Price Effects on Brand Extension Quality Evaluations

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Abstract

This research replicates recent findings showing that the perceptual impact of price on brand extension evaluations is greater for dissimilar than similar extensions. This research extends prior findings by generalizing the effect to a new product category, a convenience grocery food, and by showing that more price-related thoughts and price-quality inferences occurred in the processing of dissimilar than similar extensions. This research also considers perceived quality variance among the brands within a product category as a moderator of the price effect. Results of this research, which are based on a laboratory experiment using student subjects, suggest that manufacturers attempting to leverage brand equity by introducing extensions somewhat dissimilar from the original brand should consider that consumers may be more likely to make price-quality inferences. Consequently, a manufacturer introducing a dissimilar extension should use caution if a low price is employed as consumers might infer that the new extension represents a low quality offering, rather than being good value.
Price Effects on Brand Extension Quality Evaluations

Introduction

The brand extension strategy continues to be widely employed by practitioners and of substantial interest to researchers (cf. Bottomley & Holden 2001, Klink & Smith 2001, Buchanan, Simmons & Bickart 1999, Barrett, Lye & Venkateswarlu 1999). Brand extension leveraging and stretching strategies do not guarantee success, yet they are often used to capitalize on marketplace growth opportunities (Dawar & Anderson 1994, Lane 2000) and to exploit positive brand equity (Kumar & Ganesh 1995, Park & Srinivasan 1994, Shocker, Srivastava & Ruekert 1994). Although the brand extension research shows that extensions tend to receive more favorable consumer evaluations when the similarity of the extension to the core brand is high (Aaker & Keller 1990, Boush & Loken 1991, Park, Milberg & Lawson 1991), marketers are often motivated to extend brands to seemingly dissimilar categories to take advantage of marketplace opportunities.

Consequently, recent research has considered how managers might enhance the probability of consumer acceptance when introducing less similar extensions. For instance, research suggests that a high price strategy used to introduce a less similar extension may enhance extension quality evaluations as price-quality inferences are more likely for dissimilar extensions than similar extensions (Taylor & Bearden 2002). Additionally, others have shown that perceptions of incongruent extensions may be more favorable when ads for these extensions are exposed repeatedly (Lane 2000); that brand extensions introduced in an ordered fashion (from closest to farthest from the core brand) may enhance perceptions of coherence resulting in greater likelihood of purchase (Dawar & Anderson 1994); and that evaluations of extension fit may be improved when a sub-branding strategy (i.e., the use of a new brand name in conjunction with a family brand name) is employed (Milberg, Park & McCarthy 1997). Clearly, then, understanding how different marketing actions may influence consumer perceptions regarding the degree to which a brand can be
successfully extended remains an important area of inquiry (Klink & Smith 2001, Gürhan-Canli & Maheswaran 1998).

The research presented here contributes to that understanding by replicating and extending Taylor and Bearden’s (2002) finding that higher priced dissimilar extensions are more likely to receive a perceived quality boost from a price-quality inference than are higher priced similar extensions. Specifically, the research presented here extends their findings by replicating their results in a new product category, grocery foods. The research generalizes Taylor and Bearden’s (2002) finding from a higher priced consumer semi-durable category (i.e., clock radios used by Taylor & Bearden 2002) to a lower priced, more frequently purchased grocery product category, frozen pizza. This generalization to a different extension product category context is important given that the nature of these categories differs considerably. Furthermore, a large percentage of new grocery products represents some form of brand leverage strategy each year (cf. Keller 1998). This research makes a further contribution by examining the process by which price information may influence extension evaluations. It also suggests that consumer perceptions regarding quality variance among brands within a product category may moderate the impact of price information on brand extension evaluations. The primary implication of this research is that manufacturers attempting to leverage brand equity by introducing extensions somewhat dissimilar from the original brand should consider that consumers may be more prone to make price-quality inferences regarding these extensions. This suggests that a manufacturer introducing a dissimilar extension should use caution if a low price positioning strategy is employed as consumers might infer that the new extension represents a low quality offering, rather than a good value. In the following sections of the paper, hypotheses are developed and presented, the method is described, results are reported, and the implications of the findings are discussed.

Hypotheses
Recent findings suggest that the influence of price information on new brand extension evaluations may depend on the similarity of the extension to the core brand. From an information processing paradigm, Taylor and Bearden (2002) found support for their
hypothesis that price information has a larger positive impact on perceived quality evaluations of dissimilar extensions. They employed an experimental methodology whereby brands of wrist watches and cameras were hypothetically extended to clock radios, and price information was presented along with the target extension. Their findings suggested, in the evaluation of a similar extension, that price information would not be perceived as particularly diagnostic of extension quality because quality level could be inferred from that of the core brand. Extensions perceived as similar to the core brand were expected to be evaluated largely based on affect transfer from the core brand (cf. Keller & Aaker 1992). For extensions perceived to be dissimilar to the core brand, however, price was thought to be more diagnostic of extension quality since it could not be inferred directly from the core brand (cf. Ahluwalia & Gürhan-Canli 2000).

Replicating the finding that similarity moderates the influence of price information on extension quality evaluations within a grocery product category suggests the following hypothesis:

**H1:** Price information will have a larger positive influence on perceived quality evaluations of dissimilar grocery product extensions than similar grocery product extensions.

Taylor and Bearden’s (2002) research did not provide evidence of the underlying quality evaluation process, however. Given the rationale that price information is more diagnostic in the evaluation of dissimilar extensions, and therefore has a larger influence in a subsequent quality evaluation, a greater incidence of price-related thoughts and price-quality inferences (cf. Lichtenstein & Burton 1989, Rao & Monroe 1989, Monroe & Krishnan 1985, Peterson & Wilson 1985) should occur during the evaluation of dissimilar extensions as compared to similar extensions. Consequently:

**H2:** There will be a higher incidence of price related thoughts in the evaluation of dissimilar than similar extensions.
H3: There will be a higher incidence of price-quality inference related thoughts in the evaluation of dissimilar than similar extensions.

**METHOD**

**Overview**

This study was patterned after Taylor and Bearden’s (2002) research methods, although the present methods include several important extensions. The study conducted here was a 2 (dissimilar vs. similar brand extension) x 2 (low vs. high brand extension price) x 2 (moderate vs. higher core brand quality) between-subjects design. Similarity was manipulated by varying the core product categories, while the brand extension product category was held constant between the similar and dissimilar extensions (cf. Morrin 1999). The price manipulation was developed by adding and subtracting approximately 40 percent of the category average market price to and from the price of the extension (cf. Urbany, Bearden, Kaicker & Smith-de Borreiro 1997, Kalwani & Yim 1992, Dodds, Monroe & Grewal 1991, Berkowitz & Walton 1980). The price stimuli were within the category price range found in the marketplace. The similarity and price factors enabled tests of the predicted interaction, while the core brand quality manipulation created a realistic context by employing non-fictitious brand names and also served to enhance generalizability (cf. Klink & Smith 2001). A total of 279 undergraduate business students at a large public university participated in the experiment.

**Pretests**

A series of pretests were conducted to identify product categories and relevant brands to be used in the study. A first pretest was conducted to identify similar and dissimilar product categories. Subjects were presented with several core product brands (e.g., Prego Spaghetti Sauce, Lays Potato Chips) and asked to indicate how dissimilar or similar (on a 9-point scale) a new brand extension would be if the brand introduced the new frozen pizza product. Based on this first pretest, the core product category chosen for the similar extension was spaghetti sauce, while the potato chip product category was selected for the
dissimilar extension ($X_{SIM}=6.76$ vs. $X_{DIS}=4.58$; $t_{35}=3.33$, $p<.01$). A second pretest was conducted to identify relevant brand names. Again, subjects rated (on 9-point scales) the quality of both spaghetti sauce and potato chip brands, as well as their familiarity with the brands. Based on this second pretest, the spaghetti sauce brand names selected for the similar extensions were Hunt’s and Prego ($X_{MQ}=6.28$ vs. $X_{HQ}=7.55$, $t_{28}=2.89$, $p<.01$). The potato chip brand names selected for the dissimilar extensions were Golden Flake and Lays ($X_{MQ}=5.23$ vs. $X_{HQ}=6.94$, $t_{30}=5.20$, $p<.01$). Importantly, these brand names were also desirable because pretest subjects judged the brand names within each quality level to be similar with respect to familiarity ($X_{FAM-MQ-DIS (GOLDENFLAKE)}=5.26$ vs. $X_{FAM-MQ-SIM (HUNT’S)}=5.03$; $t_{38}=4.0$; $X_{FAM-HQ-DIS (LAYS)}=8.21$ vs. $X_{FAM-HQ-SIM (PREGO)}=7.71$; $t_{38}=1.52$).

Table 1 summarizes the product category stimuli set and price manipulations used in the study.

**TABLE 1**

**EXPERIMENTAL STIMULI**

<table>
<thead>
<tr>
<th>Brand Extension</th>
<th>Similarity</th>
<th>Brand Quality</th>
<th>Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lays Frozen Pizza</td>
<td>Dissimilar</td>
<td>High Quality</td>
<td>$1.45, $3.69</td>
</tr>
<tr>
<td>Golden Flake Frozen Pizza</td>
<td>Dissimilar</td>
<td>Moderate Quality</td>
<td>$1.45, $3.69</td>
</tr>
<tr>
<td>Prego Frozen Pizza</td>
<td>Similar</td>
<td>High Quality</td>
<td>$1.45, $3.69</td>
</tr>
<tr>
<td>Hunt’s Frozen Pizza</td>
<td>Similar</td>
<td>Moderate Quality</td>
<td>$1.45, $3.69</td>
</tr>
</tbody>
</table>

**Measures and Procedure**

The primary dependent variable, extension quality evaluation, was based on measures used in prior research (cf. Taylor & Bearden 2002, Broniarczyk & Alba 1994, Keller & Aaker 1992, Buchanan et al. 1999, Dodds et al. 1991, Grewal, Monroe & Krishnan 1998). The quality evaluation measure asked subjects to rate the extension on 9-point scales in terms of: low quality / high quality; inferior / superior; worse than most brands / better than most brands. The average intercorrelation of these three items was .76, and the operational dependent variable was formed as the average of the three items. The coefficient alpha estimate of internal consistency was .90 for this measure.
In an extension of Taylor and Bearden’s method, after completing the quality evaluation measure, subjects were asked to provide their thoughts about the new brand extension offer by writing them in spaces provided on the instrument. Subjects also responded to several manipulation check and potential covariate measures. The similarity manipulation check measure was the average of four 9-point scales asking subjects to rate the overall similarity of the brand extension to the core brand product as: dissimilar / similar; a bad fit for the company / good fit for the company; not logical / very logical; not appropriate / very appropriate (cf. Broniarczyk & Alba 1994, Boush & Loken 1991). Additional manipulation checks included a measure of perceived price (low / high) and a measure of the perceived quality of the core brand (the average of the same items used to measure brand extension quality). Finally, potential covariates included a 9-point measure of the degree to which subjects perceived quality variance across brands in numerous product categories (cf. Jun, Mazumdar & Raj 1999, Broniarczyk, Hoyer & McAlister 1998, Monroe & Krishnan 1985, Olson 1977) and a 9-point measure of core brand familiarity (cf. Rao & Monroe 1988, Monroe & Krishnan 1985, Park & Lessig 1981).

Subjects were told that a new product testing service used by market research firms was being evaluated (cf. Keller & Aaker 1992). They first responded to a set of preliminary questions including the quality variance measure. Next, the target extension was presented in a short descriptive paragraph discussing the product (cf. Keller & Aaker 1992, p.40). Finally, subjects worked through the dependent measures, a series of manipulation check measures, and a brand familiarity question. Subjects were then debriefed, thanked and excused.

RESULTS

Manipulation Checks
One-way analyses of variance tests were conducted to assess the impact of the similarity manipulation ($F_{1, 277} = 72.88$, $p < .01$), the price manipulation ($F_{1, 277} = 157.69$, $p < .01$), and the two core brand quality levels ($F_{1, 273} = 124.65$, $p < .01$). The similar (i.e., spaghetti sauce to frozen pizza) and dissimilar (i.e., potato chip to frozen pizza) extensions were perceived as
expected with respect to similarity ($X_{\text{DIS}}=4.80$ vs. $X_{\text{SIM}}=6.61$; $t_{277}=8.54$, $p<.01$). The prices of the extensions were also perceived as expected (Price: $X_{\text{LP}}=2.55$ vs. $X_{\text{HP}}=5.25$; $t_{277}=12.56$, $p<.01$). Finally, the moderate quality core brands (i.e., Hunt’s and Golden Flake) and the higher quality core brands (i.e., Prego and Lays) also differed as intended (Brand Name Evaluation: $X_{\text{MQ}}=5.12$ vs. $X_{\text{HQ}}=7.19$; $t_{273}=11.61$, $p<.01$).

Full analysis of variance was performed on the manipulation check measures (Perdue & Summers 1986). Although several modest crossover effects occurred in the full $2 \times 2 \times 2$ analysis involving the three manipulated factors and their respective manipulation check measures, the relative sizes of these effects were substantially smaller (the largest eta-squared being .04) than the observed main effects for the three independent variables (eta-squared of .21, .37, .32 for similarity, price, and brand quality manipulations respectively) on their corresponding manipulation check measures. As discussed by Perdue and Summers (1986, p. 323), the critical consideration is that the size of the main effect being checked in the analysis is larger than the cumulative size of any crossover effects. These results revealed that the size of each of the three target main effects was considerably larger than the cumulative size of the modest crossover effects.

**Dependent Variable Analyses**

In an initial analysis, measures of subjects’ perceived quality variance across brands of frozen pizza and their familiarity with the core brand name of the extension were first evaluated as potential covariates. Using extension quality evaluation as the dependent variable, covariate by independent variable interaction tests revealed a significant similarity by price by quality variance interaction. This interaction indicated that the perceived quality variance variable was not appropriate to later consider as a covariate, but should instead be considered as a factor in subsequent ANOVA analysis. Consequently, the 9-point quality variance across brands variable was split at the median ($M=7.0$). Subjects who rated the item as 6 or lower were placed in the lower perceived quality variance group ($n=118$), and subjects who rated the item as 7 or higher were placed in the higher perceived quality variance group ($n=161$). Interpretation of the check measures for each group was unchanged from that of the interpretation of the check measures for the full
sample. Moreover, there were no differences between the groups in terms of core brand name familiarity. Finally, there were no additional interactions between any independent variable and potential covariate on extension quality evaluation. Results are next presented for each dependent variable.

**Quality Evaluation Results.** Results from a four factor ANOVA, including the perceived quality variance variable, revealed three significant main effects: for similarity ($F_{1,263}=21.67, p<.01$), for price ($F_{1,263}=10.04, p<.01$), and for brand quality ($F_{1,262}=39.75, p<.01$) on the quality evaluation measure. Results also revealed a significant similarity by price by quality variance across brands of frozen pizza interaction ($F_{1,263}=5.64, p<.05$). A regression analysis was then performed treating perceived quality across brands as a continuous independent variable while the three manipulated variables were captured using dummy coding (Pedhazur & Schmelkin 1991, p. 515). Interpretation of main effects and the three-way interaction between perceived quality across brands, similarity and price was unchanged from that of the prior ANOVA.

To follow up on this interaction, and as shown in Table 2, three-factor ANOVAs were run on both quality variance groups. Support for the prediction that price information has a larger positive impact on dissimilar extensions than similar extensions (H1) was revealed for the higher quality variance group. Within this group, results show the expected significant similarity by price interaction ($F_{1,153}=5.06, p<.05$). However, there was no significant interaction in the low quality variance group. This result, where price effects were observed for those who perceived more quality variance across brands, is consistent with existing theory. It has been argued that price effects are more likely to the degree that brands within a product category are perceived as heterogeneous in terms of quality (cf. Jun et al. 1999, Olson 1977, Monroe & Krishnan 1985). For the high quality variance group, in addition to the interaction, the previously mentioned main effects also remained. Additionally, an important finding was that the interaction effect remained when subjects’ general familiarity with frozen pizza and familiarity with the core brand name of the extension evaluated were accounted for as covariates. Follow-up contrasts revealed, for subjects who perceived higher quality variance across brands of frozen pizza, that price
significantly influenced evaluations of the dissimilar extensions ($X_{DIS-LP}=4.75$ vs. $X_{DIS-HP}=5.44$, $F_{1,78}=4.18$, $p<.05$, partial eta-squared=.05), but did not influence quality evaluations of the similar extensions ($X_{SIM-LP}=5.69$ vs. $X_{SIM-HP}=5.73$, $F_{1,79}=.01$, partial eta-squared=.00). This similarity by price interaction is plotted in Figure 1.

### TABLE 2

ANALYSIS OF VARIANCE RESULTS FOR PERCEIVED QUALITY EVALUATION: F-STATISTICS

<table>
<thead>
<tr>
<th>Effects</th>
<th>Higher Quality Variance</th>
<th>Lower Quality Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similarity (S)</td>
<td>10.04 $^a$</td>
<td>12.12 $^a$</td>
</tr>
<tr>
<td>Price (P)</td>
<td>5.29 $^b$</td>
<td>.94</td>
</tr>
<tr>
<td>Brand (B)</td>
<td>36.16 $^a$</td>
<td>10.01 $^a$</td>
</tr>
<tr>
<td>S*P</td>
<td>5.06 $^b$</td>
<td>1.45</td>
</tr>
<tr>
<td>S*B</td>
<td>1.01</td>
<td>.04</td>
</tr>
<tr>
<td>P*B</td>
<td>.42</td>
<td>2.87</td>
</tr>
<tr>
<td>S<em>P</em>B</td>
<td>.04</td>
<td>.06</td>
</tr>
</tbody>
</table>

Higher quality variance degrees of freedom: $F_{1,153}$
Lower quality variance degrees of freedom: $F_{1,110}$

$^a$ $p<.01$

$^b$ $p<.05$

### FIGURE 1

SIMILARITY AND PRICE INTERACTION
Thought Results. Thought protocols in response to a question asking subjects to explain their evaluations of the new brand extension were analyzed to provide insight about the process originally proposed by Taylor and Bearden (2002). The protocols were first coded to consider whether price was mentioned (i.e., coded 1 if price was mentioned and 0 otherwise), and then coded for the number of times it was mentioned. Also coded was whether the price information appeared to be used to make a price – quality inference. Example responses indicating that a price – quality inference had been made included: “Price is high. Therefore, it must be fairly high quality,” “Since the price is low, the quality can't be high,” and “The price is much lower than the frozen pizzas I consider to be high quality — so I think the quality will be bad.” Thoughts were coded by two independent coders who were blind to the experimental condition. The reliability between coders was high (I= .93) as assessed using Perreault and Leigh's (1989) reliability index for qualitative data. Further, the overall percentage agreement between coders was 90 percent. Differences in judgments between coders were resolved by discussion.

These data were used to compare the incidence of price-related thoughts between the similar and dissimilar extensions within each perceived quality variance group. Consistent with the prior results, there are significant effects on the thought protocol variables only for those who perceived larger quality variance across brands of frozen pizza. For these subjects, the mean number of price-related thoughts for subjects exposed to the dissimilar extension was .73, compared to .44 for subjects exposed to the similar extension (t159=2.65, p<.01), supporting H2. More interesting are the differences in the subjects’ thoughts concerning the use of the price information. Again, for those who perceived higher quality variance, the mean number of thoughts reflecting price as a cue to quality (e.g., high quality inference based on high price and low quality inference based on low price) for the dissimilar extension was .40 versus .21 for the similar extension (t159=2.33, p<.05), supporting H3. Also, the proportion of subjects who mentioned price as a cue to quality for the dissimilar extension was 33.8 percent, compared to 21 percent for the similar extension (z=1.56, p=.059, one-tail). Moreover, and consistent with results previously discussed, these process results did not hold for those who perceived lower quality variance across brands. These findings then provide support for the hypothesis that price
DISCUSSION

The present investigation contributes by replicating and extending prior brand extension research. The importance of such replications has been emphasized by the creation of a new re-inquiries section in the *Journal of Consumer Research* (Hunter 2001, Wilk 2001, Wells 2001) as well as a special issue focusing on replication research appearing in the *Journal of Business Research* (Easley & Madden 2002). The results of the research reported here show that when the extension was perceived to be dissimilar to the core brand, price had a significant positive effect on extension evaluations. Yet, when the extension was perceived to be similar to the core brand, this same price information failed to produce a significant increase in extension evaluations. This research also considered thought protocols. Results pertaining to these protocols indicate that more price-related thoughts and price-quality inferences occurred in the processing of the dissimilar than similar extension. The findings of this research then imply that manufacturers attempting to leverage brand equity by introducing extensions somewhat dissimilar from the original brand should consider that consumers may be more likely to make price-quality inferences regarding dissimilar extensions. This suggests that a manufacturer introducing a dissimilar extension should use caution if a low price positioning strategy is employed as consumers might infer that the new extension represents a lower or moderate quality offering, when that offering may actually be of high quality.

The results of this research are consistent with findings from the price-perceived quality literature which show that the impact of price information on perceived quality decreases to the degree that other diagnostic information pertaining to quality is available (cf. Olson 1977, Dodds et al. 1991). Consequently, the findings presented here generalize the price-quality effect described in that literature to a potential real-world setting. Specifically, the research presented here shows that when consumers have less information about new product quality, such as the situation presented in the evaluation of a new dissimilar extension, price information may have a larger impact on quality evaluations. But, when the information...
environment is richer, such as the situation presented in evaluating a new similar extension, the impact of price on quality evaluations is attenuated. This research also generalizes Taylor and Bearden’s (2002) original findings from a consumer semi-durable category (i.e., clock radios) to a lower priced, more frequently purchased, grocery product category (i.e., frozen pizza). This generalization is significant given that the nature of these categories differs considerably, and that annually, a large percentage of new grocery products represent some form of brand leverage strategy (cf. Keller 1998).

However, and unlike Taylor and Bearden’s (2002) results, the effects on perceived quality evaluations and the thought protocols were supported only for those subjects who perceived higher quality variance across brands within the extension product category. Although this qualification remains, these empirical results are consistent with past conceptual theorizing (Monroe & Krishnan 1985, Olson 1977), as well as evidence showing larger effects when physical quality differences exist in a dynamic technology-oriented product category (Jun et al. 1999). The implication of this finding is that the perceptual effects of price on quality evaluations may be more significant in a product category perceived as relatively heterogeneous with respect to quality. Therefore, this research highlights a potentially important variable, perceived quality variance across brands, which has not been widely considered by empirical research. Results of this research suggest that effects of other extrinsic quality cues, outside of a brand extension context, might also be positively related to the degree to which consumers perceive quality variance among currently available products. Future research, especially in a consumer product context where mature brands are often perceived as relatively homogeneous, might consider quality differences in more depth, possibly with an experimental manipulation.

Finally, although the purpose of this research was to generalize theory regarding consumer processing of price information in the context of new brand extension evaluation, the caveats associated with experiments and the use of student subjects are appropriate. However, given emphasis on internal validity, the student subjects used in this study were appropriate for investigating the relationships between the hypothesized variables (cf. Mook 1983). Nonetheless, future research is clearly needed to extend these findings to an actual
marketplace situation with non-student subjects. One suggestion for such an extension is a correlational study examining non-fictitious brand extensions that are currently or have been available in the marketplace (cf. Reddy, Holak & Bhat 1994). Respondents in such a study could be both key informants (i.e., brand managers) and consumers. Brand managers could be asked about the extension's performance, the degree of similarity between the extension and the core brand, and the initial introductory pricing strategy. Although there would likely be difficulties in comparing extension performance across companies, brands, and categories, an objective measure of brand extension performance, such as market share (cf. Reddy, et al. 1994), might also be obtained to supplement or corroborate the key informant data on the performance of the extension. Moreover, consumer respondents could provide their perceptions of the degree of similarity between the extension and core, their attitude toward the core and extension brand, and thoughts about the introductory price of the extension for brand extensions examined. Such a correlational study, in which individual brand extensions represent observations, would provide an important contribution as results would come directly from the marketplace.
References


