brand extension success are critical for marketing practitioners and scholars. Prior research has inferred that parent brand equity and extension fit are the two key success drivers; however, empirical findings are mixed. Drawing on signaling theory, categorization theory, and a large database of 2,134 effect sizes from research spanning 1990–2020, the authors address these mixed findings through a meta-analysis to develop empirical generalizations. The results show that parent brand equity and extension fit positively influence extension success. However, the multifaceted dimensions of these two drivers have differential effects. For example, among the fit dimensions, usage fit has the weakest effect. While the results suggest an overall positive interaction effect between the two drivers, a fine-grained perspective that considers the drivers' various dimensions reveals differences. For example, brand familiarity appears to have a lower interaction effect with extension fit than the other dimensions of parent brand equity. Furthermore, the authors provide a comprehensive analysis of five groups of moderators: contextual factors (parent brand, extension, communication, and consumer factors) and research method factors. The authors offer managerial and future research implications for the design of brand extension strategies.

## Keywords

brand extension, meta-analysis, parent brand equity, extension fit, signaling theory, categorization theory, line extension, category extension

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Brand extensions are a popular strategy in many industries (Aaker and Keller 1990; Kim and Park 2019). Indeed, almost 70% of new products in the consumer packaged goods market are brand extensions (NielsenIQ 2019). Compared with using a new brand name, managers expect that introducing a new product under an existing brand name can reduce introduction costs, lower the risk of failure, and increase firm profit (Nielsen 2015). However, only 30% of all brand extensions in the U.S. consumer packaged goods market survive the first two years, a success rate similar to new brands (NielsenIQ 2019). Given this unexpectedly high failure rate of brand extensions (Duckler 2018; Su, Monga, and Jiang 2021; Völckner and Sattler 2006), obtaining insights into the drivers of brand extension success is of critical relevance to marketing practitioners and scholars.

More than 150 empirical studies have contributed to explaining brand extension success in the past 30 years. Prior research

has inferred that the equity of the parent brand and the fit between the extension product and the parent brand are the two key drivers of brand extension success, drawing on signaling theory for the effect of parent brand equity and categorization theory for the effect of extension fit (Hagtvedt and Patrick 2008; Sichtmann and Diamantopoulos 2013; Van Riel, Lemmink, and Ouwersloot 2001). Signaling theory suggests that parent brand equity is a positive information signal for

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the evaluation of an extension product, and categorization theory suggests that fit improves categorization processes and thereby provides more information for the evaluation of an extension product. However, empirical findings on the impact of parent brand equity and extension fit on brand extension success are mixed. Some studies have reported positive effects of parent brand equity (e.g., Bottomley and Holden 2001; Völckner and Sattler 2007), while others have found negative effects (e.g., Bottomley and Doyle 1996; Echambadi et al. 2006). Likewise, prior empirical results have shown that extension fit can be positively or negatively associated with brand extension success (e.g., Bottomley and Doyle 1996; Mao and Krishnan 2006). Accordingly, our database shows substantial variance in the effects of parent brand equity and extension fit on brand extension success in the literature. More specifically, for parent brand equity, we find 8.2% negative, 48.9% small and positive, 22.0% medium and positive, and 20.9% large and positive effects; for extension fit, we find 13.2% negative, 36.1% small and positive, 26.3% medium and positive, and 24.4% large and positive effects.<sup>1</sup>

Three reasons may account for these mixed findings. A first potential reason is that parent brand equity and extension fit are multifaceted (Keller 1993; Martin and Stewart 2001), and existing studies have focused on different dimensions. A second potential reason is that parent brand equity and extension fit interact with each other (Aaker and Keller 1990), so studies have found different effects for parent brand equity when not controlling for extension fit and vice versa. A third potential reason is that the effects of parent brand equity and extension fit are contingent on contextual factors and research method factors, such as communication factors (Martin, Stewart, and Matta 2005) and consumer factors (Czellar 2003).

In this article, we delve into these three reasons to address the mixed empirical findings and to synthesize the literature on brand extension success. Drawing on signaling theory and categorization theory, we formulate expectations regarding the effects. Next, we conduct a meta-analysis on brand extension success that integrates 708 effect sizes for parent brand equity and 1,426 effect sizes for extension fit from 147 independent samples from 124 papers over the 1990–2020 period. Milberg et al.'s (2023) recent meta-analysis examines the potentially harmful effects of brand extensions on parent brands—that is, the negative feedback effects of brand extensions. Our work complements their study as we conduct the first meta-analysis on forward effects—that is, the factors that influence the success of brand extensions—and, in doing so, makes three important contributions.

First, we develop empirical generalizations for the effects of parent brand equity and extension fit, as well as for their multifaceted dimensions, which have been rarely examined

simultaneously so far. Specifically, we show that in line with signaling theory and categorization theory, respectively, parent brand equity ( $r = .326$ ) and extension fit ( $r = .352$ ) each have a medium positive effect on brand extension success. Converting these correlations to common language effect sizes (CLESS; Dunlap 1994) yields a CLES of .606 for parent brand equity and a CLES of .614 for extension fit. CLES reflects the probability of having the same sign for the difference scores for parent brand equity (extension fit) and brand extension success between two randomly selected observations. Thus, if parent brand equity (extension fit) increases, the success of the brand extension will also improve, with a probability of 60.6% (61.4%). After controlling for a wide range of contextual factors and research method factors, we show that extension fit is slightly more important for brand extension success than parent brand equity, suggesting that categorization theory has more explanatory power for brand extension success than signaling theory. Furthermore, we find that the various dimensions of parent brand equity (familiarity, quality, attitude, and loyalty) and extension fit (feature fit, usage fit, and concept fit) have differential effects on brand extension success. For example, among the dimensions of extension fit, usage fit has the smallest effect.

Second, we provide insights into the interaction between parent brand equity and extension fit. In particular, we identify an overall positive interaction effect between the drivers. Spotlight analysis further shows that parent brand equity still has a positive (though small) effect ( $r_{\text{pred}} = .245$ ) on brand extension success even if the extension has a poor fit. Similarly, extension fit exerts a positive (though small) effect ( $r_{\text{pred}} = .273$ ) on brand extension success even if the extension has a low parent brand equity. These results reveal that although categorization theory seems to have more explanatory power, both signaling theory (for the parent brand equity effect) and categorization theory (for the fit effect) play a role in explaining brand extension success. Furthermore, a fine-grained perspective that considers the various dimensions of parent brand equity and extension fit reveals differences. For example, brand familiarity seems to have a lower interaction effect with extension fit than the other dimensions of parent brand equity.

Third, we provide a comprehensive understanding of the moderators of the effects of parent brand equity and extension fit by considering five groups of moderators: contextual factors (parent brand, extension, communication, and consumer factors) and research method factors. In particular, we find that categorization theory is more important in explaining brand extension success than signaling theory because categorization theory drives eight significant moderating effects, while signaling theory drives only one significant moderator. In addition, we uncover moderators that are important but have rarely been examined so far. For example, we reveal that parent brand equity is more effective in driving brand extension success for service parent brands ( $r_{\text{pred}} = .409$ ) than for goods parent brands ( $r_{\text{pred}} = .317$ ) and that extension fit is more relevant for nonprestige parent brands ( $r_{\text{pred}} = .355$ ) than for prestige

<sup>1</sup> Throughout the article, we use Cohen's (1992) widely accepted classification of effect sizes. A correlation is small if the absolute value is lower than .3, medium if the absolute value is between .3 and .5, and large if the absolute value is higher than .5.

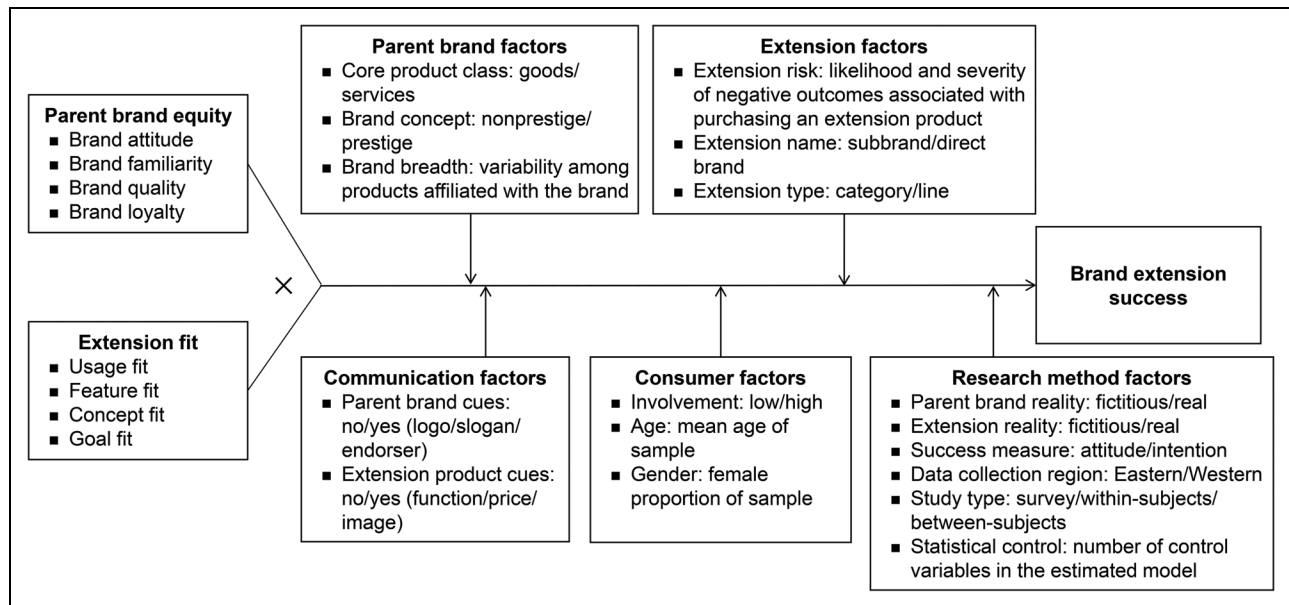


Figure 1. Conceptual Framework of the Meta-Analysis.

parent brands ( $r_{\text{pred}} = .105$ ). Moreover, our results offer several new empirical generalizations for the moderators of the effects of parent brand equity and extension fit. For example, contrary to the notion that the presence of product cues (e.g., price, product functions) reduces the importance of brands in consumers' evaluations of new products (Dick, Chakravarti, and Biehal 1990; Klink and Smith 2001), extension product cues ( $r_{\text{pred}} = .411$  vs.  $.298$  in the case of no extension product cues) actually enhance the effect of parent brand equity on brand extension success. Furthermore, we are the first to uncover the conditions under which parent brand equity is more (or less) important to brand extension success than extension fit, thus clarifying the previously mixed findings on the relative importance of these two drivers. For example, extension fit is more important for goods parent brands ( $r_{\text{pred}} = .342$  vs.  $.317$ ), while parent brand equity is more effective for service parent brands ( $r_{\text{pred}} = .409$  vs.  $.336$ ).

The remainder of this article proceeds as follows: First, we describe the theoretical background and key constructs of the research model. Second, we detail the methodological approach and present the findings. Finally, we discuss the theoretical and managerial implications and offer directions for future research.

## Conceptual Framework

We develop a conceptual framework, shown in Figure 1, from a review of the literature on brand extension success and summarize the entire set of expected relationships in Table 1. In this section, we present the building blocks of the conceptual framework. We briefly discuss the definitions of brand extensions and brand extension success. Then, drawing on signaling theory and categorization theory, we explain the expected main and

interaction effects of parent brand equity and extension fit and discuss the potential moderating effects.

## Definition of Brand Extension and Brand Extension Success

Two definitions of the term "brand extension" exist in the literature. In a relatively narrow definition, brand extension refers only to the extension of an established brand (i.e., the "parent brand") to a new product category (Aaker and Keller 1990; John, Loken, and Joiner 1998; Reddy, Holak, and Bhat 1994). In this sense, brand extensions are clearly distinguished from line extensions, which refer to the use of an existing brand to enter a new market segment in the parent brand's original product category with new varieties, models, or sizes. In a broader definition, brand extension refers to the use of an existing brand for new products within or beyond the parent brand's original product category (Lane 2000; Lane and Jacobson 1995). Thus, in this definition, brand extensions cover both line extensions and category extensions. Recent well-established textbooks and articles have adopted this broader definition (Keller and Kotler 2015, p. 343; Keller and Swaminathan 2019, p. 401; Milberg et al. 2023). As it allows us to examine the differences between line extensions and category extensions, we also adopt this broader definition of brand extensions.

In addition, the literature distinguishes two general types of naming strategies for brand extensions (Monga and John 2010; Sood and Keller 2012): direct branding (the use of the parent brand name without any affixes for the extension product, e.g., Rolex cameras) and subbranding (the combination of a new brand name and the parent brand name for the extension product, e.g., Excer cameras by Rolex). The scope

**Table 1.** Expected Relationships and Rationale.

Effects <sup>a</sup>	Expected Sign for the Effect on		Rationale	Relevant Theory	
	BE Success	PB Equity–BE Success Relationship			Extension Fit–BE Success Relationship
<b>Main and Interaction Effects</b>					
PB equity	+		PB equity is a positive information signal for the evaluation of an extension product, reducing perceived purchase risk.	Signaling	
			+	Fit facilitates the transfer of parent brand associations to an extension product and thus benefits BE success more if PB equity is high.	Categorization
Extension fit	+		Fit facilitates categorization processes and thereby makes it easier to evaluate an extension product, which reduces perceived purchase risk.	Categorization	
		+	Fit facilitates the transfer of parent brand associations to an extension product and thus increases the effect of PB equity on BE success.	Categorization	
<b>Moderating Effects of Parent Brand Factors</b>					
Core product class (goods vs. services)		+	Service brands involve more abstract associations, which makes it easier for consumers to classify an extension product as a member of the parent brand category, thereby		
			• benefiting the transfer of parent brand associations to the extension product, and	Categorization	
			• mitigating the differences between low- and high-fit extensions and reducing the importance of fit in facilitating categorization processes.	Categorization	
Brand concept (nonprestige vs. prestige)		+	Prestige brands with more abstract meanings		
			• facilitate the transfer of parent brand associations to an extension product, and	Categorization	
			• mitigate the differences between low- and high-fit extensions and reduce the importance of fit in facilitating categorization processes.	Categorization	
Brand breadth		+	With a broader parent brand, consumers can more easily make a connection between the brand and a new extension product, which		
			• benefits the transfer of parent brand associations to an extension product, and	Categorization	
			• reduces the importance of fit in facilitating categorization processes.	Categorization	
<b>Moderating Effects of Extension Factors</b>					
Extension risk		+	Because the signaling role of PB equity can reduce perceived risk, it should play a greater role in the evaluation of an extension when extension risk is high.	Signaling	

(continued)

Table 1. (continued)

Effects <sup>a</sup>	Expected Sign for the Effect on			Rationale	Relevant Theory
	BE Success	PB Equity–BE Success Relationship	Extension Fit–BE Success Relationship		
			+	Because facilitating categorization processes can reduce perceived risk, fit should play a greater role in the evaluation of an extension when extension risk is high.	Categorization
Extension name (subbrand vs. direct brand)		+		In a direct branding strategy, instead of a subbranding strategy, the parent brand name is the focal diagnostic cue, so consumers rely more strongly on <ul style="list-style-type: none"> <li>the signaling role of PB equity, and</li> <li>the categorization role of fit.</li> </ul>	Signaling Categorization
Extension type (category vs. line)		+		Line extensions have more similarities to the parent brand than category extensions and therefore <ul style="list-style-type: none"> <li>facilitate the transfer of parent brand associations to an extension product, and</li> </ul>	Categorization
			–	<ul style="list-style-type: none"> <li>mitigate the differences between low- and high-fit extensions and reduce the importance of fit in facilitating categorization processes.</li> </ul>	Categorization
<b>Moderating Effects of Communication Factors</b>					
Parent brand cues		+		Parent brand cues make the parent brand more accessible in consumers' minds, which <ul style="list-style-type: none"> <li>benefits the transfer of parent brand associations to the extension product, and</li> </ul>	Categorization
			–	<ul style="list-style-type: none"> <li>helps create a link between the parent brand and the extension, reducing the importance of fit in facilitating categorization processes.</li> </ul>	Categorization
Extension product cues		–		When extension product cues are available, the signaling role of PB equity becomes less relevant.	Signaling
			–	When extension product cues are available, the role of fit in facilitating categorization processes becomes less relevant.	Categorization
<b>Moderating Effects of Consumer Factors</b>					
Involvement		–		Consumers with high levels of involvement engage in more effortful information processing, which <ul style="list-style-type: none"> <li>reduces the importance of the signaling role of PB equity, and</li> </ul>	Signaling
			–	<ul style="list-style-type: none"> <li>mitigates the differences between low- and high-fit extensions and reduces the importance of fit in facilitating categorization processes.</li> </ul>	Categorization

(continued)

**Table 1. (continued)**

Effects <sup>a</sup>	Expected Sign for the Effect on			Rationale	Relevant Theory
	BE Success	PB Equity–BE Success Relationship	Extension Fit–BE Success Relationship		
Age		+	+	For older consumers, learning and processing new information is more difficult; therefore, when evaluating a new extension product, they are more likely to rely on <ul style="list-style-type: none"> <li>existing parent brand associations, which strengthens the signaling role of PB equity, and</li> <li>the fit between the parent brand and the extension product to facilitate categorization processes.</li> </ul>	Signaling Categorization
Gender		–	–	Women engage in more effortful information processing when evaluating a new stimulus; therefore, when evaluating a new extension product, they rely less on <ul style="list-style-type: none"> <li>the signaling role of the parent brand, and</li> <li>perceive smaller differences between low- and high-fit extensions, reducing importance of fit in facilitating categorization processes.</li> </ul>	Signaling Categorization

<sup>a</sup>We do not formulate expectations for research method factors but treat them as control variables.  
Notes: PB = parent brand, BE = brand extension.

of this meta-analysis contains studies on both direct branding and subbranding, and we investigate potential differences between these two types of naming strategies.

Finally, in line with prior studies (Aaker and Keller 1990; Sichtmann and Diamantopoulos 2013), we define brand extension success as consumers’ attitudes and behavioral intentions toward a brand extension. This definition reflects how consumers evaluate a brand extension product and is the most commonly used definition in the literature. We explore potential differences between attitudinal and behavioral outcome variables.

**Main and Interaction Effects of Parent Brand Equity and Extension Fit**

**Parent brand equity.** Brand equity represents the incremental value added to a product by its brand name (Kamakura and Russell 1993; Park and Srinivasan 1994; Rangaswamy, Burke, and Oliva 1993). Brand equity is a multifaceted construct. Drawing from prior literature (Aaker 1996; Aaker and Jacobson 2001; Keller 1993; Yoo, Donthu, and Lee 2000), we recognize four important dimensions of parent brand equity (see Table 2): brand attitude, brand familiarity, brand quality, and brand loyalty.

Brand extensions are new offerings on the market, so consumers cannot assess extensions in advance, leading to a lack of information (Connelly et al. 2011) and perceived risk in purchasing

them (Klink and Smith 2001). Signaling theory suggests that consumers use extrinsic cues as signals to make product evaluations and reduce purchase risk when information about products’ intrinsic attributes (e.g., quality of ingredients) is not easily accessible, is not readily understandable, or can only be obtained at high costs (Dawar and Parker 1994). In this sense, the equity of a parent brand is an important information signal for evaluating an extension (Erdem and Swait 1998; Smith and Park 1992; Wernerfelt 1988). Given the signaling role of parent brand equity, we expect that parent brand equity and, thus, its dimensions have a positive effect on brand extension success.

**Extension fit.** Extension fit captures the degree of perceived similarity between an extension and its parent brand and is also a multifaceted construct, comprising usage fit, goal fit (e.g., match in consumption purpose), feature fit, and concept fit (Martin and Stewart 2001; Martin, Stewart, and Matta 2005; see Table 2). Categorization theory posits that consumers classify objects into distinct mental categories, which helps them reduce complexity and better organize information processing (Rosch and Mervis 1975). Parent brands are mental categories stored in consumers’ minds (Puligadda, Ross, and Grewal 2012). When a new object is similar to an existing mental category, consumers can quickly, easily, and efficiently categorize and process the object (Landwehr, Wentzel, and Herrmann 2013; Mervis and Rosch 1981). As a result, they consider the

**Table 2.** Descriptions of Parent Brand Equity, Extension Fit, and Their Dimensions.

Construct	Definition	Common Aliases	Exemplary Articles
Parent brand equity	The incremental value added to a product by its brand name, which consists of the following four dimensions (Aaker 1996; Aaker and Jacobson 2001; Keller 1993; Yoo, Donthu, and Lee 2000).		
Brand attitude	Overall evaluation of a parent brand	Brand evaluation, brand strength, brand reputation	Lane and Jacobson (1995)
Brand familiarity	Consumers' ability to identify the brand in terms of brand recall and brand recognition	Brand knowledge, brand awareness	Broniarczyk and Alba (1994)
Brand quality	Performance-related values of a parent brand's offerings	Functional value	Aaker and Keller (1990)
Brand loyalty	Consumers' devotion to a parent brand's offerings	Brand commitment	He et al. (2016)
Extension fit	Perceived similarity between a parent brand and an extension product, which consists of the following four dimensions (Martin and Stewart 2001; Martin, Stewart, and Matta 2005).		
Usage fit	Shared product usage contexts	Complementarity, substitutability	Aaker and Keller (1990)
Goal fit	Shared associations organized around common goals	—	Martin and Stewart (2001)
Feature fit	Shared tangible product characteristics	Transferability	Park, Milberg, and Lawson (1991)
Concept fit	Shared abstract brand images	Image fit, association fit	Park, Milberg, and Lawson (1991)

object predictable and perceive a lower risk when evaluating it (Chang, Lin, and Chang 2011; Meyers-Levy and Tybout 1989; Veryzer and Hutchinson 1998). Because a higher fit means more similarities between an extension and its parent brand (Mathur et al. 2023), extension fit helps consumers categorize, process, and evaluate an extension product. We therefore expect that extension fit and, thus, its dimensions have a positive effect on brand extension success.

#### *Interaction between parent brand equity and extension fit.*

According to categorization theory, if consumers group a new object into a particular mental category, they retrieve the corresponding category associations and transfer them to the new object (Mervis and Rosch 1981). Because extension fit facilitates categorization processes (Boush and Loken 1991), consumers are more likely to retrieve and transfer parent brand associations to the extension product if extension fit is high (Czellar 2003; Völckner and Sattler 2007). Therefore, extension fit increases the positive effect of parent brand equity on brand extension success, leading to a positive interaction effect between extension fit and parent brand equity.

#### *Moderating Effects of Parent Brand Factors*

Parent brand factors can influence the categorization process (Meyvis and Janiszewski 2004; Monga and John 2010) and thus may moderate the effects of parent brand equity and extension fit on brand extension success. We consider three parent brand factors: core product class (goods vs. services), brand concept (nonprestige vs. prestige), and brand breadth.

**Core product class.** Services are intangible rather than tangible objects (Parasuraman, Zeithaml, and Berry 1985; Van Riel,

Lemmink, and Ouwersloot 2001). The intangible nature of services potentially brings fewer concrete associations and more abstract associations to service brands than to goods brands (Völckner et al. 2010). According to categorization theory, a more abstract brand makes it easier for consumers to classify an extension product as a member of the parent brand category (Monga and John 2010; Park, Milberg, and Lawson 1991) and is more likely to lead to association transfer to the extension product. Thus, we expect that the effect of parent brand equity on brand extension success is stronger for service parent brands than for goods parent brands. Likewise, because an abstract brand makes it easier for consumers to categorize an extension, consumers perceive fewer differences between low- and high-fit extensions for service (vs. goods) parent brands, reducing the importance of fit in facilitating categorization processes. Therefore, we expect that the effect of extension fit on brand extension success is weaker for service parent brands than for goods parent brands.

**Brand concept.** Compared with nonprestige brands, prestige brands are mainly associated with status and luxury (Kirmani, Sood, and Bridges 1999; Park, Jaworski, and MacInnis 1986). Status and luxury associations are forms of abstract brand meanings (Puligadda, Ross, and Grewal 2012; Torelli et al. 2012). Categorization theory suggests that brands with abstract (vs. concrete) meanings are more easily connected with a wide range of different products (Monga and Gürhan-Canli 2012; Park, Milberg, and Lawson 1991). As a result, consumers can more easily categorize an extension of a prestige (vs. a nonprestige) brand and transfer corresponding parent brand associations to the extension product. Thus, we expect that the effect of parent brand equity on brand extension success is stronger for prestige parent brands than for nonprestige parent brands. In



addition, owing to the greater extendibility of brands with more abstract meanings, consumers may rely less on the categorization role of extension fit when processing and evaluating an extension product. Thus, we expect that the effect of extension fit on brand extension success is weaker for prestige parent brands than for nonprestige parent brands.

**Brand breadth.** Brand breadth represents the variability among products affiliated with a brand (Boush and Loken 1991). When managers consistently extend a brand to different product categories, a broad brand emerges with a wide range of associations (Meyvis and Janiszewski 2004). Such diverse associations facilitate the retrieval of brand benefits (Swaminathan et al. 2015). As a result, consumers can more easily make a connection between the parent brand and a new extension product and thus categorize the extension product as a member of the parent brand category, which supports the transfer of parent brand associations to the extension product. Thus, we expect that the effect of parent brand equity on brand extension success is stronger for broader parent brands. However, brand breadth may have an opposite moderating effect on extension fit. With a broad brand, consumers are accustomed to its diverse extensions and have more information for and confidence in evaluating a new extension even if it is dissimilar to the current products of the parent brand (Dacin and Smith 1994). Consequently, the categorization role of extension fit in evaluating a new extension is less critical. Thus, we expect that the effect of extension fit on brand extension success is weaker for broader parent brands.

### *Moderating Effects of Extension Factors*

Consumers' extension evaluations are inherently dependent on the characteristics of the focal extension, which could thus moderate the effects of parent brand equity and extension fit on brand extension success (DeVecchio and Smith 2005; Sood and Keller 2012). We consider three extension factors: extension risk, extension name (subbranding vs. direct branding), and extension type (line vs. category extensions).

**Extension risk.** Extension risk refers to the perceived likelihood and severity of negative outcomes associated with purchasing an extension product (Kushwaha and Shankar 2013), with products generally differing in the risk they entail (Jacoby and Kaplan 1972). Since both the signaling role of parent brand equity and the categorization role of extension fit can reduce perceived risk, they should play a greater role in consumers' evaluations of an extension when extension risk is high. Thus, we expect that the effects of parent brand equity and extension fit on brand extension success become stronger as extension risk increases.

**Extension name.** There are two naming strategies for extension products: direct branding and subbranding (Monga and John 2010; Sood and Keller 2012). In a direct branding strategy, the parent brand name is the focal diagnostic cue, so consumers

evaluate the extension on the basis of the parent brand (Boush and Loken 1991). By contrast, in a subbranding strategy, the extension name consists of two parts: a new name and the parent brand name. The new name provides consumers with additional information to evaluate the extension (Sood and Keller 2012). In this case, consumers may pay less attention to the parent brand and its relationship to the extension product, and therefore the signaling role of parent brand equity and the categorization role of extension fit become less important. Thus, we expect that the effects of parent brand equity and extension fit on brand extension success are stronger for a direct branding strategy than for a subbranding strategy.

**Extension type.** By definition, brand extensions comprise line and category extensions. Line extensions belong to the same category as the parent brand and therefore share more product attributes with the parent brand than category extensions, which enter a different product category (Carter and Curry 2013; John, Loken, and Joiner 1998). In this sense, line extensions potentially facilitate the categorization of the extension product and benefit the transfer of associations from the parent brand to the extension product (Dens and De Pelsmacker 2010). Thus, we expect that the effect of parent brand equity on brand extension success is stronger for line extensions than for category extensions. In addition, because line extensions have more similarities to the parent brand than category extensions, consumers perceive fewer differences between low-fit and high-fit extensions and develop more similar extension evaluations (Dens and De Pelsmacker 2010), which reduces the importance of fit in facilitating categorization processes. Thus, we expect that the effect of extension fit on brand extension success is weaker for line extensions than for category extensions.

### *Moderating Effects of Communication Factors*

Consumers' extension evaluations depend on how marketers communicate about extension products (Gierl and Huettl 2011; Martin, Stewart, and Matta 2005). We consider two communication factors: parent brand cues and extension product cues.

**Parent brand cues.** Parent brand cues refer to information about the parent brand in communications about an extension. In brand extension studies, researchers have often provided respondents with the focal parent brand's logo, slogan, or endorser together with the extension stimuli (e.g., Dens and De Pelsmacker 2010; Lane 2000). These cues convey the commonalities between the parent brand and the extension, helping consumers more quickly identify the similarities between the parent brand and its extension (Martin, Stewart, and Matta 2005). As a result, consumers are more likely to categorize the extension as a member of the parent brand category and retrieve associations with the parent brand from memory (Gierl and Huettl 2011). Therefore, we expect the effect of parent brand equity on brand extension success to be stronger

when parent brand cues are present. Furthermore, because parent brand cues linked to an extension make the parent brand more accessible in consumers' minds, helping establish a link between the parent brand and the extension, the categorization role of extension fit becomes less important. Therefore, we expect the effect of extension fit on brand extension success to be weaker when parent brand cues are present.

**Extension product cues.** Extension product cues refer to information about an extension product in communications about the extension. Some previous studies have informed respondents only about extension product categories (e.g., Aaker and Keller 1990), while others have also provided information about the function, price, and design of extension products (e.g., Meyers-Levy, Louie, and Curren 1994). When extension product cues are available, consumers do not need to rely solely on parent brand equity and extension fit when evaluating the extension (Klink and Smith 2001), so the signaling role of parent brand equity and the categorization role of extension fit become less relevant. Thus, we expect the effects of parent brand equity and extension fit on brand extension success to be weaker when extension product cues are present.

### **Moderating Effects of Consumer Factors**

How consumers evaluate an extension may depend on consumer characteristics, which thus potentially moderate the effects of parent brand equity and extension fit (Czellar 2003). We examine three consumer factors: involvement, age, and gender.

**Involvement.** Involvement captures the personal relevance of a decision task (Gürhan-Canli and Maheswaran 1998). The elaboration likelihood model states that under conditions of low involvement, consumers tend to form product and brand attitudes through less effortful information processing (Coulter 2005; Petty, Cacioppo, and Schumann 1983), and association transfer becomes an important way to evaluate stimuli (Gürhan-Canli and Maheswaran 1998). Low-involvement consumers are more likely to evaluate new products on the basis of the brand name and pay little attention to other information (Maheswaran, Mackie, and Chaiken 1992). As a result, the signaling role of parent brand equity is stronger for low-involvement consumers. Thus, we expect that the effect of parent brand equity on brand extension success is weaker when consumer involvement is high (vs. low). Furthermore, because high-involvement consumers have more cognitive resources to reconcile incongruities between a parent brand and its extension (Maoz and Tybout 2002), they perceive fewer differences between low-fit and high-fit extensions, reducing the importance of extension fit in facilitating categorization processes. Therefore, we also expect that the effect of extension fit on brand extension success is weaker when consumer involvement is high (vs. low).

**Age.** Age negatively influences human cognitive capacity (Cole and Balasubramanian 1993; John and Cole 1986). Older consumers typically find it more difficult to process and learn new information (Phillips and Sternthal 1977). For example, in verbal learning studies, older adults exhibited greater learning deficits than younger people (Eisdorfer 1965). Older consumers tend to base their judgments and decision making on information present in long-term memory rather than in active short-term memory (Salthouse 1991). In this case, parent brand equity, as information that exists in long-term memory, may play a greater role in extension evaluations, and thus the signaling role of parent brand equity is stronger. We therefore expect the effect of parent brand equity on brand extension success to become stronger with increasing age. In addition, difficulties in analyzing and learning new information can affect older consumers' ability to understand a distant extension that is quite different from the parent brand. As a result, the importance of extension fit in facilitating categorization processes increases. Thus, we expect the effect of extension fit on brand extension success to become stronger with increasing age.

**Gender.** Biological differences between men and women (e.g., brain lateralization, chromosomes, hormones) (Hong et al. 1994) may lead to differences in information processing (Noseworthy, Cotte, and Lee 2011). For example, women seem to be biologically predisposed to observe things more closely (Wang, Xiong, and Yang 2019) and process information more comprehensively (Meyers-Levy and Loken 2015). Confronted with new products, women tend to process information thoroughly, while men tend to adopt a less effortful strategy (Meyers-Levy and Maheswaran 1991; Meyers-Levy and Sternthal 1991). In this sense, women tend to have higher levels of elaboration than men when analyzing new stimuli. As discussed in the context of involvement, more effortful information processing reduces the signaling role of parent brand equity in evaluating an extension product, and it mitigates the differences between low-fit and high-fit extensions, reducing the importance of extension fit in facilitating categorization processes. Therefore, we expect the effects of parent brand equity and extension fit on brand extension success to be weaker for women than for men.

### **Methodology**

We conducted an extensive search for empirical studies on brand extensions and performed rigorous paper screening, leading to a database consisting of 147 independent samples extracted from 124 papers over the 1990–2020 period. Summing the number of respondents from all the independent samples produced 43,849 respondents in total. Web Appendix A provides details on the literature search and screening.

Drawing from prior meta-analyses in marketing (e.g., Babić Rosario et al. 2016; Hogreve et al. 2017; Iyer et al. 2020), we selected correlations as the effect size measure and included bivariate correlations, partial correlations, and standardized

coefficients from structural models or linear regression models without interaction terms, to include as many effect sizes as possible in the meta-analysis. For studies reporting other measures (e.g., means and standard deviations, Student's *t*), we converted the measures to correlations following Borenstein et al. (2009). With this approach, we obtained 2,136 effect sizes. Following prior meta-analyses (Auer and Papiés 2020; Bijmolt, Van Heerde, and Pieters 2005), we checked for outliers in the effects of the different dimensions of parent brand equity and extension fit, that is, values deviating by more than four standard deviations from the mean effect size of the respective driver. We identified and removed two outliers for feature fit, leaving 2,134 effect sizes: 708 effect sizes for parent brand equity and 1,426 effect sizes for extension fit.

Table 3 shows the coding scheme and summary statistics for all moderators. Web Appendix B provides details on the coding procedure. Following methodological recommendations (Jackson and Turner 2017) and common practice in meta-analyses in marketing (e.g., Kozlenkova et al. 2021; Orsingher, Valentini, and De Angelis 2010; Schamp et al. 2023), we restrict the empirical generalizations to topics covered in at least five empirical studies. Nevertheless, our analyses include consumer involvement, which is based on two studies in the parent brand equity model. Because consumer involvement is based on ten studies in the extension fit model, we chose to retain it to ensure theoretical completeness and empirical consistency between the parent brand equity model and the extension fit model. However, the dimensions of extension fit no longer include goal fit because we have only one study with eight effect sizes of goal fit in our database and we grouped these eight effect sizes into mixed fit. In line with meta-analytic standards, we first transformed all correlations, partial correlations, and standardized coefficients into Fisher's *Z* effect sizes. We then performed the meta-analysis on the transformed effect sizes using hierarchical linear modeling to account for dependencies between effect sizes stemming from the same study (Bijmolt and Pieters 2001; Carrillat, Legoux, and Hadida 2018). Web Appendix C provides the model specification for calculating the meta-analytic average effect size and the meta-regression specification for the moderator analyses, examining the relationship between parent brand equity and brand extension success, hereinafter called the parent brand equity model, and examining the relationship between extension fit and brand extension success, hereinafter called the extension fit model. Web Appendix C also provides the results of a multicollinearity check, indicating no multicollinearity issues for the meta-regressions.

To support interpretation and drawing from prior meta-analyses (Roschk and Hosseinpour 2020; You, Vadakkepatt, and Joshi 2015), we calculate the predicted correlations between parent brand equity (extension fit) and brand extension success in the meta-regressions at 0 and 1 of each dummy variable. As the value 0 for gender refers to only male respondents and 1 refers to only female respondents in a sample, we compute predicted correlations at 0 and 1 for gender. For statistical control, we compute predicted correlations at 0 (reflecting

bivariate correlations) and the mean of nonzero values (reflecting partial correlations or standardized coefficients). Finally, for other continuous moderators, we compute predicted correlations at  $\pm 1.5$  standard deviations from the mean of that variable (if the high/low value exceeds the variable's range, we use the maximum/minimum value of the scale). When calculating the predicted correlation for one variable, we kept all other variables in the model at their sample mean values.

## Results

### *Main Effects of Parent Brand Equity and Extension Fit*

Table 4 presents the descriptive statistics for each of the bivariate relationships between parent brand equity/extension fit and brand extension success. The various dimensions of parent brand equity and extension fit vary considerably in terms of how many times the effect on brand extension success has been examined. Compared with the other dimensions of parent brand equity, brand quality and brand attitude have been studied much more frequently: 237 effect sizes from 41 papers and 404 effect sizes from 36 papers, respectively. With respect to the dimensions of extension fit, feature fit has been examined most frequently: in 23 papers reporting 184 effect sizes.

The meta-analytic average effect sizes of parent brand equity and extension fit for brand extension success show that both parent brand equity ( $r = .326, p < .001$ ) and extension fit ( $r = .352, p < .001$ ) have a medium (Cohen 1992) positive effect on brand extension success. To provide a more intuitive interpretation, we converted these correlations into CLEs (Dunlap 1994), resulting in .606 and .614, respectively. Thus, if parent brand equity (extension fit) increases, the success of the brand extension also improves, with a probability of 60.6% (61.4%). These CLES values are comparable to the CLES values found in meta-analyses for other marketing strategies, such as cause marketing with a CLES of .627 (Schamp et al. 2023), and suggest a nonnegligible impact of parent brand equity and extension fit on brand extension success.

All dimensions of extension fit and all but one dimension of parent brand equity positively influence brand extension success (Table 4); the only exception is the relationship between brand familiarity and brand extension success, which is nonsignificant ( $r = .092, p = .561$ ). We statistically tested the differential effects of the dimensions in the meta-regressions. Specifically, in the parent brand equity (extension fit) model, we estimated the effects of the four (three) parent brand equity (extension fit) dummies, which capture the different dimensions of parent brand equity (extension fit) (see Table 5). Using the results from the meta-regressions, we conducted parameter comparisons based on Wald chi-square tests (Wooldridge 2015). Web Appendix D provides the detailed results. Among the dimensions of parent brand equity, brand quality, brand loyalty, and brand attitude have small to medium effects on brand extension success that are not significantly different from each other (*p*-values for the differences

**Table 3.** Coding Scheme and Summary Statistics of the Moderators.

Variable	Coding Scheme	Summary Statistics <sup>a</sup>	
		PB Equity–BE Success Relationship Model	Extension Fit–BE Success Relationship Model
<b>PB Equity and Extension Fit Dimensions</b>			
PB equity dummies			
Mixed brand equity	Reference group that includes all cases that do not refer to one particular following dimension of PB equity		
Brand attitude	Dummy = 1 if PB equity refers to brand attitude and 0 otherwise	0 (N = 304; S = 52) 1 (N = 404; S = 39)	
Brand familiarity	Dummy = 1 if PB equity refers to brand familiarity and 0 otherwise	0 (N = 686; S = 78) 1 (N = 22; S = 8)	
Brand quality	Dummy = 1 if PB equity refers to brand quality and 0 otherwise	0 (N = 471; S = 51) 1 (N = 237; S = 43)	
Brand loyalty	Dummy = 1 if PB equity refers to brand loyalty and 0 otherwise	0 (N = 682; S = 79) 1 (N = 26; S = 9)	
Extension fit dummies			
Mixed fit	Reference group that includes all cases that do not refer to one particular following dimension of fit		
Usage fit	Dummy = 1 if extension fit refers to usage fit and 0 otherwise		0 (N = 1,286; S = 133) 1 (N = 140; S = 14)
Feature fit	Dummy = 1 if extension fit refers to feature fit and 0 otherwise		0 (N = 1,242; S = 126) 1 (N = 184; S = 24)
Concept fit	Dummy = 1 if extension fit refers to concept fit and 0 otherwise		0 (N = 1,286; S = 127) 1 (N = 140; S = 15)
<b>Interaction Between PB Equity and Extension Fit</b>			
PB equity	A parent brand's equity rated on a five-point scale <sup>b</sup>		M = 3.66, SD = 1.02
Extension fit	Perceived fit between a parent brand and its extension rated on a five-point scale <sup>b</sup>	M = 3.19, SD = 1.12	
<b>Moderating Parent Brand Factors</b>			
Core product class	Dummy = 1 if the core product class is services and 0 if it is goods	0 (N = 547; S = 71) 1 (N = 188; S = 26)	0 (N = 1,221; S = 119) 1 (N = 245; S = 30)
Brand concept	Dummy = 1 if it is a prestige brand and 0 if it is a nonprestige brand	0 (N = 683; S = 77) 1 (N = 46; S = 9)	0 (N = 1,353; S = 125) 1 (N = 103; S = 16)
Brand breadth	The variability of products affiliated with the parent brand rated on a five-point scale <sup>b</sup>	M = 1.47, SD = .705	M = 1.45, SD = .626
<b>Moderating Extension Factors</b>			
Extension risk	The likelihood and severity of negative outcomes associated with purchasing the extension product on a five-point scale <sup>b</sup>	M = 2.53, SD = .895	M = 2.54, SD = .760
Extension name	Dummy = 1 if the naming strategy is direct branding and 0 if it is subbranding	0 (N = 40; S = 10) 1 (N = 671; S = 74)	0 (N = 106; S = 11) 1 (N = 1,320; S = 125)
Extension type	Dummy = 1 if the extension product is a line extension and 0 if it is a category extension	0 (N = 483; S = 63) 1 (N = 301; S = 57)	0 (N = 1,179; S = 113) 1 (N = 671; S = 89)
<b>Moderating Communication Factors</b>			
Parent brand cues	Dummy = 1 if the parent brand's logo/slogan/endorser is present in communications about an extension and 0 if it is absent	0 (N = 594; S = 76) 1 (N = 114; S = 6)	0 (N = 1,174; S = 116) 1 (N = 252; S = 20)
Extension product cues	Dummy = 1 if the extension's product function/price/image is present in communications about the extension and 0 if it is absent	0 (N = 455; S = 62) 1 (N = 253; S = 20)	0 (N = 853; S = 83) 1 (N = 573; S = 53)
<b>Moderating Consumer Factors</b>			
Involvement	Dummy = 1 if respondents' involvement level is high when assessing the extension and 0 if it is low/mixed	0 (N = 683; S = 80) 1 (N = 25; S = 2)	0 (N = 1,350; S = 130) 1 (N = 76; S = 10)
Age	Mean age of the respondents in a sample	M = 26.3, SD = 2.60	M = 25.9, SD = 4.16

(continued)

**Table 3. (continued)**

Variable	Coding Scheme	Summary Statistics <sup>a</sup>	
		PB Equity–BE Success Relationship Model	Extension Fit–BE Success Relationship Model
Gender	Proportion of female respondents in a sample	M = .511, SD = .146	M = .532, SD = .153
<b>Moderating Research Method Factors</b>			
Parent brand reality	Dummy = 1 if the parent brand is a real brand and 0 if it is fictitious	0 (N = 40; S = 7) 1 (N = 668; S = 74)	0 (N = 243; S = 17) 1 (N = 1,183; S = 116)
Extension reality	Dummy = 1 if the extension is a real product and 0 if it is fictitious	0 (N = 616; S = 62) 1 (N = 92; S = 20)	0 (N = 1,331; S = 116) 1 (N = 101; S = 19)
Success measure	Dummy = 1 if brand extension success is measured in terms of behavioral intentions and 0 if it is measured in terms of consumer attitudes	0 (N = 588; S = 75) 1 (N = 120; S = 25)	0 (N = 1,140; S = 122) 1 (N = 286; S = 42),
Data collection region	Dummy = 1 if the region of data collection is Western and 0 if it is Eastern	0 (N = 260; S = 27) 1 (N = 448; S = 54)	0 (N = 469; S = 42) 1 (N = 957; S = 91)
Study type	Dummy = 1 if the study is a between-subjects experiment and 0 if it is a within-subjects experiment or survey	0 (N = 462; S = 64) 1 (N = 246; S = 18)	0 (N = 767; S = 72) 1 (N = 659; S = 61)
Statistical control	The number of control variables in the estimated model if an effect size is a partial correlation or a standardized coefficient and 0 if it is a bivariate correlation	M = 1.15, SD = 1.66	M = .819, SD = 1.50

<sup>a</sup>For the distribution of the dummy variables, the table depicts the frequencies (N) of 1 and 0 and the corresponding number of independent samples (S). For example, in the model examining the relationship between parent brand equity and brand extension success, the dummy variable “core product class” involves N = 188 effect sizes from S = 26 independent samples with at least one service parent brand and N = 547 effect sizes from S = 71 independent samples with at least one goods parent brand. As an effect size (an independent sample) could contain multiple parent brands and extension products, the sum of the Ns (Ss) per variable can exceed the total number of effect sizes (independent samples).

<sup>b</sup>1 = “very low,” 2 = “moderately low,” 3 = “neither low nor high,” 4 = “moderately high,” and 5 = “very high.”

Notes: N = number of effect sizes, S = number of samples, PB = parent brand, BE = brand extension.

ranging from .101 to .908). Brand familiarity has the weakest relationship to brand extension success, significantly weaker than the other dimensions (*p*-values for the differences ranging from <.001 to .019). Among the dimensions of extension fit, usage fit has the smallest effect on brand extension success (*p*-values for the differences ranging from .020 to .029). Feature fit and concept fit have medium effects that are not significantly different from each other (*p*-value for the difference is .540).

For all significant drivers (Table 4), the fail-safe numbers are more than five times the number of observed effect sizes plus 10, indicating that these results are not caused simply by publication bias (Rosenthal 1979). In addition, the Q-tests of homogeneity indicate that the effect sizes are more heterogeneous than expected by chance alone and that it could be fruitful to examine contextual and research method-based moderators for the parent brand equity and extension fit effects.

**Interaction Effects Between Parent Brand Equity and Extension Fit**

Table 5 shows a positive effect of extension fit (*b* = .062, *p* < .001) in the parent brand equity model and a positive effect of parent brand equity (*b* = .049, *p* < .001) in the extension

fit model. These findings indicate a positive interaction between the overall measures of parent brand equity and extension fit: the impact of parent brand equity on extension success becomes larger when extension fit increases, and the impact of extension fit on extension success becomes larger when parent brand equity increases. The predicted correlations from the spotlight analyses reveal that parent brand equity still has a positive (though small) effect (*r*<sub>pred</sub> = .245) on brand extension success even if the extension has a poor fit. Similarly, extension fit exerts a positive (though small) effect (*r*<sub>pred</sub> = .273) on brand extension success even if the extension has a low parent brand equity. These results indicate that both signaling theory (for the effect of parent brand equity) and categorization theory (for the effect of extension fit) contribute to explaining brand extension success.

Prior research suggests that the interaction effect between parent brand equity and extension fit can vary across different dimensions (Aaker and Keller 1990). Therefore, we added the interaction terms between the overall rating of extension fit (parent brand equity) and the parent brand equity dummies (extension fit dummies) in the parent brand equity (extension fit) model. Using the results from the meta-regressions, we again conducted parameter comparisons based on Wald chi-square tests (Wooldridge 2015). Web Appendix E provides the detailed results. The parameter comparisons reveal that

Table 4. Meta-Analytic Descriptive Statistics (Including Average Effect Sizes).

Drivers	Number of Papers	Number of Samples	Number of Effect Sizes	Number of Respondents	Average Effect Size	95% Confidence Interval	Q-Value	Fail-Safe N
Parent brand equity	76	81	708	28,860	.326***	(.271, .379)	14,695.2***	3,553,252
Brand attitude	36	39	404	17,461	.404***	(.323, .480)	11,166.6***	1,286,001
Brand familiarity	7	8	22	1,675	.092	(-.215, .382)	352.6***	— <sup>a</sup>
Brand quality	41	43	237	12,288	.295***	(.248, .340)	2,439.2***	385,460
Brand loyalty	9	9	26	2,044	.351***	(.231, .461)	305.5***	6,669
Mixed brand equity	4	4	19	1,289	.335 <sup>†</sup>	(-.022, .616)	213.9***	314
Extension fit	112	133	1,426	41,140	.352***	(.308, .394)	39,617.8***	17,198,942
Usage fit	14	14	140	3,021	.260***	(.228, .291)	3,096.2***	238,200
Feature fit	23	24	184	7,007	.323***	(.244, .397)	2,311.9***	215,030
Concept fit	13	15	140	3,447	.391***	(.268, .501)	6,069.9***	237,188
Mixed fit	88	107	962	34,344	.361***	(.309, .412)	25,749.8***	7,332,621

<sup>†</sup> $p < .1$ .

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$  (based on two-sided tests).

<sup>a</sup>Because brand familiarity is not significant, its fail-safe number is not applicable.

brand attitude, brand quality, and brand loyalty have similar interaction effects with extension fit ( $p$ -values for the differences ranging from .655 to .914), while brand familiarity tends to have a lower interaction effect with extension fit than the other dimensions of parent brand equity (approximately .10 lower, with  $p$ -values for the differences ranging from .037 to .118). With regard to the dimensions of extension fit, the results show that usage fit, feature fit, and concept fit have similar interaction effects with parent brand equity ( $p$ -values for the differences ranging from .721 to .853).

### Moderating Effects of Contextual Factors and Research Method Factors

**Moderating effects of parent brand factors.** Table 5 presents the results of the moderating effects examined in the meta-regressions. We found that parent brand equity is more effective for service (vs. goods) parent brands ( $b = .106, p = .001; r_{pred} = .409$  vs. .317), whereas the other two parent brand factors do not significantly moderate the effect of parent brand equity. Extension fit is less effective for prestige (vs. nonprestige) parent brands ( $b = -.265, p < .001; r_{pred} = .105$  vs. .355), while the other two parent brand factors are not significant.

**Moderating effects of extension factors.** The effect of parent brand equity does not significantly depend on any extension factors, namely, extension risk ( $b = -.019, p = .121$ ), extension name ( $b = .028, p = .714$ ), and extension type ( $b = -.025, p = .412$ ). By contrast, extension fit is more effective when the perceived risk of purchasing the extension product is high versus low ( $b = .038, p = .011; r_{pred} = .379$  vs. .303) and when the extension uses a direct branding strategy versus a subbranding strategy ( $b = .157, p = .014; r_{pred} = .352$  vs. .208).

**Moderating effects of communication factors.** Parent brand equity is more effective when parent brand cues ( $b = .104, p = .055; r_{pred} = .415$  vs. .325; marginally significant) or extension product cues ( $b = .128, p = .009; r_{pred} = .411$  vs. .298; opposite to our expectation) are present versus absent in extension product communications. By contrast, extension fit is less effective when extension product cues are present versus absent in extension product communications ( $b = -.133, p = .003; r_{pred} = .269$  vs. .388), while its effect is not significantly moderated by parent brand cues ( $b = -.050, p = .301$ ).

**Moderating effects of consumer factors.** Both parent brand equity ( $b = -.300, p = .050; r_{pred} = .204$  vs. .468; marginally significant) and extension fit ( $b = -.347, p = .018; r_{pred} = .191$  vs. .493) are considerably less effective for female consumers than for male consumers. In addition, extension fit is more effective for older consumers than for younger consumers ( $b = .014, p = .003; r_{pred} = .418$  vs. .260). Finally, consumer involvement does not significantly moderate either parent brand equity ( $b = -.028, p = .729$ ) or extension fit ( $b = .032, p = .426$ ).

**Table 5.** Results of the Meta-Regressions Explaining the Effects of Parent Brand Equity and Extension Fit on Brand Extension Success.

Variable	PB Equity–BE Success Relationship Model			Extension Fit–BE Success Relationship Model		
	Estimate	SE	Predicted Correlation	Estimate	SE	Predicted Correlation
Constant	.469**	.155		.543***	.075	
<b>PB Equity/Extension Fit Dimensions</b>						
PB equity dummies (with mixed brand equity as the reference group)						
Brand attitude	.042	.097	.323 <sup>a</sup> vs. .360			
Brand familiarity	-.152	.109	.323 <sup>a</sup> vs. .181			
Brand quality	-.001	.097	.323 <sup>a</sup> vs. .322			
Brand loyalty	.004	.102	.323 <sup>a</sup> vs. .327			
Extension fit dummies (with mixed fit as the reference group)						
Usage fit				-.130**	.047	.360 <sup>a</sup> vs. .242
Feature fit				-.050	.045	.360 <sup>a</sup> vs. .316
Concept fit				-.019	.045	.360 <sup>a</sup> vs. .343
<b>Interaction Between PB Equity and Extension Fit</b>						
PB equity <sup>b</sup>				.049***	.011	.273 vs. .398
Extension fit <sup>b</sup>	.062***	.012	.245 vs. .428			
<b>Moderating Parent Brand Factors</b>						
Core product class (0 = goods, 1 = services)	.106**	.031	.317 vs. .409	-.007	.036	.342 vs. .336
Brand concept (0 = nonprestige, 1 = prestige)	.004	.113	.339 vs. .343	-.265***	.074	.355 vs. .105
Brand breadth <sup>b</sup>	-.001	.016	.340 vs. .339	-.002	.022	.342 vs. .339
<b>Moderating Extension Factors</b>						
Extension risk <sup>b</sup>	-.019	.013	.363 vs. .316	.038*	.015	.303 vs. .379
Extension name (0 = subbrand, 1 = direct brand)	.028	.075	.316 vs. .341	.157*	.064	.208 vs. .352
Extension type (0 = category, 1 = line)	-.025	.030	.347 vs. .326	.040	.027	.331 vs. .366
<b>Moderating Communication Factors</b>						
Parent brand cues (0 = no, 1 = yes)	.104 <sup>†</sup>	.054	.325 vs. .415	-.050	.049	.349 vs. .304
Extension product cues (0 = no, 1 = yes)	.128**	.049	.298 vs. .411	-.133**	.045	.388 vs. .269
<b>Moderating Consumer Factors</b>						
Involvement (0 = low/mixed, 1 = high)	-.028	.080	.340 vs. .316	.032	.040	.340 vs. .368
Age	<.001	.008	.341 vs. .338	.014**	.005	.260 vs. .418
Gender (female proportion; 0 = all male, 1 = all female)	-.300 <sup>†</sup>	.153	.468 vs. .204	-.347*	.146	.493 vs. .191
<b>Moderating Research Method Factors</b>						
Parent brand reality (0 = fictitious, 1 = real)	-.105	.099	.424 vs. .334	.050	.064	.304 vs. .349
Extension reality (0 = fictitious, 1 = real)	.088	.063	.330 vs. .405	.043	.061	.339 vs. .376
BE success measure (0 = attitude, 1 = intention)	-.044	.031	.346 vs. .307	-.138***	.028	.366 vs. .240
Data collection region (0 = Eastern, 1 = Western)	-.083	.063	.385 vs. .312	-.034	.046	.361 vs. .332
Study type (0 = within-subjects experiment/survey, 1 = between-subjects experiment)	-.139 <sup>†</sup>	.072	.382 vs. .257	-.214***	.052	.426 vs. .236
Statistical control	-.061***	.006	.400 vs. .228	-.065***	.009	.387 vs. .195

<sup>†</sup> $p < .1$ .

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$  (based on two-sided tests).

<sup>a</sup>The value refers to the predicted correlation of the reference group of the parent brand equity dummies (i.e., mixed brand equity) or the extension fit dummies (i.e., mixed fit).

<sup>b</sup>Five-point scale: 1 = very low, 2 = moderately low, 3 = neither low nor high, 4 = moderately high, and 5 = very high.

Notes: PB = parent brand, BE = brand extension.

**Moderating effects of research method factors.** The effect of parent brand equity is not significantly affected by parent brand reality ( $b = -.105, p = .293$ ), extension reality ( $b = .088, p = .167$ ), or data collection region ( $b = -.083, p = .186$ ), nor is the effect of extension fit (parent brand reality:  $b = .050,$

$p = .438$ ; extension reality:  $b = .043, p = .484$ ; data collection region:  $b = -.034, p = .469$ ). For both parent brand equity ( $b = -.139, p = .052; r_{pred} = .257$  vs.  $.382$ ; marginally significant) and extension fit ( $b = -.214, p < .001; r_{pred} = .236$  vs.  $.426$ ), smaller effect sizes emerge in between-subjects

experiments (vs. within-subjects experiments and surveys), which matches general knowledge on experimental designs. Moreover, the effect sizes of parent brand equity ( $b = -.061$ ,  $p < .001$ ;  $r_{\text{pred}} = .228$  vs.  $.400$ ) and extension fit ( $b = -.065$ ,  $p < .001$ ;  $r_{\text{pred}} = .195$  vs.  $.387$ ) decrease with a higher number of control variables, compared with a bivariate correlation. In addition, extension fit generates smaller effect sizes for behavioral (vs. attitudinal) brand extension success ( $b = -.138$ ,  $p < .001$ ;  $r_{\text{pred}} = .240$  vs.  $.366$ ), while the type of success measure does not significantly moderate the effect of parent brand equity ( $b = -.044$ ,  $p = .151$ ).

### Relative Importance of Parent Brand Equity and Extension Fit

Consensus on whether parent brand equity (based on signaling theory) is more important than extension fit (based on categorization theory) or vice versa is lacking. For example, Völckner and Sattler (2006) find that extension fit has a greater effect on brand extension success, whereas Sunde and Brodie (1993) find that parent brand equity has a greater effect. Therefore, we statistically examined the relative importance of parent brand equity and extension fit. In particular, we pooled the effect sizes of these two drivers, created a dummy variable (driver type: parent brand equity = 0, extension fit = 1), and included this dummy as well as all contextual factors (parent brand, brand extension, communication, and consumer factors) and research method factors into a meta-regression model. Web Appendix F, which provides the estimation results, shows that extension fit is generally more effective in driving brand extension success than parent brand equity ( $b = .069$ ,  $p < .001$ ;  $r_{\text{pred}} = .356$  vs.  $.294$ ).

To further understand the conditions under which extension fit is more (or less) important, the predicted correlations in Table 5 provide important insights. For example, extension fit is more important than parent brand equity for goods parent brands ( $r_{\text{pred}} = .342$  vs.  $.317$ ), while parent brand equity is more effective than extension fit for service parent brands ( $r_{\text{pred}} = .409$  vs.  $.336$ ). Moreover, when extension product cues are present in extension product communications, parent brand equity ( $r_{\text{pred}} = .411$ ) has a stronger impact on brand extension success than extension fit ( $r_{\text{pred}} = .269$ ), whereas in the absence of extension product cues, extension fit ( $r_{\text{pred}} = .388$ ) has a stronger impact than parent brand equity ( $r_{\text{pred}} = .298$ ).

### Robustness Checks and Split-Sample Analyses

We conducted a series of robustness checks on the results of the meta-regressions: using an alternative outlier detection threshold (three standard deviations instead of four standard deviations), using an alternative missing value imputation approach (sample medians instead of sample means), eliminating specific effect size types (excluding instead of including standardized coefficients and partial correlations in our database), and

including more control variables (e.g., publication status, publication quality, and publication year). The results of all these alternative model specifications indicate that the results of the meta-regressions are stable (see Web Appendix G).

Finally, given that line extensions and category extensions are two main types of brand extension strategies, leading to different management actions at an operational level, we examined whether our findings vary between line and category extensions. To do so, we conducted a split-sample analysis and found that the estimates of the moderator effects are similar and, in most cases, do not significantly differ between line and category extensions (see Web Appendix H).

## Discussion

Mixed effects, different contextual settings and research methods, and limitations in data coverage have hindered researchers from deducing general inferences about the effects of parent brand equity and extension fit on brand extension success, thus necessitating empirical generalizations. In response, we offer a comprehensive synthesis of the effects of parent brand equity and extension fit on brand extension success based on 124 papers with 2,134 effect sizes covering more than three decades of empirical research. Table 6 summarizes our findings.

### Theoretical Implications

*Main effects of parent brand equity and extension fit on brand extension success.* We provide the meta-analytic generalization that parent brand equity and extension fit are key drivers of brand extension success, demonstrating that, overall, parent brand equity ( $r = .326$ ) and extension fit ( $r = .352$ ) exert a medium positive effect, in line with signaling theory and categorization theory, respectively. In addition, we address the debate on whether parent brand equity is more important than extension fit or vice versa (Sunde and Brodie 1993; Völckner and Sattler 2006) by revealing that extension fit is slightly more important for brand extension success than parent brand equity. This finding suggests that although both signaling theory (parent brand equity effect) and categorization theory (fit effect) play a key role in explaining brand extension success, categorization theory has more explanatory power.

Regarding the dimensions of parent brand equity (e.g., Aaker and Keller 1990), three dimensions (brand quality, brand loyalty, and brand attitude) have similar positive (small to medium) effects on extension success, while brand familiarity has the weakest (and statistically nonsignificant) effect. In other words, brand familiarity does not play an important signaling role in consumers' evaluations of an extension product. This result is consistent with prior findings that brand familiarity is not a significant dimension of brand equity for consumer responses (Liu et al. 2017; So and King 2010). This may be because brand familiarity reflects consumer recognition of a brand, which is a necessary but not sufficient condition for



**Table 6.** Summary of Key Findings.

**A: Main Effects of PB Equity and Extension Fit on BE Success**

- PB equity (.326) and extension fit (.352) have medium positive effects.
- The effect of extension fit is statistically significantly larger than the effect of PB equity.
- Differential effects of the PB equity dimensions: brand quality (.295), brand loyalty (.351), and brand attitude (.404) have similar (small to medium) effects, while brand familiarity (.092) has the weakest (nonsignificant) effect.
- Differential effects of the fit dimensions: usage fit (.260) has the weakest effect, while concept fit (.391) and feature fit (.323) have similar medium effects.

**B: Interaction Effects of PB Equity and Extension Fit on BE Success**

- Positive interaction effect between PB equity and extension fit: for PB equity, a small effect (.245) when extension fit is low and a medium effect (.428) when extension fit is high; for extension fit, a small effect (.273) when PB equity is low and a medium effect (.398) when PB equity is high.
- PB equity dimensions: brand attitude, brand quality, and brand loyalty have similar interaction effects with extension fit, while brand familiarity has a lower interaction effect with extension fit than the other dimensions.
- Extension fit dimensions: usage fit, feature fit, and concept fit have similar interaction effects with PB equity.

**C: Moderating Effects of Contextual Factors and Research Method Factors**

	<b>PB Factors</b>	<b>Extension Factors</b>	<b>Communication Factors</b>	<b>Consumer Factors</b>	<b>Research Method Factors</b>
The effect of PB equity is larger for:	Service (.409) vs. goods (.317) parent brands <sup>a</sup>		PB cues present (.415) vs. absent (.325) <sup>a</sup> Extension product cues present (.411) vs. absent (.298) <sup>b</sup>	Male (.468) vs. female (.204) consumers <sup>a,c</sup>	Survey/within-subjects (.382) vs. between-subjects (.257) experiments Without (.400) vs. with (.228) control variables PB reality Extension reality BE success measure
The effect of PB equity is not significantly affected by:	Brand concept Brand breadth	Extension risk Extension name Extension type		Involvement <sup>c</sup> Age <sup>c</sup>	Data collection region Survey/within-subjects (.426) vs. between-subjects (.236) experiments Attitude-based (.366) vs. behavioral intention-based (.240) success measures
The effect of extension fit is larger for:	Nonprestige (.355) vs. prestige (.105) brands <sup>a</sup>	Higher (.379) vs. lower (.303) extension risk <sup>a</sup> Direct brand (.352) vs. subbrand (.208) name <sup>a</sup>	Extension product cues absent (.388) vs. present (.269) <sup>a</sup>	Older (.418) vs. younger (.260) consumers <sup>a,c</sup> Male (.493) vs. female (.191) consumers <sup>a,c</sup>	Without (.387) vs. with (.195) control variables PB reality Extension reality Data collection region
The effect of extension fit is not significantly affected by:	PB core product class Brand breadth	Extension type	PB cues	Involvement	

<sup>a</sup>In line with expectations.

<sup>b</sup>Opposite of expectations.

<sup>c</sup>Findings require caution because age and gender are based on a high percentage of data imputation, and involvement is only based on two studies in the parent brand equity model.

Notes: PB = parent brand, BE = brand extension. Numbers in parentheses refer to meta-analytic average correlations in Panel A and predicted correlations in Panels B and C; a correlation is small if the absolute value is lower than .3 and medium if the absolute value is between .3 and .5 (Cohen 1992).

building brand equity. The other dimensions of parent brand equity reflect the degree to which consumers think positively about the brand, which is apparently more relevant for brand extension success.

With respect to the dimensions of extension fit (Martin and Stewart 2001), usage fit has the weakest effect, while concept fit and feature fit have similar medium effects. From a theoretical perspective, this finding implies that usage fit is less important than both concept fit and feature fit in facilitating consumers' categorization of an extension product. Usage fit refers to higher-order perceptions of similarity (Martin and Stewart 2001), which may require more cognitive effort than direct similarity judgments based on product features and/or holistic similarity judgments based on concept fit. As a result, usage fit is less effective in driving consumers' (initial) responses to an extension product.

*Interaction effects between parent brand equity and extension fit on brand extension success.* Another key finding of this meta-analysis (see Table 6) is that parent brand equity and extension fit positively interact with each other, which highlights the role of extension fit in facilitating categorization processes and, thus, the transfer of positive associations from high-equity parent brands to their extension products. Yet both signaling theory and categorization theory play an essential role in explaining brand extension success, because parent brand equity (extension fit) still has a small effect of .245 (.273) on brand extension success, even if the extension has a poor fit (low parent brand equity).

In addition, we shed light on this interaction effect by examining the interaction between parent brand equity (extension fit) and different dimensions of extension fit (parent brand equity). In particular, we find no significant differences in the parent brand equity effect across the dimensions of extension fit. However, brand familiarity turns out to be the least important dimension of parent brand equity in terms of enhancing extension success, as it has a lower interaction effect with extension fit than the other dimensions of parent brand equity, as well as a relatively small main effect. Again, this result is consistent with prior findings that brand familiarity is not a very important dimension of brand equity for consumer responses (Liu et al. 2017; So and King 2010).

*Moderating effects of contextual factors and research method factors.* We simultaneously consider four groups of contextual and research method factors, resulting in a holistic view of the moderators of the effects of parent brand equity and extension fit. Although some of the moderating effects are not significant, all but one of the significant moderating effects are in line with our theoretical expectations (Table 6). The moderating effects again indicate that categorization theory is more important for explaining brand extension success than signaling theory because categorization theory drives eight significant moderating effects while signaling theory drives only one significant moderator.

We provide insights into a wide range of contextual moderators that have rarely been examined before, such as service (vs. goods) parent brands, prestige (vs. nonprestige) brand concepts, and consumer age and gender. For example, although prior studies have found differences between service extensions and goods extensions in terms of risk perceptions (Lei et al. 2004; Van Riel, Lemmink, and Ouwersloot 2001; Völckner et al. 2010), scant research has considered the differences between service parent brands and goods parent brands (Dimitriu and Warlop 2022). We show that a parent brand's core product class makes a difference in that parent brand equity is more relevant to extension success for service brands ( $r_{\text{pred}} = .409$ ) than for goods brands ( $r_{\text{pred}} = .317$ ). In addition, while prior research conceptually indicates the potential moderating role of consumer age in the effect of parent brand equity (e.g., Czellar 2003), we provide initial empirical evidence that age enhances the effect of extension fit but does not influence the effect of parent brand equity.

Our results also offer a deeper understanding of extension product cues' moderating effect. Contrary to our expectation and prior research (Dick, Chakravarti, and Biehal 1990; Klink and Smith 2001), we show that extension product cues actually increase the effect of parent brand equity on brand extension success. Perhaps extension product cues (e.g., common design cues) help consumers identify a relationship between a parent brand and an extension product (Gierl and Huettl 2011), which facilitates the transfer of associations from the parent brand to the extension product.

In addition to these contextual factors, our investigation of research method factors has important implications for the design of future studies on brand extensions. For example, researchers have debated whether to use fictitious or real parent brands as study stimuli (Ahluwalia 2008; Chang, Lin, and Chang 2011; Keller and Aaker 1992). We contribute to this debate by showing that using real (vs. fictitious) parent brands actually does not significantly influence the effects of parent brand equity and extension fit. The same holds for the use of real (vs. fictitious) extension products. In addition, in a large database covering 26 countries, we do not find evidence of a moderating role of the region in which data were collected, thereby contributing to the debate on whether Eastern cultures have a different way of evaluating brand extensions than Western cultures (Kim, Park, and Kim 2014; Monga and John 2007).

Finally, we provide insights into the conditions under which extension fit is more (or less) important, contributing to a more nuanced understanding of the debate on the relative importance of extension fit versus parent brand equity (Sunde and Brodie 1993; Völckner and Sattler 2006). For example, extension fit is more important than parent brand equity for goods parent brands ( $r_{\text{pred}} = .342$  vs.  $.317$ ), while parent brand equity is more effective than extension fit for service parent brands ( $r_{\text{pred}} = .409$  vs.  $.336$ ). These insights are an exploratory result of our meta-analysis and require further research to unpack their theoretical underpinnings.

### Managerial Implications

The findings in Table 6 provide managers with insights into the design of brand extension strategies, taking into account the two key drivers of brand extension success. First, managers should leverage both parent brand equity and extension fit to enhance brand extension success. There is a 60.6% (61.4%) probability of a more positive response to a brand extension if parent brand equity (extension fit) improves. However, managers should pay more attention to extension fit because it is slightly more influential than parent brand equity. In addition, managers should pay attention to the differential effects of the multifaceted dimensions of parent brand equity and extension fit. For example, among the three fit dimensions, usage fit is the least important. Therefore, when introducing an extension product, creating and highlighting similarities in product features (vs. usage occasions) and images of the parent brand and the extension would be more beneficial.

Second, if possible, managers should consider parent brand equity and extension fit simultaneously because parent brand equity can strengthen the positive impact of extension fit on brand extension success and vice versa. Yet, for managers whose parent brand does not have high equity, brand extensions can still be a viable strategy for launching new products, so long as the extension fits well with the parent brand; an extension that does not have a good fit can still be successful so long as the parent brand is strong. Furthermore, managers should consider not only the overall interplay between the two drivers but also the interplay between parent brand equity and extension fit at the level of their various dimensions. For example, parent brand familiarity is less effective in enhancing the effect of extension fit than other dimensions of parent brand equity. Consequently, managers should focus on more effective dimensions, such as the interplay between parent brand attitude and extension fit.

Third, managers should take a broader perspective on the design of brand extension strategies by considering the factors related to the parent brand, extension product, communication, and consumers, because the effects of parent brand equity and extension fit, as well as their relative importance, depend on these contextual factors (Table 6). For example, managers of brands whose existing core products are services should particularly emphasize the equity of the parent brand (and its dimensions) when introducing an extension product. For extension products with relatively greater consumption risk, managers may attract more consumers by creating high perceived fit between the focal parent brand and the extension product.

### Limitations and Future Research

An important outcome of any meta-analysis is identifying which topics have not been addressed sufficiently in the literature and therefore should be addressed in future research. Moreover, our work has some limitations that indicate avenues for future research.

First, only a single study with eight effect sizes of goal fit exists in the literature, yielding a significant meta-analytic average effect size ( $r = .511, p < .001$ ), which is stronger than the other dimensions of extension fit. This calls for further research on the effect of goal fit, leading to a more comprehensive examination of the dimensions of extension fit. Similarly, given that the cases of high consumer involvement in the parent brand equity model only appear in two studies, further research should examine how consumer involvement moderates parent brand equity.

Second, as Table 4 shows, both the parent brand equity and extension fit dimensions vary considerably in terms of the number of effect sizes, which highlights the need to investigate them in future research, preferably simultaneously in a single study, to develop a fine-grained understanding of their relative importance. Furthermore, additional studies and thus more observations would enable comparisons of the interaction effects between the dimensions of parent brand equity and extension fit, which we could not do because of the multicollinearity caused by the small number of observations for multiple combinations of these dimensions.

Third, although we considered the moderating roles of several consumer factors, the results on age and gender are based on a high percentage of data imputation, which requires further empirical studies to validate our findings. Moreover, we could not code other potentially important consumer characteristics, such as consumer goals (e.g., promotion vs. prevention focus) (Yeo and Park 2006), expertise in the extension category (Czellar 2003), or construal level (Kim and John 2008; Swaminathan, Page, and Gürhan-Canli 2007), because the primary studies did not offer enough information. If data are available, further meta-analyses should consider these individual-level factors. Alternatively, and probably more feasibly, these factors could be examined in empirical studies.

Fourth, we focused on consumers' self-reported attitudes and behavioral intentions when measuring brand extension success because these success measures are most prevalent in the brand extension literature. Furthermore, primary studies based on secondary data (e.g., sales or stock market returns; Carter and Curry 2013; Lane and Jacobson 1995; Reddy, Holak, and Bhat 1994) often do not contain sufficient information to code relevant moderators (this is particularly true for the communication and consumer factors investigated in this meta-analysis). Nevertheless, further research projects, both empirical studies and meta-analyses, could expand our definition of brand extension success to include financial outcomes and assess the combined impact of a range of factors, including parent brand equity and extension fit.

### Conclusion

This article develops empirical generalizations on and insights into the main effects, relative importance, and interaction of the two key drivers of brand extension success (parent brand equity and extension fit) and discusses how to devise more

successful brand extension strategies in terms of five groups of moderators: contextual factors (parent brand, extension, communication, and consumer factors) and research method factors. We hope that this work will prove helpful to researchers and practitioners in improving the performance of brand extension strategies.

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