CONSUMER EVALUATION OF BRAND EXTENSIONS: AN ASSESSMENT FROM BANGLADESH

Dr. Md. Humayun Kabir Chowdhury

Associate Professor, School of Business

North South University, Bangladesh

Dr. Nazrul Islam

Associate Professor, School of Business

North South University, Bangladesh

Md. Muzakkerul Huda

School of Business

Asian University of Bangladesh, Bangladesh

<u>Correspondence Address</u>

Dr Nazrul Islam

Flat#2A, House# 23, Road# 16

Sector#4, Uttara, Dhaka 1230

Bangladesh

CONSUMER EVALUATION OF BRAND EXTENSIONS: AN ASSESSMENT FROM BANGLADESH

ABSTRACT

This paper tests Aaker and Keller's (1990) brand extension model that has been designed and tested in a series of developed economies to see if it applies to Bangladesh, a developing country. A questionnaire was developed using similar rating scales to those used b Aaker and Keller. The dependent variable, the overall attitude toward the extension, was an average of two dimensions: the overall perceived quality of the extension and the purchase probability of buying the extension. 'Residual Centering' regression approach was used for analyzing the data. Results suggest that there is some international heterogeneity in the way that consumers evaluate brand extension. Major findings of this study, limitations, and directions for future research have been suggested.

Keywords: Quality, Transfer, Fit, Residual Centering Regression Approach

INTRODUCTION

The use of well-known brand names for new product introductions – i.e., brand extensions – is a very popular branding strategy. In an attempt to improve the likelihood of new product success, an increasing number of companies are leveraging that asset by introducing new products as a brand extension, i.e., by using a well-known brand name for the new product. Capitalizing on the equity in established brand names has become the guiding strategy of product planners (Chowdhury 2001; Touber 1988). In several product categories more than 80% of new product introductions are brand extensions (Chowdhury 2002; 2007; keller 2003).

When the new extension is launched, consumers evaluate it on the basis of their attitude toward the parent brand and the extension category. If a consumer does not know the parent brand and

its products at all, s/he will evaluate the new extension solely on the basis of her experience with the extension category (Sheinin 1998). Conversely, if the extension product category is new to him/her, an attitude toward the extension will be formed only on the basis of his/her attitude toward the parent brand. If the consumer knows both the parent brand and the extension category, a third effect arises: the perception of fit between the parent brand and the extension category. Research has shown that the perception of fit influences extension attitude in two ways. First, it can mediate the transfer of attitude components from the parent brand and extension category to the new extension. Second, fit can moderate the relative influence of brand and category attitude on extension attitude. Brand extension attitude formation leads to concrete consumer behavior in the marketplace in terms of intentions, choice and repeat purchase. These experientially based changes in extension attitude give rise to reciprocal effects at different levels. Attitude toward the new extension may affect parent brand attitude in terms of knowledge structure and affect. In a similar vein, attitude to the new extension may influence extension category attitude in terms of knowledge and affect. Both of these reciprocal effects may be moderated by perceived fit.

While there have been several successful extensions such as Nike's sports clothing or Mars ice cream bars, there have been several notable marketplace failure such as Campbell's tomato sauce or Harley Davidson wine coolers (Aaker 1990). This shows that, though the introduction of brand extensions has become prevalent, such a practice does not necessarily guaranty success (Reddy, Holak and Bhat 1994). Accordingly, understanding the success factors of brand extensions is of considerable importance. Much recent research has followed Aaker and Keller's (1990) seminal work that developed and tested a theoretical model of brand extensions.

Barwise (1995) contends that a good empirical generalization should be characterized by its scope, precision, parsimony, usefulness and link with theory. Althouh replications and extensions promote confidence in the reliability of empirical research and guard against the perpetuation of erroneous results, unfortunately they are rarely published (Hubbard and Armstrong 1994). Moreover, replications are seen as decisive for empirical generalization (Leone and Schulrz 1980; Barwise 1995) and ultimately knowledge development. Mittelsraedt and Zorn (1984, p. 14) contend that research, "which isn't worth replicating isn't worth knowing". Presumably, according to this criterion, all published academic research having successfully passed the peer review process is worthy of replication. This study examines whether Aaker and Keller's model applies as well in a developing economy, where brands are little understood, as it does in the developed economies where the model was developed and tested.

BACKGROUND

Aaker and Keller's (1990) seminal study was the first seminal research on consumer behavior towards brand extension. Aaker and Keller theorized that the consumer acceptance of the brand extension is more likely to be positive if the following conditions exist:

Quality: Zeithaml (1988) defines perceived quality as a global assessment of a consumer's judgment about the superiority or excellence of a product. She concludes, after reviewing a set of articles, that perceived quality is at a higher level of abstraction than a specific attribute of a product. The impact of perceived quality on the attitude toward the extension should be unambiguously positive. If the brand is associated with high quality, the extension should benefit; if it is associated with inferior quality, the extension should be harmed.

Difficult: Difficult is the perceived complicacy in designing or making the extension product. The consumers may view the combination of a quality brand and a trivial product class as inconsistent or even exploitative (Aaker and Keller 1990). When consumers perceive the extended product class to be very easy to make, a potential incongruity occurs. The incongruity itself may trigger a rejection or it might lead to a judgment that the quality name will add a price higher than is justified and necessary for such a product.

Fit: Research on brand extension provided empirical support for the notion that greater perceived similarity between the current and new products leads to a greater transfer of positive or negative affect to the new product. The fit between original and extension product classes has a direct positive association with the attitude toward the extension (Tauber 1988). If there is a good perceived fit between the original product class and the proposed product extension, it will lead to a greater transfer of positive or negative affect to the new product. Fit has three components:

Transfer (T) reflects the perceived ability of any firm operating in the first product class to make a product in the second product class. If consumers feel that the people, facilities and skills a firm uses to make the original product is helpful, the favorable attitude or associations about the original product may transfer to the extension.

Complement (C) reflects the extent to which consumers view two product classes as complementary. Products are considered complementary if they are consumed jointly to satisfy some particular need.

Substitute (S) reflects the consumers' view of two product classes as alternatives to be used to perform the same function. Substitute products tend to have a common application and use context such that one product can replace the other in usage and satisfy the same needs.

Despite the wide acceptance and diffusion of Aaker and Keller's (1990) findings, almost all the replications gave varying results and thus questioning the empirical generalizability of Aaker and Keller's original findings. Aaker and Keller's (1990) exploratory study utilized qualitative, correlational and experimental research methods using data from consumer (student) evaluations of brand extensions. The correlational aspect of the study has been replicated by Sunde and Brodie (1993) in New Zealand, Nijssen & Hartman (1994) in Netharlands and Bottomley & Doyle (1996) in UK.

The initial replication by Sunde & Brodie yielded different results to the original Aaker and Keller study. Further replications by Nijssen & Hartman and Bottomley & Doyle have also yielded different results. A summary of their results is provided in Table 1.

Table 1: Summary of Results found in Different Studies

Authors	Hypotheses	Results
Aaker & Keller (1990)	Hypothesis 1	Fails to support
	Hypothesis 2	Supports
	Hypothesis 3	Supports
	Hypothesis 4	Supports
Sunde & Brodie (1993)	Hypothesis 1	Supports
	Hypothesis 2	Fails to support
	Hypothesis 3	Supports
	Hypothesis 4	Fails to support

Nijssen & Hartman (1996)	Hypothesis 1	Supports
	Hypothesis 2	Supports
	Hypothesis 3	Supports
	Hypothesis 4	Fails to support
Bottomley & Doyle(1996)	Hypothesis 1	Supports
	Hypothesis 2	Weak support
	Hypothesis 3	Supports
	Hypothesis 4	Fails to support

The inconsistency in results may be influenced by the presence of high degree of multicllinearity between the main effects and interaction terms. Bottomley & Doyle corrected for multicllinearity using the Lance (1988) 'residual centering' method in analyzing their data. They also restated a variant of the Sunde and Brodie data, finding different results after adjusting for multicllinearity. Bottomley and Doyle's analysis yielded similar regression results from both data sets, but failed to substantiate the findings of the earlier studies. They found that consumers' attitudes towards brand extensions were driven primarily by the main effects and moderated via the interaction terms. Bottomley & Doyle also explored the potential to generalize the results to other product classes by analyzing at an individual brand extension level. They concluded that the four hypotheses can be generalized across the majority of brand extensions and rejected Aaker and Keller's proposition that differences in stimuli (both parent brands and extensions effects) and cross cultural effects may have contributed to the differences in findings.

Therefore, the purpose of this study is to test the brand extension model that has been designed and tested in a series of developed economies to see if it applies to Bangladesh, a developing economy.

THE MODEL AND HYPOTHESES

An algebraic representation of Aaker and Keller's model that is tested in this study is:

$$AtE = \varsigma_1 \cdot Q + \varsigma_2 \cdot D + \varsigma_3 \cdot T + \varsigma_4 \cdot C + \varsigma_5 \cdot S + \varsigma_6 \cdot Q * T + \varsigma_7 \cdot Q * C + \varsigma_8 \cdot Q * S \quad \text{---- (1)}$$

The following hypotheses were developed based upon the above model:

$H_1 = $ A higher quality perception toward the parent brand is associated with more favorable attitude toward the extension.

$H_2 = $ The transfer of a brand's perceived quality is enhanced when the two product classes in some way fit together.

$H_3 = $ The fit between the two product classes has a direct positive association with the attitude toward the extension.

$H_4 = $ The relationship between the difficulty of making the product class of the extension, and the attitude toward the extension is positive.

METHODOLOGICAL ISSUES

Three Bangladeshi brands were chosen, were of high quality, had strong brand images, and had not been widely extended before. Because of differences in brand availability, the brands chosen for this study differed from those used in Aaker and Keller's study. The brands chosen were: Tibet powder, Seiko watch, and Pran juice. The extension products selected were: wrist watch for Tibet powder, bicycle for Seiko watch, and ball-point pen for Pran juice.

A questionnaire was developed using similar rating scales to those used by Aaker and Keller (1990). Seven-point Likert scales were used to gather consumer responses (see Table 2). The dependent variable, the overall attitude toward the extension, was an average of two dimensions: the overall perceived quality of the extension (1 = inferior, 7 = superior) and the

purchase probability of buying the extension (1 = extremely unlikely, 7 = extremely likely). The independent variables were measured as quality (1 = inferior, 7 = superior) difficult (1 = extremely easy, 7 = extremely difficult). To measure the fit, subjects were asked to assess the extent to which the products were substitutes in certain usage situations or complements in that they would be likely to be used together (1 = extremely low, 7 = extremely high). To assess transfer, respondents were asked if the people, facilities, and skills used in developing, refining, and making the original product would be helpful if the manufacturer were to make the extension product (1 = extremely unhelpful, 7 = extremely helpful).

Following Aaker & Keller the questionnaire was administered to a convenience sample of students. More specifically, the data collected from a total of 180 undergraduate students from a national university located in the northern part of Bangladesh. Subjects varied in age between 18 and 20 years old, 78% were male, and 22% were female.

Table 2: Description of Variables and Measures

Variable Name	Variable Description	Scale

Dependent:

Ext. Quality	The perceived overall quality of the brand extension	1 = inferior, 7 = Superior
Try	The likelihood of trying the product	1 = Extremely unlikely, 2 = Extremely likely

Independents:

Quality	The perceived overall quality of the parent brand	1 = inferior, 7 = Superior
Transfer	The usefulness of the manufacturing skills and resources in the original product for developing, refining and making the new product	1 = Extremely unhelpful, 2 = Extremely helpful
Complement	The complementarity of the original and extension products in use	1 = Extremely unlikely, 2 = Extremely likely
Substitute	The substitutability of the original and extension products in use	1 = Extremely unlikely, 2 = Extremely likely
Difficult	The difficulty in manufacturing and designing the extension product	1 = Extremely easy, 2 = Extremely difficult

DATA ANALYSIS

We estimated regression models at both the aggregate level and also at the individual brand

extension level. Bottomley and Doyle (1996) reported the presence of high degrees of

multicollinearity between the main effects and the interaction terms, which made the

interpretation of results difficult. In our study also we find very high correlation of above 0.90

between TRANSFER, COMPLEMENT, and SUBSTITUTE and their corresponding

interactions with QUALITY respectively. We find Variance Inflation Factors (VIFs) as high as

43.7. VIF indicates the extent to which each independent variable is explained by the other

independent variables and large VIF values, i.e., more than 10.0 indicate a high degree of

multicollinearity among the independent variables.

Therefore, following the Nijssen and Hartman (1994) Dutch replication of Aaker & Keller's

brand extension propositions which addressed similar methodological concerns, the Lance (1988) 'residual centering' regression approach was used. The benefits of this approach over conventional OLS regression analysis in the presence of high degrees of multicollinearity between the main and interaction terms are fourfold: (1) it substantially reduces the multicollinearity between the exogenous variables, (2) reduces the standard errors, (3) separates main and interaction effects and (4) enables the relative importance of the main and interaction variables to be identified (Lance 1988). As in the original Aaker and Keller's study full effects (1) and a main effects model (2), the model was first estimated using OLS regression:

$$AtE = \mathsf{S}_1 \cdot Q + \mathsf{S}_2 \cdot D + \mathsf{S}_3 \cdot T + \mathsf{S}_4 \cdot C + \mathsf{S}_5 \cdot S \quad \text{-- (2)}$$

The residual centering approach is essentially a two-stage regression procedure. In stage 1, the interaction term is regressed on the individual variables from which it is composed using OLS to estimate the regression coefficients a, q and t in (3), for example,

$$Q \cdot T = a + q \cdot Q + t \cdot T \quad \text{--(3)}$$

Values of Q and T are then substituted in the estimated equation (3) to provide QT_p, predicted values of $Q \cdot T$. Next, subtracting the predicted value, QT_p, from the observed value, $Q \cdot T$, gives a residual QT_r that captures the variance associated with the interaction term that is not explained by the two component variables Q and T.

In stage 2, the residual term QT_r is substituted for the original interaction term into the full effects model (1) to give an equation that is estimated using OLS:

$$AtE = \mathsf{S}_1 \cdot Q + \mathsf{S}_2 \cdot D + \mathsf{S}_3 \cdot T + \mathsf{S}_4 \cdot C + \mathsf{S}_5 \cdot S + \mathsf{S}_6 \cdot QT_r + \mathsf{S}_7 \cdot QC_r + \mathsf{S}_8 \cdot QS_r \quad \text{------- (4)}$$

RESULTS

After using residual centering method multicollinearity has almost disappeared, VIF values in all cases are lower than 1.3. Following the discussion of each of the hypothesis and their corresponding results (see Table 3):

Table 3: The Beta Coefficients

Variables	Beta Coefficients	t-values (p-values)
Q = (Quality)	ß = 0.45	12.3 (0.001)
T = (Transfer)	ß = 0.15	6.20 (0.05)
C = (Complement)	ß = 0.19	11.70 (0.001)
S = (Substitute)	ß = 0.11	5.40 (0.05)
D = (Difficult)	ß = 0.01	0.12 (0.10)
Quality X Transfer	ß = 0.06	0.22 (0.10)
Quality X Complement	ß = 0.17	8.60 (0.01)
Quality X Substitute	ß = -0.04	1.01 (0.10)

Hypothesis 1: A higher quality perception toward the parent brand is associated with more favorable attitude toward the extension. Results support this hypothesis. The coefficient for quality being positive and statistically significant found in this study. Quality of original brand has strong positive effect on consumer's attitude towards the brand extension. Evidence in the literature is presently conflicting. Except in Aaker & Keller's study in all replications hypothesis 1 was supported.

Hypothesis 2: The transfer of a brand's perceived quality is enhanced when the two product classes in some way fit together. Results partially support for hypothesis 2. Of the three interaction terms, only quality X complement is significant. Therefore, the data from Bangladesh support hypothesis 2 but only on the basis of a single interaction term. We also found interaction of quality X substitute is negative regardless of its significance level. The possible explanation for negative beta coefficient is that consumers find brand extensions launched in substitute product categories confusing.

Hypothesis 3: The fit between the two product classes has a direct positive association with the attitude toward the extension. Results support hypothesis 3. More specifically, we found strong support for positive effect of all three fit variables on extension evaluation. Beta coefficient of complement was higher than transfer and substitute, showing its more important effect on extension evaluation than transfer and substitute.

Hypothesis 4: The relationship between the difficulty of making the product class of the extension, and the attitude toward the extension is positive. Results support hypothesis 4. The results found difficult to be significant. While most of the previous studies found non-significant results, hypothesis 4 is supported for Bangladesh. The possible reason might be that customers may feel an extremely easy-to-make extension incongruous and even exploitative.

DISCUSSION

Since all the replications of Aaker & Keller's (1990) study were conducted in the developed countries, our Bangladeshi replication allows us to examine the generalizability and robustness of the original study in developing economies context. Results of this study suggest that there is

some international heterogeneity in the way that consumers evaluate brand extensions. This means that brand extensions will not always work in the same way from country to country. In Bangladesh the fit variables, transfer and complement, are very important in determining the success of a brand extension. Any decision to extend a brand should be proceeded by evaluating consumer's perception of the fit between the two product categories involved. The results of this study with regard to the difficulty of making the extension are different from Aaker & Keller's findings. It might be that the economic condition of the developing economy made this difference. In the developing countries, new offerings are more likely to elicit negative associations when evaluating extensions that are too easy to make.

In conclusion, findings of this study suggest that brand owners of the developing nations can adopt a similar approach to extending their brands as the developed nations do. However, it should be remembered that the chance of transferring the positive values of a brand to an extension is greatest when consumers see the extension as difficult to make.

There are a number of caveats surrounding these optimistic conclusions derived from the present study which point to areas where further research may prove productive. Firstly, the development of a multiple item scale to measure consumers' attitude towards the extension may prove beneficial because of the low correlation found between the dependent variable measures as well as the three fit variables. Secondly, additional research on the importance of the brand and brand concept consistency is required to clarify their respective roles in determining how consumers form attitude towards brand extensions. Finally, research should be done considering the real consumers instead of students. Longitudinal research to investigate the stability of consumers' attitude toward extension over time is needed.

References

Aaker, D. A. (1990). Brand Extensions: The Good, the Bad, and the Ugly *Sloan Management Review* 31: 47-56

Aaker, D. A. and Keller, K. L. (1990). Consumer Evaluation of Brand Extensions *Journal of Marketing* 54 (January): 27-41

Barwise, P. (1995). Good Empirical Generalizations *Marketing Science* 14: 29-35

Bottomley, P. A. and J. R. Doyle (1996). The Formation of Attitudes towards Brand Extensions: Testing and Generalizing Aaker and Keller's Model *International Journal of Research in Marketing* 13 (4): 365-377

Chowdhury, Md. Humayun Kabir (2001). Feedback Effects of Narrow and Broad Brand Extension in Consumer Brand Evaluations: An Investigation *Journal of Business Administration* Vol. XXVII (1 & 2): 1-26

Chowdhury, Md. Humayun Kabir (2002). An Investigation of Narrow and Broad Brand in Consumer Brand Extension Evaluations *D.U. Journal of Marketing,* Vol. V (June): 43-60

Chowdhury, Md. Humayun Kabir (2007). An Investigation of Consumer Evaluation of Brand Extensions *International Journal of Consumer Studies* 31: 377-384

Hubbard, R. and J. S. Armstrong (1994). Replications and Extensions in Marketing: Rarely Published but Quite Contrary *International Journal of Research in Marketing* 11: 233-248

Keller, K.L. (2003). Strategic Brand Management: Building, Measuring, and Managing Brand Equity 2nd Ed., Upper Saddle River

Lance, C. E. (1988). Residual Centering, Exploratory and Confirmatory Moderator Analysis,

and Decomposition of Effects in Path Models Containing Interactions *Applied Psychological Measurement* 12 (2): 163-175

Leone, R. P. and R. L. Schultz (1980). A Study of Marketing Generalizations *Journal of Marketing* 44: 10-18

Mittelsraedt, R. A. and T. S. Zorn (1984). Econometric Replication: Lessons from the Experimental Sciences *Quarterly Journal of Business and Economics* 23: 9-15

Nijssen, E. J. and D. Hartman (1994). Consumer Evaluation of Brand Extensions: An Integration of Previous Research in J. Bloemer, J. Lemmink and H. Kasper (eds.), *Proceedings of 23ʳᵈ European Marketing Academy Conference* 673-683

Reddy, S. K., S. L. Holak and S. Bhat (1994). To Extend or Not to Extend: Success Determinants of Line Extensions *Journal of Marketing Research* 31 (May): 243-262

Sheinin, D. A. (1998). Positioning Brand Extensions: Implications for Beliefs and Attitudes *Journal of Product and Brand Management* 7 (2): 137-149

Sunde, L. and Brodie, R. J. (1993). Consumer Evaluations of Brand Extensions: Further Empirical Results *International Journal of Research in Marketing* 10 (1): 47-53

Tauber, E. M. (1988). Brand Leverage: Strategy for Growth in a Cost-Control World *Journal of Advertising Research* 28 (August-September): 26-30