

The Impact of Brand Extension Introduction on Choice

This article focuses on the impact of a new brand extension introduction on choice in a behavioral context using national household scanner data involving multiple brand extensions. Particularly, the authors investigate the reciprocal impact of trial of successful and unsuccessful brand extensions on parent brand choice. In addition, the authors examine the effects of experience with the parent brand on consumers' trial and repeat of a brand extension using household scanner data on six brand extensions from a national panel. In the case of successful brand extensions, the results show positive reciprocal effects of extension trial on parent brand choice, particularly among prior non-users of the parent brand, and consequently on market share. The authors find evidence for potential negative reciprocal effects of unsuccessful extensions. In addition, the study shows that experience with the parent brand has a significant impact on extension trial, but not on extension repeat.

As competitive pressures mount, brand marketers seek ways to achieve growth while reducing the cost of new product introduction and the risk of new product failure. One popular brand strategy is to attach an existing brand name to a new product introduced in a different product category, that is, brand extension. Such a strategy is often seen as beneficial because of the reduced new product introduction cost and the increased chance of success (Kapferer 1994). In addition, a brand extension can produce reciprocal effects that enhance or diminish the equity of the parent brand.

Reciprocal effects research has focused on examining attitudinal changes toward the parent brand. From a managerial perspective, it is interesting to examine the impact of trial of an extension on choice and market share of the parent brand. Extension trial should strengthen consumers' propensities toward buying the parent brand unless the extension experience is negative. This effect should be most pronounced among consumers who have low levels of loyalty toward the parent brand, because parent brand sales are already maximized among highly loyal consumers. The role of category similarity in moderating reciprocal effects has also been examined in an attitudinal context, but not in an actual purchase context. In addition, the reciprocal effect of

extension purchase across prior users and prior nonusers of the parent brand has not been studied.

In addition to the potential benefits associated with positive reciprocal effects, the use of brand extensions provides economies in securing trial in the marketplace, as noted previously. In the words of Allan Maccusker, president of a brand consultancy group, "A lot of marketers are going this [the brand extensions] route because an established brand name will generate, hopefully, quicker trial by consumers and then heavier repurchase" (*Advertising Age*, p. 12). The assumption underlying the use of the brand extension strategy is that extensions induce trial due to brand awareness among existing consumers. However, little research empirically tests the role of brand extensions in inducing trial in the marketplace. Therefore, another goal of this research is to examine the relationship between prior experience with the parent brand and extension trial and repeat.

In summary, this research has three major objectives. First, we investigate the reciprocal effects of extension trial on parent brand choice among users and nonusers of the parent brand. Second, we examine the role of category similarity as a moderator of reciprocal effects. Third, we investigate the impacts of experience with the parent brand on trial and repeat of a brand extension.

We address the objectives outlined through a series of three studies. In Study 1, we demonstrate positive reciprocal effects of extension trial among prior nonloyal users and nonusers of the parent brand. In addition, we demonstrate that parent brand experience has a significant effect on extension trial but not on repeat. In Study 2, we examine the role of category similarity as a moderator of positive reciprocal effects. In Study 3, we show the existence of negative reciprocal effects associated with an extension product failure.

Researchers in the brand extensions area have relied primarily on marketing experiments conducted in lab settings in which consumers are typically provided with descriptions of hypothetical brand extensions and are asked to provide their instantaneous reactions (e.g., Aaker and Keller 1990; Keller and Aaker 1992). One limitation of this type of

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research is that effects may be overstated (Dacin and Smith 1994). In addition, reciprocal effects develop over time and frequently cannot be captured using this approach. Furthermore, the extensions are hypothetical and not necessarily indicative of what a firm would really consider doing. Finally, lab experiments such as those just described cannot capture the impact of actual experience with a brand extension on future purchasing in the parent category. Thus, although previous research offers valuable insights regarding brand extension strategies from a theoretical perspective, the use of these highly controlled lab experiments has, to some extent, limited the usefulness of this research from a managerial perspective. One exception is the research by Erdem (1998), who examined household purchase data collected after the brand extensions had been introduced and demonstrated that quality perceptions transfer between umbrella-branded products in the case of the companion categories of toothpaste and toothbrushes. Another exception is the research by Kim and Sullivan (1998), who model trial and repeat of a new brand introduction in the context of line extensions. However, neither of these studies explicitly focuses on testing a framework of positive and negative reciprocal effects.

We examine the phenomena of both direct and reciprocal effects across multiple brand extension cases by using ACNielsen scanner panel data to monitor household purchasing immediately before and after extension introduction. In addition, we provide a conceptual framework to examine factors that moderate reciprocal effects. An in-market study involving brand extension strategies and real brands provides rich insights for managers interested in evaluating the risks and merits of extension strategies.

All the brand extensions examined in this study represent national extensions of well-known brands. Although specific brand names and categories are not revealed because of the proprietary nature of the data, we provide examples and details of the categories to help interpret the results. We examine reciprocal effects by modeling parent brand choice, using extension brand experience as an independent variable. We develop logit models of extension trial and repeat using parent brand experience variables and other relevant purchase factors as independent variables to demonstrate direct effects. The article is organized as follows: First, we present a conceptual framework and hypotheses. Second, we describe the data. Third, we present an overview of the models along with the associated measures; describe Studies 1, 2, and 3; and discuss the key findings. In conclusion, we discuss the implications of this research and directions for further research.

Conceptual Framework

As previously noted, there has been mixed support for the existence of positive and negative reciprocal effects in the literature. Keller and Aaker (1992) find that positive reciprocal effects exist only when an average-quality parent brand introduces a successful extension. Keller and Sood (2000) posit that evaluations of parent brands that are already well regarded will not change significantly as a result of favorable extension experience. Gurhan-Canli and

Maheswaran (1998) show that enhancement effects exist for brand extensions that are similar to the parent brand.

In general, previous research finds support for the moderating role played by category similarity in influencing both positive and negative reciprocal effects. Milberg, Park, and McCarthy (1997) show that negative reciprocal effects can occur when extension similarity is extremely low. Keller and Sood (2000) demonstrate that negative reciprocal effects can also occur when the extension is highly similar to the parent brand. Gurhan-Canli and Maheswaran (1998) show that dilution of a family brand name occurs in response to incongruent and negative information, particularly when the extension is similar to the parent brand. The evidence regarding the existence of negative reciprocal effects at the brand attribute level is also considerable (e.g., Loken and Roedder-John 1993; Roedder-John, Loken, and Joiner 1998). However, it is less clear whether negative reciprocal effects exist at the overall attitude level (Keller and Aaker 1992).

To illustrate the process of reciprocal effect formation in an actual choice setting, we present a hypothetical example. Suppose Nivea, known for its skin-care products, introduces a cosmetic product under the Nivea brand name. The new product is tried by a group of consumers who are heterogeneous in their prior experience with Nivea skin care products. Assuming that the new entry is a success, the trial of the product is generally a favorable experience. The trial of the Nivea cosmetic furnishes new information regarding the Nivea brand name to both prior users and prior nonusers. Consistent with previous work in the context of product experience, such as Hoch and Deighton's (1989) and Kempf and Smith's (1998), the learning provided by the product experience will lead to strongly held beliefs regarding the Nivea cosmetic. Previous brand literature has viewed brand knowledge as a network of beliefs and associations (Roedder-John, Loken, and Joiner 1998). Therefore, the beliefs regarding the Nivea cosmetic product are transferable to the Nivea skin care brand.

However, two conditions must be present for the transfer to occur. First, the extension information must be deemed relevant in the parent category. Previous research has identified category similarity between the extension and parent categories as necessary for the extension information to be considered relevant, a condition satisfied in our Nivea example (Keller and Aaker 1992; Loken and Roedder-John 1993). Second, for this transfer to occur, the beliefs about the parent brand must undergo a change. Roedder-John, Loken, and Joiner (1998), in the context of flagship products, suggest that the network of beliefs linked to the flagship product tends to be extreme, strongly held, and resistant to change because of the accumulated exposure and experience with the flagship product. The discussion regarding flagship products is relevant to our analysis of the core parent brand. The beliefs associated with the core parent brand are likely to be of varying strength across different segments of consumers. Among segments of consumers that already have a high level of loyalty toward the Nivea skin care brand and have a well-developed set of associations regarding this brand, the provision of new information regarding Nivea cosmetics is unlikely to produce a significant change. This is particularly true if the new information does not significantly contradict the existing knowledge structure.

The consumers with a high degree of loyalty toward the Nivea skin care brand are likely to have beliefs and associations that are resistant to change. According to Roedder-John, Loken, and Joiner (1998), these may be viewed as brands that have a well-developed memory structure as a result of frequent exposure and direct experiences. Again, consistent with Roedder-John, Loken, and Joiner's (1998) arguments, the accumulated exposure and direct experiences among prior users of the parent brand make the parent brand beliefs of highly loyal prior users less resistant to change. Conversely, among segments of consumers with moderate to low loyalty toward the parent brand, the less frequent exposure to the parent brand suggests that these consumers' parent brand beliefs and associations are likely to be more amenable to change.¹ Therefore, the potential for a positive reciprocal effect is strongest among segments of consumers with low to moderate loyalty toward the parent brand.

Although this scenario applies to a successful brand extension, another possibility is negative reciprocal effects due to unsuccessful brand extension. Suppose that the Nivea cosmetic is discontinued in the marketplace because of low market share. Therefore, it is likely that extension triers were generally not favorably disposed toward the new product and that trial furnishes negative or at least neutral information regarding the brand. Among prior users, the provision of new negative information regarding an extension product is likely to contradict existing knowledge structures,

particularly among consumers with high levels of prior loyalty toward the parent brand. However, because the propensity to purchase the parent brand among prior nonusers is already zero, the provision of new negative information cannot result in a negative reciprocal (behavioral) effect among these consumers. Therefore, negative reciprocal effects of extension failure can be observed only among prior users, especially those with high loyalty toward the parent brand.

In summary, the introduction of a brand extension that is successful is likely to result in positive reciprocal effects. These positive reciprocal effects are likely to be moderated by category similarity; there will be stronger reciprocal effects under conditions of high category similarity. Conversely, negative reciprocal effects may be associated with a failed extension product. These negative reciprocal effects are likely to be strongest under conditions of high category similarity. We therefore propose that positive and negative reciprocal effects of extension trial on parent brand choice exist and are moderated by category similarity. Further positive (negative) reciprocal effects in the context of purchase behavior are limited to consumers with low to moderate loyalty toward the parent brand (users of the parent brand). A summary of the proposed effects is presented in Figure 1. In addition, experience with the parent brand is likely to increase the propensity to try the extension but not to repeat. In the next section, we outline the first of three studies designed to test this framework.

¹This is not to discount the possibility that there may be negative associations among prior nonusers. Because prior nonusers are defined as people who have not tried the parent brand in a one-year time period prior to extension introduction, any negative experience with the parent brand occurred at least one year before extension introduction. Following Feldman and Lynch (1988), we note that the passage of time should weaken information accessibility, which in turn may weaken the potential negative associations among prior nonusers or highly infrequent users.

Study 1

Reciprocal Effects of Brand Extension Introduction on the Parent Brand

As noted previously, research regarding both positive and negative reciprocal effects has been somewhat mixed. Ceiling effects associated with well-regarded brand names, difficulties associated with examining attitudinal shifts in

FIGURE 1
A Framework of Positive and Negative Reciprocal Effects

| | | Category Similarity | | | |
|-----------------|--------------|---|--|--|--|
| | | High | | Low | |
| Brand Extension | Successful | <u>Prior Nonloyal Users of Parent Brand</u> Positive | <u>Prior Nonusers of Parent Brand</u> Positive | <u>Prior Nonloyal Users of Parent Brand</u> No effect | <u>Prior Nonusers of Parent Brand</u> No effect |
| | Unsuccessful | <u>Prior Users of Parent Brand</u> Negative | <u>Prior Nonusers of Parent Brand</u> No effect | <u>Prior Users of Parent Brand</u> Negative | <u>Prior Nonusers of Parent Brand</u> No effect |

experimental settings, and the omission of prior usage as a moderating variable may account for some of these mixed findings in past research. Consumers are likely to be heterogeneous in their purchasing of a brand. It is not possible to enhance purchase probability of a brand among highly loyal users of the brand, simply because propensities to purchase the brand are already so high. This "ceiling effect" argument is consistent with the prior research findings that point out that evaluations of well-regarded brand names generally do not change on account of exposure to favorable extension information (Keller and Aaker 1992). However, among users with moderate to low levels of loyalty, the exposure to the extension brand may induce positive reciprocal effects by enhancing brand familiarity, strengthening brand attitude, and ultimately increasing the likelihood of purchasing the parent brand.

For prior nonusers, extension trial provides new information regarding a brand. Information generated from product trial typically results in increased brand recall and stronger brand attitudes, which in turn have a powerful impact on parent brand evaluation and purchase (Kempf and Smith 1998; Smith and Swinyard 1982; Wright and Lynch 1995). Thus, increases in memory and familiarity and attitudinal shifts resulting from the extension trial experience should induce reciprocal effects for the parent brand among prior nonusers. Consistent with these arguments, we expect that positive reciprocal effects of extension trial will be observed among prior nonloyal users and nonusers.

Impact of Parent Brand Experience on Extension Trial

Consumer behavior research suggests that information or learning gathered from product usage is often granted a special status by consumers (Hoch and Deighton 1989; Kempf and Smith 1998; Smith and Swinyard 1982). Information gathered from personal experience is more vivid and therefore more memorable (Kempf and Smith 1998). Because information from product experience is self-generated, it is deemed more trustworthy than information gathered from advertising or communications, which results in strongly held beliefs (Smith and Swinyard 1982). Thus, consumers with parent brand experience have greater parent brand knowledge, better recall of the parent brand, and greater confidence in their beliefs about the parent brand than consumers with no parent brand experience. It has also been suggested that an existing brand name provides an assurance of quality, thereby reducing the risks involved in purchasing a new product (Erdem 1998; Wernerfelt 1988).

Although both the direct effects of parent brand on the extension and the reciprocal effects are cross-category effects, brand extension researchers typically examine these as distinct processes. Whereas the former refers to formation of brand evaluations for a new brand introduction, the latter refers to changes in the evaluations of an existing brand. On the basis of these arguments, we hypothesize that parent brand experience increases the likelihood of extension trial.

Impact of Parent Brand Experience on Repeat Purchase Behavior

Information economics theory suggests that the quality of the product is unambiguously revealed during product use

(e.g., Nelson 1970, 1974). This is especially true when the product quality can be gauged accurately even with a single exposure to the product.² Thus, when the extension has been tried, the repeat purchase decision should depend on the evidence furnished by the trial experience rather than parent brand experience. In addition, the familiarity with the extension among both past users and nonusers of the parent brand is likely to be similar after the extension has been tried. Therefore, we expect that parent brand experience has no impact on repeat purchase of the brand extension.

Data

The data for this study, obtained from ACNielsen, provide household purchase histories for selected product categories for a national panel in the time period 1990–94. We used purchase data for three brand extensions introduced during this time period to test the hypotheses. Household purchase histories in the parent categories are available for approximately one year preceding the extension introduction and for one year following extension introduction. For each of the extension categories, data are available for one year following extension introduction. Given the nature of the categories examined, such as foods and personal care items, we believe that one year is sufficient to capture variations in purchase behavior due to the extension. The fictitious names Alpha, Gamma, and Zeta are introduced to label the three parent brands and their respective extensions. Alpha refers to a large personal care brand extended into a related personal care category. An example of this type of extension might be Nivea introducing Nivea beauty soap. Gamma refers to a food product extended into a related food category. An example of this type of extension is Hershey's introducing Hershey's chocolate milk. Zeta is a personal care brand extended into another personal care category (different from Alpha). An example of this type of extension is Dial bar soap introducing Dial deodorant. All three extensions leveraged the parent brand positioning in the extension category.

Criteria for qualifying households. Households in the panel enter and leave continuously. To ensure comparability in preextension and postextension introduction purchases, consistencies in time available for trial, and so forth, we constructed a "static" panel of participating households for each study. For each of the three cases, we included a household in the panel if it recorded at least one purchase in either of two frequently purchased categories during the first six months and during the last six months of the particular two-

²There may be conditions in which the influence of parent brand experience goes beyond the initial trial of the extension. This may be the case when products contain experience attributes whose qualities can only be gauged with repeated exposures to the product. This may also be true in the case of credence goods whose product quality is impossible to evaluate even after consumers have experienced the product. Other conditions in which a confirmatory bias may apply may include highly technical products that require a great deal of expert knowledge and image products (Hoch and Deighton 1989). This study is restricted to frequently purchased packaged goods products for which these conditions are not likely to apply.

year study period. To eliminate households that are infrequent users, we further required households to have made at least two purchases in both the parent and the extension categories during the one-year period following extension introduction and two purchases in the parent category in the one-year period before extension introduction.

Sometimes, an extension rollout takes place over a relatively long time period, so an important consideration is the date of extension introduction in a market. We identified the date on which the first purchase of the extension brand was made in a market, and we used the week prior to this date as the introduction date for the extension brand in that market. To balance the time available for purchasing before and after extension introduction, we excluded markets where the extension introduction took place either very early or very late.³

Descriptive Data

Table 1 contains information regarding the characteristics of both the parent and extension categories for the brands Alpha, Gamma, and Zeta. Also provided are data regarding market share and share of voice based on percentage of advertising expenditure for the parent brand categories before extension introduction and for the extension brands following extension introduction. The data provided in Table 1 give an overview of the types of product categories and the nature of competition in the categories used in this study. In addition, we use the information from Table 1 to gain insights into our findings.

³For brand Alpha, the dates of introduction varied over a 46-week period. In balancing the time period before and after extension introduction, we were able to retain 50% of the markets. For the brands Gamma and Zeta, we retained approximately 80% of the markets.

Reciprocal Effects of Extension Trial on Parent Brand Choice

Model development and measures. A model of household choices in the parent category demonstrating that significant changes in the likelihood of parent brand purchasing are observed after the trial of the extension in the extension category would provide strong evidence of the existence of reciprocal effects. We examine reciprocal effects of extension trial using a binary logit model in which the dependent variable is parent brand choice.⁴ The unit of analysis is an individual choice occasion. Therefore, there are multiple observations for each household. The model includes household heterogeneity, marketing-mix effects, and the effects of competition as independent variables. We estimate the model using purchase data for the parent category for the static panel in the time period following extension introduction. We describe the variables used in the logit choice model next.

⁴The multinomial logit model has been widely used in previous research (Guadagni and Little 1983; Kamakura and Russell 1989) to model brand choice behavior and capture price elasticities and changes in market structure. The multinomial logit model allows for the capture of competitive marketing-mix effects. However, in our context, because the focus is one brand introducing a brand extension, the binary logit approach with the choice of the parent brand as the dependent measure is a parsimonious approach to modeling the choice behavior in the parent category. The binary logit is also preferred because the loyalty coefficient in the multinomial logit does not enable us to estimate the incremental effect of the brand extension on choice of the parent brand over and above the impact of parent brand loyalty. This is because the loyalty coefficient is a general coefficient for all brands in the category and not specific to the parent brand. Because it is important to assess this incremental effect in the context of this research, the binary logit with the choice of the parent brand as the dependent variable is better suited to the purposes of this study.

TABLE 1
Key Characteristics of Parent and Extension Categories: Study 1

| Variables | Alpha | | Gamma | | Zeta | |
|---------------------------------------|-----------------|--------------------|-----------------|--------------------|-----------------|--------------------|
| | Parent Category | Extension Category | Parent Category | Extension Category | Parent Category | Extension Category |
| Category description | Personal care | Personal care | Food | Food | Personal care | Personal care |
| Number of brands | 18 | 25 | 45 | 7 | 25 | 22 |
| Average interpurchase time (in weeks) | 19.871 | 11.301 | 6.546 | 10.594 | 11.301 | 13.119 |
| Strength of the brand ^a | | | | | | |
| Market share ^b | 22% | 5% | 12% | 4% | 6% | 1% |
| Share of voice ^c | 14% | 15% | 3% | 4% | 3% | 2% |

^aFigures for market share and share of voice for the parent brand refer to the time period prior to extension introduction. For the extension brand, the figures reflect the market share and share of voice one year after the extension was introduced.

^bData obtained from various issues of *Market Share Reporter* (1990–95).

^cShare of voice figures were obtained from *LNA/Mediawatch Multimedia Service* (1990–95).

Parent brand experience (EXP). Prior experience with the parent brand is operationalized as a loyalty measure, that is, the frequency of purchasing the parent brand compared with the other purchases made in the category. This relative frequency measure is consistent with those in previous studies that measure brand loyalty (Russell and Kamakura 1994). This variable is constant for all choices made during the time period following extension introduction.⁵

Relative price (RELPR). We calculated the relative price per gram of the parent brand by indexing the parent brand's price per gram to a weighted average of the previous 14-day average price per gram or ounce for the major brands; weights were determined by market shares.⁶ Because data on competitors' prices are not available with every purchase, this is an approximate measure of competitive pricing.

Reciprocal effects indicator variable (IND). The reciprocal effects indicator is a dummy variable that indicates whether the extension was purchased on or before the date when a purchase in the parent category is made. This indicator variable is a "switch" that goes "on" (takes the value 1 as opposed to 0) when the extension trial takes place.

Displays (DISP) and advertisements (AD). The display and feature advertisement variables were also dummy (0/1) variables that indicated the presence of displays or feature advertisements associated with the parent brand.

Reciprocal effects logit model. Let $X = 1$ or 0 depending on whether or not the parent brand is chosen on a category purchase occasion. The probability that the parent brand is chosen is given by

$$(1) \quad P(X = 1) = \frac{e^{\alpha + \beta_1(EXP) + \beta_2(RELPR) + \beta_3(IND) + \beta_4(DISP) + \beta_5(AD)}}{1 + e^{\alpha + \beta_1(EXP) + \beta_2(RELPR) + \beta_3(IND) + \beta_4(DISP) + \beta_5(AD)}}$$

which can be rewritten as follows:

$$(1a) \quad \ln[P(X = 1)/P(X = 0)] = \alpha + \beta_1(EXP) + \beta_2(RELPR) + \beta_3(IND) + \beta_4(DISP) + \beta_5(AD),$$

where α and β_1 through β_5 are parameters to be estimated.

Overall model significance and predictive validity are judged, respectively, by means of the likelihood ratio test

⁵Heterogeneity has received increased attention in the modeling literature (Chintagunta, Jain, and Vilcassim 1991) because estimates of parameters of discrete choice models that ignore heterogeneity are likely to be biased and inconsistent (Hsiao 1986). Heterogeneity among households is incorporated in our model through parent brand experience (EXP).

⁶One of the limitations of using market shares of the major competitors as weights is that the heterogeneity in consideration sets across households is not captured. Given the dynamic nature of consideration sets across time and over purchase occasions (Andrews and Srinivasan 1995) and the need for information on marketing-mix variables (e.g., exposure to television advertising) to capture heterogeneity in consideration sets accurately, we did not incorporate this heterogeneity into the assessment of relative price. We acknowledge this as a limitation in the measurement of relative price. We thank the reviewer who pointed this out.

statistic (χ^2) and the classification accuracy (as judged by the percentage correctly classified).⁷ Because of unequal group sizes, the percentage correctly classified is compared with a benchmark based on a proportional chance criterion (Morrison 1969).⁸

The estimates for the reciprocal effects of extension trial for brands Alpha, Gamma, and Zeta are presented in Table 2. Reciprocal effects cannot exist at very high loyalty levels (e.g., for households with a 100% loyalty). Therefore, the analysis was restricted to households with a parent brand loyalty of less than 80% but greater than zero.⁹ Prior nonusers were analyzed separately. Among extension triers, only households that have had the opportunity to purchase in the parent category at least once following the trial of the extension were included in the analysis. Because the impact of the extension introduction was expected to vary on the basis of prior usage, the analyses for prior users and prior nonusers are presented separately.

In the case of the brand Alpha, displays and advertising information were not included, because these factors were active in less than 1% of the purchases made in this category. In the case of the brand Zeta, the display information is not included for the same reason. The reciprocal effect variable (IND) is significant at the 1% risk level for extensions Alpha and Zeta, but it is not significant for brand Gamma. The odds ratio for the reciprocal effect variable is 16 in the case of the brand Alpha and 52 in the case of the brand Zeta.¹⁰ This suggests that in the case of the brand Alpha, extension trial enhances the odds of purchasing the parent brand as opposed to some other brand by 16 times. Similarly, in the case of the brand Zeta, extension trial enhances the odds of purchasing the parent brand by 52 times. Across all three extensions, the parent brand experi-

⁷Typically, a holdout sample is used to avoid bias in estimating the predictive accuracy of a model. The logistic regression program in SAS uses a "jackknifing" approach that omits the observations one at a time and classifies them as "events" or "nonevents" on the basis of the model, which is estimated without the observations being classified. Because the SAS procedure provides an unbiased measure of predictive validity, we do not use a holdout sample to assess predictive validity (see SAS Institute Inc. 1983, p. 45).

⁸The proportional chance criterion is based on the hit rate, $\alpha^2 + (1 - \alpha)^2$, where α is the percentage of times the parent brand was purchased.

⁹The argument for truncating the loyal consumers at those with less than 80% loyalty is a conceptual one. Among perfectly loyal consumers, it is not possible to observe increases in the probability of purchasing the parent brand, because loyalty is already so high (a ceiling effect). An analysis of the distribution of frequencies across the various loyalty levels showed that across all categories, an 80% level of loyalty cutoff appeared to discriminate reasonably between the perfectly loyal group and the less than loyal group, because of a concentration of households around the 80% cutoff point across categories. We also did sensitivity analyses to ensure that choosing alternative cutoffs, such as 75%, 85%, and 90%, did not change the results significantly.

¹⁰The odds ratio for the brand Zeta is a large number because the brand has a relatively small market share in the parent category. Therefore, the prior probabilities of purchasing this brand are low.

TABLE 2
Reciprocal Impact of Extension Trial on Parent Brand Choice

| Variable | Prior Users | | | Prior Nonusers | |
|------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|---------------------------------|
| | Alpha | Gamma | Zeta | Alpha | Gamma |
| Constant | -.111 (.485) | -.743* (.328) | -2.516* (.485) | -2.732* (.409) | -.459 (.165) |
| Parent brand experience (EXP) | 1.749* 5.751 (.762) | 4.563* 95.938 (.236) | 4.224* 88.340 (.253) | — | — |
| Relative price (RELPRI) | -.798* .450 (.240) | -.710* .492 (.312) | .214 1.239 (.538) | -.374 .688 (.319) | -.709* .492 (.159) |
| Reciprocal effects indicator (IND) | 2.795* 16.359 (1.054) | .142 1.152 (.085) | 3.955* 52.180 (.399) | 1.451* 4.269 (.532) | -.139 .091 (.869) |
| Advertisements (AD) | — | .730* 2.074 (.280) | .092 1.097 (.538) | — | .424* 1.528 (.127) |
| Displays (DISP) | — | -.308* .735 (.167) | — | — | .032 .085 (1.032) |
| Sample size | 176 | 4546 | 2840 | 261 | 19,415 |
| Choice | 97 | 1726 | 769 | 19 | 4540 |
| -2 Log L χ^2 | 40.158 ($p = .000$) | 554.331 ($p = .000$) | 581.295 ($p = .000$) | 46.118 ($p = .000$) | 30.838 ($p = .000$) |
| Percentage correctly classified | 67% | 69% | 79% | 93% | 77% |
| Proportional chance | 50% | 52% | 60% | 87% | 64% |

*Significant at the $p < .01$ level.

Notes: Figures in boldface represent odds ratios; figures in parentheses represent standard errors.

ence variable is significant at the 1% risk level.¹¹ In the case of Gamma and Zeta extensions, the parent brand experience variable is the most influential of all the variables. In the case of the Alpha extension, the impact of the reciprocal effects indicator variable appears to be more influential than parent experience or relative price. Across all three extensions, the overall model is significant at the 1% level. The incremental percentages correctly classified using the model over and above the proportional chance criterion for the brands Alpha, Gamma, and Zeta are 17%, 17%, and 19%, respectively.

Reciprocal effects were also examined among prior nonusers of the parent brand, (i.e., EXP = 0). The results for extension trial among prior nonusers of the parent brand are also presented in Table 2. The limitations imposed on house-

holds to be included in the reciprocal effects model, that is, at least one purchase in the parent category following extension trial, resulted in a limited sample in the case of the brand Zeta, which precluded analysis of prior nonusers in this case. The impact of extension trial on parent choice is significant in the case of brand Alpha but is not significant for brand Gamma. Reciprocal effects of brand extension introduction were examined in terms of market share for a macro perspective. The parent brand market shares were compared before and after extension introduction among extension triers (see Table 3).¹²

Significant increases in market share were observed among prior nonusers for all three cases and among prior nonloyal users for brand Alpha. In the case of brand Zeta, there were indications of share increases among parent brand users, though this difference was not significant.

¹¹Note that the parent experience variable is expressed in terms of the frequency of purchasing the parent brand relative to all purchases made in the parent category. EXP is therefore a fraction that assumes a value between 0 and 1. The reason that the odds ratios are so large is that they represent changes in parent brand experience from 0 to 1, that is, 1 unit of the independent variable.

¹²We conducted a t-test to examine differences in market share before and after extension introduction. Because the shares were drawn from the same sample, a test for differences must account for correlations in the shares. This procedure is outlined by Cochran (1977).

TABLE 3
Percentage Change in Parent Brand Market Shares Before and After Extension Introduction: Means and Standard Deviations of Differences

| Extension | Prior Nonusers and Extension Triers (% Change) | Prior Users and Extension Triers (% Change) |
|-----------|--|---|
| Alpha | +8.1%** (.040) | +13%* (.090) |
| Gamma | +9.7%** (.020) | -4.5% <i>n.s.</i> (.043) |
| Zeta | +7%** (.023) | +2.5% <i>n.s.</i> (.028) |

* $p < .01$.

** $p < .05$.

Notes: Figures in parentheses represent standard deviations of the differences. *n.s.* = not significant.

These results are consistent with the previous findings regarding the relatively weak reciprocal effects in the case of prior nonloyal users of brand Gamma.

Impact of Parent Brand Experience on Extension Trial and Repeat

Model development and measures. In this section, the impact of parent brand experience on extension trial and repeat is quantified. Dichotomous dependent variables are introduced on the basis of classifying each household in the static panel as an extension trier or a nontrier (for the trial model) and classifying triers as either repeaters or nonrepeaters (for the repeat model). Thus, each household constitutes one observation for the trial model, each trier household constitutes one observation for the repeat model, and the information for each of the independent variables is captured at the household level, as opposed to the transaction level as in the previous analysis. The independent variables in the models are discussed next. Values for these variables were obtained through household purchase histories before extension introduction.

Parent brand experience (EXP). As discussed previously, parent brand experience is operationalized in terms of relative frequency of buying the parent brand in the parent category.

Deal proneness (DPRONE). Deal proneness is defined as the degree to which a consumer is influenced by sales promotion. We measured active deal proneness using Webster's (1965) deal proneness measure. For each household and for each brand in a given household's purchase history, we calculated the difference between the percentage of times a given household used a coupon when purchasing the particular brand and the average percentage of times a brand was bought using a coupon across all households. The overall deal proneness measure is a weighted average of this difference for the brands bought by a household; the weights

are market shares of the brands for the given household. Because information regarding deal proneness in the extension category before extension introduction was not available, we used the household's deal proneness in the parent category as a proxy for deal proneness in the extension category. This is consistent with prior research that suggests that there is a generalized deal proneness construct that results in a correlation in deal proneness across categories (Bawa and Shoemaker 1987).

Category experience (TOTCAT). Prior research suggests that the effect of brand knowledge may be different if the consumer is regarded as an expert rather than a novice in the context of the extension category (Broniarczyk and Alba 1994; Smith and Park 1992). The frequency of purchasing in a category is an indicator of the knowledge or expertise in a category (Alba and Hutchinson 1987). The number of purchases in the extension category after extension introduction was introduced as a third variable that influenced extension trial and repeat.

Trial model. Let $T = 1$ or 0 depending on whether or not a household purchases the extension. The equation for the probability of trial is

$$(2) \quad P(T = 1) = \frac{e^{\alpha + \beta_1(EXP) + \beta_2(DPRONE) + \beta_3(TOTCAT)}}{1 + e^{\alpha + \beta_1(EXP) + \beta_2(DPRONE) + \beta_3(TOTCAT)}}$$

which can be rewritten as follows:

$$(2a) \quad \ln[P(T = 1)/P(T = 0)] = \alpha + \beta_1(EXP) + \beta_2(DPRONE) + \beta_3(TOTCAT),$$

where the left-hand side represents the log odds ratio. If a coefficient, β_1 , β_2 , or β_3 , is significant, the corresponding variable has an impact on the log odds ratio.

Table 4 presents results of the logistic regression analyses for the trial and repeat models. The overall trial model is significant across all three extensions (as shown in Table 4). The percentage correctly classified is 77% for the brand Alpha, and the incremental classification over and above a proportional chance criterion is 12%. In the case of the brand Gamma, the percentage correctly classified is 75%, and the incremental percentage correctly classified is 13%. In the case of the brand Zeta, the percentage correctly classified is 90%, and the incremental percentage correctly classified is 8%.

As Table 4 shows, the parent brand experience variable (EXP) is significant across all three extensions at the 1% risk level, which is consistent with expectations. The odds ratio for this loyalty variable is 1.932 for the brand Alpha extension,¹³ 1.800 for the brand Gamma, and 6.752 for the brand Zeta. The other two variables, deal proneness and

¹³In addition to loyalty, another aspect of parent brand experience is the time-varying nature of parent brand preference. Consistent with Bucklin and Lattin (1991), we created the last brand bought in the parent category before extension introduction as an alternative parent brand experience measure. We created a dummy variable labeled LP, which takes on a value of 1 if a household's last purchase in the parent category before extension introduction was the parent brand and a value of 0 otherwise. The trial and repeat models, which we estimated incorporating the LP (last purchase dummy variable) instead of the EXP variable, yielded similar results.

TABLE 4
Impact of Parent Brand Experience on Extension Trial and Repeat

| Variable | Extension Trial Model | | | Extension Repeat Model | | |
|---------------------------------------|----------------------------------|---------------------------------|-----------------------------------|--------------------------------|---------------------------------|---------------------------------|
| | Alpha | Gamma | Zeta | Alpha | Gamma | Zeta |
| INTERCEPT | -1.650* (.141) | -1.910* (.094) | -3.694 (.113) | -.376 (.263) | -1.362 (.204) | -1.029 (.169) |
| Parent brand experience (EXP) | .659* 1.932 (.294) | .588* 1.800 (.205) | 1.910* 6.752 (.267) | .524 1.688 (.555) | .395 1.484 (.204) | -.491 .612 (.818) |
| Deal proneness (DPRONE) | 1.078* 2.938 (.241) | .420* 1.522 (.099) | 2.465* 11.762 (.204) | -.211 .810 (.348) | .194 1.215 (.422) | .048 1.049 (.389) |
| Total category experience (TOTCAT) | .034* 1.034 (.017) | .108* 1.114 (.010) | .138* 1.148 (.011) | .032 1.033 (.030) | .092* 1.097 (.017) | .183* 1.201 (.065) |
| Sample size | | | | | | |
| Total | 995 | 2428 | 4496 | 218 | 573 | 382 |
| Triers | 233 | 635 | 447 | 101 | 217 | 125 |
| Percentage correct | 77% | 75% | 90% | 52% | 65% | 69% |
| Proportional chance | 65% | 62% | 82% | 50% | 52% | 66% |
| -2 Log L χ^2 | 27.861 ($p = .000$) | 149.09 ($p = .000$) | 338.829 ($p = .000$) | 2.489 ($p = .477$) | 36.675 ($p = .000$) | 8.737 ($p = .033$) |

*Significant at the $p < .01$ level.

Notes: Figures in boldface represent the odds ratio; figures in parentheses represent standard errors.

total extension category experience, are also significant across all three extensions at the 1% level.

Repeat model. Our second hypothesis examines the impact of parent brand experience on extension repeat. To test this hypothesis, using only extension triers, we fit a logistic regression model to the data, which used the same set of independent variables as in the trial model but had extension repeat as the dependent variable. In addition, we constrained the sample to ensure that only households that purchased at least once in the extension category after trial of the extension were included in the sample. The results of the models are also presented in Table 4. The overall model is not significant in the case of the brand Alpha, and no individual variable is significant. For the Gamma and Zeta extensions, overall category experience (TOTCAT) is significant at the 1% level, and the corresponding overall models are significant. Most important, in all three cases, the parent brand experience variable is not statistically significant. In other words, as expected, parent brand experience does not affect repeat purchasing of a brand extension.

Summary and discussion. For brand Alpha, extension trial positively affected the propensity to buy the parent brand among both prior nonloyal users and prior nonusers. For brand Zeta, the analysis was restricted to prior users and supports a positive reciprocal effect of extension trial. In the case of the brand Gamma, no support for the hypothesized reciprocal effect of extension trial is observed among either

prior users or nonusers. The analyses also strongly support the positive impact of parent brand experience on extension trial but not on extension repeat across all three extensions. Therefore, from Study 1, we conclude the following:

- There can be positive reciprocal effects of extension trial on parent brand choice among both prior users and prior nonusers.
- Reciprocal effects of extension trial can result in market share increases for the parent brand, especially among prior nonusers of a brand.
- Parent brand experience has a significant impact on extension trial.
- Parent brand experience does not have an impact on extension repeat.

The lack of reciprocal effects in the case of the Gamma extension indicates the existence of factors that moderate reciprocal effects. Previous research suggests that perceived fit, category similarity between the parent and extension brands (e.g., Aaker and Keller 1990), and relevance of the parent brand associations in the extension category (e.g., Broniarczyk and Alba 1994) moderate cross-category effects. To investigate the role of category similarity and brand association relevance in this study, a survey of student consumers was undertaken for the three extensions used in this study. The measures used in the survey included (1) perceived similarity between parent and extension categories, (2) the relevance of parent brand associations in the extension category, and (3) overall perceived fit. Subjects ($n = 54$)

were asked to provide ratings of category similarity, overall perceived fit, and relevance of parent brand associations for the extensions used in this study.

The results reported in Table 5 show that the average ratings of overall perceived fit and extension association relevance for the three brands vary little (between 6.06 and 6.34 and between 2.32 and 2.63, respectively). However, as Table 5 shows, category similarity for the Gamma extension is far lower than the category similarity ratings for the other two extensions. The lower category similarity may account for the lack of significant reciprocal effects in the Gamma extension.

Another possible explanation for the lack of significant reciprocal effects in the case of the Gamma extension may be the nature of the parent category. This category is characterized by low interpurchase times, a relatively large number of brands (see Table 1), and a great deal of impulse buying. Therefore, it is possible that, in this category, market share increases are obtained by short-term promotional activities rather than by long-term investments in brand-building activities, so that brand extensions are unlikely to produce reciprocal effects for the parent brand. We examine each of these alternative explanations in Study 2.

Study 2

Two factors may contribute to the lack of reciprocal effects in the case of the Gamma extension: relatively low category similarity between the parent and extension categories and the unique nature of the parent category. One way to rule out the category itself as the explanation for the lack of reciprocal effects would be to demonstrate that other extensions of the same parent brand generate reciprocal effects. Also, greater evidence for the role of category similarity in moderating reciprocal effects is necessary to substantiate the

argument that category similarity may have contributed to the previous result regarding the Gamma extension.

The need to control for differences in parent brand and category characteristics made it important for us to focus on other extensions introduced by the same parent brand at various levels of category similarity to the parent brand. This also enables us to gain further insights into the role of category similarity as a moderator of reciprocal effects. The Gamma brand introduced two additional brand extensions within three years of introducing the first extension.¹⁴ Both extensions, introduced within one year of each other, were reasonably successful, in that they had gained noticeable market share in their extension categories by the end of the first year after introduction.

A second survey of student subjects ($n = 55$), incorporating the same measures of fit, relevance, and similarity as described in Table 5, was conducted. Subjects were asked to rate the original Gamma extension (Gamma 1) and the two later extensions (Gamma 2 and Gamma 3) on these measures. As shown in Table 6, the Gamma 2 extension category is perceived as more similar to the parent category than the original Gamma extension but does not reach the similarity levels of Alpha and Zeta. In contrast, the Gamma 3 extension category is perceived as less similar to the parent brand than the original Gamma extension. Therefore, if category similarity is a moderator of reciprocal effects, Gamma 2 is more likely than Gamma 3 to produce positive reciprocal effects. The ratings for the Gamma 1 extension were not significantly different from the ratings provided by subjects in

¹⁴No other brand extensions of the Gamma brand were introduced in the three-year time period separating the introduction of these extensions.

TABLE 5
Survey of Perceived Fit: Study 1

| | Alpha | Gamma | Zeta |
|---|--|-------------------|-------------------|
| Category similarity | 4.75 ^a (1.25) ^b | 2.81 (1.36) | 4.47 (1.64) |
| Relevance of key parent brand association to extension ^c | 2.39 (1.81) | 2.63 (2.07) | 2.32 (2.04) |
| Overall perceived fit | 6.34 (.98) | 6.06 (1.06) | 6.06 (.97) |
| t-Tests | | | |
| | Alpha Versus Gamma | Gamma Versus Zeta | Alpha Versus Zeta |
| Category similarity | $p < .01$ | $p < .01$ | $p = .10$ |
| Association relevance | $p > .10$ | $p < .05$ | $p > .10$ |
| Overall perceived fit | $p < .05$ | $p > .10$ | $p < .10$ |

^aNumbers represent means.

^bNumbers represent standard deviations.

^cSubjects were asked to name the first parent brand associations that came to mind and rate the relevance of the first three associations in the extension category. The most commonly mentioned association across consumers was used in the calculation of extension association relevance. Extension association relevance is reverse-coded, where 1 = "very relevant" and 7 = "very irrelevant."

TABLE 6
Survey of Perceived Fit: Study 2

| | Gamma 1 | Gamma 2 | Gamma 3 | t-Test (Gamma 2 Versus Gamma 3) |
|--|--|----------------|----------------|--|
| Category similarity | 2.91 ^a (1.33) ^b | 3.77 (1.51) | 2.08 (1.34) | $p < .01$ |
| Relevance of key parent brand association to extension ^c | 2.51 (2.18) | 3.66 (1.65) | 4.53 (2.01) | $p < .05$ |
| Overall perceived fit | 6.14 (.84) | 4.92 (1.49) | 4.38 (1.66) | $p < .01$ |

^aNumbers represent means.

^bNumbers represent standard deviations.

^cSubjects were asked to name the first parent brand associations that came to mind and rate the relevance of the first three associations in the extension category. The most commonly mentioned association across consumers was used in the calculation of extension association relevance. Extension association relevance is reverse-coded, where 1 = "very relevant" and 7 = "very irrelevant."

the previous survey, which thus makes comparisons across surveys seem reasonable.

Scanner panel data, analogous to the data in Study 1, were obtained from ACNielsen for the two additional Gamma extensions and analyzed as in Study 1. The results for the reciprocal effects of extension trial across prior users (with a loyalty less than .8) and prior nonusers are presented in Table 7. The Gamma 2 extension (which has a relatively high level of category similarity) has a significant, positive reciprocal effect among both prior users and prior nonusers of the parent brand. A significant reciprocal effect of the Gamma 3 extension (which has a relatively low category similarity) is observed, but only among prior nonusers of the parent brand.¹⁵ Furthermore, the odds ratio (1.362) associated with this effect among prior nonusers is considerably smaller than the analogous odds ratio for Gamma 2 (1.771), suggesting that the reciprocal effect is weaker among prior nonusers for the Gamma 3 extension than for the Gamma 2 extension.

Study 2 provides evidence of the role of category similarity in moderating reciprocal effects and eliminates brand Gamma's parent category characteristics as a possible reason for the lack of reciprocal effects observed in the Gamma extension of Study 1. By controlling for differences in parent brand characteristics, we show that a low category similarity between the parent and extension categories may hinder the transfer of brand equity, particularly among prior users of the parent brand.¹⁶ In summary, Study 2 suggests the following:

¹⁵A prior nonuser of the Gamma parent brand may have tried the previous brand extension (in Study 1). Therefore, it was necessary to ensure that a prior nonuser of the Gamma parent brand was also a nonuser of the first extension. We checked to ensure that prior nonusers of the Gamma extension were also nonusers of the Gamma 1 extension.

¹⁶In addition, to confirm the existence of forward transfer effects—that is, the impact of parent brand experience on extension trial but not on repeat—trial and repeat models similar to the ones described previously and in Table 4 were estimated for Gamma 2 and Gamma 3. The results confirm the findings from Study 1. Parent brand experience had a significant impact on extension trial but not on repeat in both the Gamma 2 and Gamma 3 cases.

•The potential for positive reciprocal effects is enhanced by a high degree of category similarity between the parent and extension brands.

Although we observe the existence of positive reciprocal effects across various extensions in Studies 1 and 2, it is clear that not all brand extensions produce such positive effects. It is of interest to identify the boundaries to the existence of positive reciprocal effects. Can conditions be identified under which positive reciprocal effects do not exist? Can there be negative reciprocal effects, and what situations lead to such a scenario? We investigate these issues in Study 3.

Study 3

Loken and Roedder-John (1993) find that unsuccessful brand extensions can dilute the parent brand names by diminishing the favorable attribute beliefs that consumers have learned to associate with the family brand name. Whereas Loken and Roedder-John's (1993) study indicates that specific attribute beliefs are diluted, Keller and Aaker (1992) show that there is no negative reciprocal effect in terms of overall attitude as a result of unsuccessful brand extensions. However, Keller and Sood (2000) find evidence of negative reciprocal effects in an experimental setting. These effects were evident when consumers had an unfavorable product experience with a similar brand extension. The suggestion that problems related to extension performance may lead to negative reciprocal effects has been echoed by Sullivan (1990). Her findings suggest that performance-related problems may result in negative reciprocal effects in umbrella-branded products. In Study 3, we investigate the hypothesis that trial of an unsuccessful extension can decrease the likelihood of purchasing the parent brand among prior users of the parent brand.

Scanner panel data similar to the data used in Studies 1 and 2 were obtained on a failed extension, Eta, which was withdrawn from the market approximately 18 months after its introduction.¹⁷ The parent brand is a well-known food

¹⁷The extension failure was chosen by scanning wire service reports and LEXIS-NEXIS announcements and selecting a recent example of a product that was withdrawn from the marketplace.

TABLE 7
Reciprocal Impact of Extension Trial on Parent Brand Choice: Study 2

| Variable | Prior Users | | Prior Nonusers | |
|------------------------------------|-----------------------------------|-----------------------------------|---------------------------------|----------------------------------|
| | Gamma 2 High Similarity | Gamma 3 Low Similarity | Gamma 2 High Similarity | Gamma 3 Low Similarity |
| Constant | -1.092* (.051) | -2.050 (.096) | -1.152* (.099) | -2.619* (.153) |
| Parent brand experience (EXP) | 2.775* 16.051 (.050) | 2.396* 10.983 (.068) | — | — |
| Relative price (RELPRI) | -.883* .439 (.034) | -.025 .975 (.066) | -.862* .422 (.068) | -.273* 1.314 (.108) |
| Reciprocal effects indicator (IND) | .150* 1.163 (.024) | .052 1.053 (.032) | .571* 1.771 (.063) | .309* 1.362 (.060) |
| Advertisements (AD) | .082* 1.086 (.025) | -.102 .902 (.060) | .073 1.076 (.049) | .100 1.106 (.081) |
| Displays (DISP) | .097* .907 (.024) | .117* 1.124 (.046) | -.009 .991 (.046) | .036 1.036 (.074) |
| Sample size | 120,616 | 45,747 | 52,732 | 29,611 |
| Choice | 19,822 | 9169 | 4541 | 2965 |
| -2 Log L χ^2 | 3612.540 ($p = .000$) | 1231.822 ($p = .000$) | 249.783 ($p = .000$) | 33.123 ($p = .000$) |
| Percentage correctly classified | 86% | 80% | 91% | 90% |
| Proportional chance | 72% | 68% | 84% | 82% |

*Significant at the $p < .01$ level.

Notes: Figures in boldface represent the odds ratio; figures in parentheses represent standard errors.

brand and has been in existence for several years. The parent brand is a market leader with a 53% market share in the time period prior to the introduction of a food extension in a category that was perceived as dissimilar to the parent brand category and as low in overall fit (ratings of 1.92 and 3.11, respectively).

The data were analyzed in a manner similar to the analyses of Studies 1 and 2. The results are presented in Table 8. As can be seen, the reciprocal effects indicator (IND) has a significant, negative coefficient, and this coefficient is not significant among nonusers. This suggests that there are negative reciprocal effects of extension trial on the parent brand among prior users. This study shows that a failed extension (where failure is defined as the extreme situation when a brand is eventually withdrawn from the market) may cause negative reciprocal effects among prior users of the parent brand. In summary, Study 3 suggests the following:

- An unsuccessful extension can produce negative reciprocal effects among prior users of the parent brand, even when the extension category has relatively low similarity to the parent category.

Discussion

Summary

Our findings indicate that positive reciprocal effects of extension trial exist, particularly among nonloyal users and among prior nonusers of the parent brand. These positive reciprocal effects also appear to translate into market share increases. In our research, we show that category similarity appears to moderate the existence and magnitude of positive reciprocal effects. In addition, negative reciprocal effects of unsuccessful extensions exist among prior users of the parent brand. A summary of the findings from the various studies is presented in Figure 2.

The findings from this research are generally consistent with previous findings based on experimental data (e.g., Gurhan-Canli and Maheswaran 1998; Keller and Aaker 1992; Roedder-John, Loken, and Joiner 1998). Building on previous research by Keller and Aaker (1992), our research shows the existence of positive reciprocal effects in terms of parent brand choice associated with successful extensions and examines the role of prior parent brand experience as a moderator of recip-

TABLE 8
Reciprocal Impact of Extension Failure on Parent Brand Choice: Study 3

| Variable | Eta Failed Extension | |
|------------------------------------|----------------------------------|--------------------------------|
| | Prior Users | Prior Nonusers |
| Constant | -1.362* (.338) | -2.287* (.775) |
| Parent brand experience (EXP) | 2.207* 9.085 (.194) | — |
| Relative price (RELPRI) | -.078 .926 (.090) | .238 1.269 (.214) |
| Reciprocal effects indicator (IND) | -.453* .636 (.099) | -.171 .842 (.241) |
| Advertisements (AD) | .435* 1.546 (.152) | .444 1.560 (.377) |
| Displays (DISP) | .998* 2.713 (.217) | .608 1.836 (.589) |
| Sample size | 3604 | 979 |
| Choice | 1303 | 189 |
| -2 Log L χ^2 | 216.240 ($p < .000$) | 4.402 ($p = .354$) |
| Percentage correctly classified | 65% | 82% |
| Proportional chance | 54% | 69% |

*Significant at the $p < .01$ level.

Notes: Figures in boldface represent the odds ratio; figures in parentheses represent standard errors.

rocal effects. The previously overlooked role of parent brand experience as a moderator of reciprocal effects suggests a possible explanation for mixed findings regarding positive reciprocal effects in prior research that has used attitudinal data.

Previous studies, such as Gurhan-Canli and Maheswaran's (1998), Loken and Roedder-John's (1993), and Roedder-John, Loken, and Joiner's (1998), provide evidence of the existence of negative reciprocal effects at the attribute level. We find evidence of negative reciprocal effects of extension failure on parent brand choice among prior users of the parent brand. Among prior nonusers, no negative reciprocal effects were apparent because of these consumers' low prior probability of purchasing the parent brand. Establishing the potential for negative reciprocal effects in a behavioral setting contributes to our knowledge regarding the impact of a failed extension on consumer choice behavior.

This research contributes to the extant knowledge regarding category similarity as a moderator of positive reciprocal effects by examining its role in a real-world setting. Consistent with previous findings in lab settings (Gurhan-

Canli and Maheswaran 1998; Keller and Aaker 1992), we find evidence of a positive association between the magnitude of a positive reciprocal effect and the degree of similarity between the extension and parent categories. However, category similarity did not appear to matter as much in the context of negative reciprocal effects. Further research should focus on the differential role of category similarity in the case of successful versus unsuccessful extensions.

Previous research has shown that buyers who lack information regarding product quality tend to use brands as indicators of product quality (Rao, Qu, and Ruekert 1999). Therefore, our findings regarding the impact of experience with the parent brand on extension trial are not unexpected. However, scant research exists that examines the role played by parent brand experience on extension repeat purchases. Our findings provide evidence that the role of parent brand experience in the evaluation of a brand extension diminishes after trial. This finding has implications for researchers who support the existence of confirmatory biases that may operate and prevent a product from being judged on its own merit. However, our findings may be confined to frequently

FIGURE 2
Testing a Framework of Positive and Negative Reciprocal Effects: A Summary of Findings

| | | Category Similarity | | | |
|------------------------|--------------|--|--|---|---|
| | | High | | Low | |
| Brand Extension | Successful | <u>Prior Nonloyal Users of Parent Brand</u> Positive <i>Confirmed in Studies 1 and 2</i> | <u>Prior Nonusers of Parent Brand</u> Positive <i>Confirmed in Studies 1 and 2</i> | <u>Prior Nonloyal Users of Parent Brand</u> No effect <i>Confirmed in Studies 1 and 2</i> | <u>Prior Nonusers of Parent Brand</u> No effect <i>Confirmed in Study 1</i> |
| | Unsuccessful | <u>Prior Users of Parent Brand</u> Negative | <u>Prior Nonusers of Parent Brand</u> No effect | <u>Prior Users of Parent Brand</u> Negative <i>Confirmed in Study 3</i> | <u>Prior Nonusers of Parent Brand</u> No effect <i>Confirmed in Study 3</i> |

purchased packaged goods for which product trial may be sufficient to gain complete information regarding quality. Further research incorporating experience or credence goods will enhance the understanding of the role of parent brand experience in influencing repeat purchases.

Managerial Implications

Brand managers need to consider potential reciprocal effects in assessing the benefits of extension introduction. The role of brand extensions in enhancing the appeal of the parent brand among prior nonusers of the parent brand has been overlooked as an important added benefit of the extension strategy.

The introduction of a brand extension also has associated risks. The failure of a brand extension can harm brand equity by producing negative reciprocal effects. Contrary to what was believed previously, this appears to be the case even when the extension is introduced in a category with relatively little similarity to the parent category.

That parent brand experience had an impact on extension trial but not on repeat purchases suggests that the extension strategy may be used primarily to reduce the initial expenditures associated with product introduction. However, parent brand experience appears to have little impact on long-term repeat purchasing of an extension across a range of cases in which perceived similarity between the parent and extension categories varied considerably.

Limitations and Further Research

Reciprocal effects have been investigated in this article entirely in the context of purchase behavior. One way to strengthen the findings would be to support the purchase behavior data with attitudinal data. In addition, no data involving a highly similar extension that failed in the market were available. Cases of this nature will strengthen our framework.

Another issue that we do not address is the similarity of the target market for the parent and extension brands and the role of target market similarity versus category fit in influencing the transfer of associations from parent to extension categories. In other words, it is possible that reciprocal effects may exist, even in the absence of category similarity, if the target audience for the parent and extension products is similar. Although we have not addressed this in the current study, this is a promising avenue for further research.¹⁸

The potentially moderating roles played by factors such as extension category loyalty in the direct transfer of parent brand experience to the extension category are not examined in this research. Further research should examine the factors that may moderate the impact of parent brand experience on extension trial and should assess the validity of the findings across various categories, such as services or technical products.

¹⁸We thank a reviewer for this insight.

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