Leveraging brand associations in developing line extensions.

Dean C.H. Wilkie, University of Sydney, d.wilkie@unsw.edu.au
Lester W. Johnson, Melbourne Business School, l.johnson@mbs.edu
Lesley White, University of Sydney, lesley.white@sydney.edu.au

Abstract

The objective of this research is to explain the market performance of line extensions as a result of the type of line extension, the order in which it enters the brand’s range, and the way in which consumers may use existing brand associations to evaluate it. Consumer scan data from a range of line extensions across different brands of vitamin health supplements has been modelled to provide an empirical analysis. The results indicate that the performance of a line extension is influenced by its order of entry, by the type of line extension and is more successful when it shares similar attributes with existing products. The implications for managers are that by understanding these results, it will help improve a manager’s evaluation of the market potential of any new product concept, which will lead to cost efficiencies within the new product development process and greater success within the market place.

Keywords: Line extensions, brand associations, consumer learning, order of entry effects.
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Introduction

Many academics and practitioners have highlighted that today’s brands face the challenge of a fragmented market where consumers have greater choice of products that better suit their needs (Kapferer, 2008; Aaker and Joachimsthaler, 2002). In order to ensure that a brand remains relevant to consumers, many managers are using line extensions to meet these changing needs (Bayus and Putsis, 1999).

A line extension provides a point of difference to the existing range of products through offering a minor variation, such as a different format, size, composition or performance (Kapferer, 2008; Reddy et al, 1994). Over 80% of all new products launched fit within this definition of line extensions (Kim and Maubourne, 2005). The majority of new products are line extensions because of the perceived advantages gained through leveraging existing brand associations (Quelch and Kenny, 1994; Reddy et al, 1994). First, leveraging the existing associations will help with consumer learning, storage and retrieval of information used to evaluate purchase alternatives (Romaniuk and Gaillard, 2007). The existing brand name also reduces the perceived risk of the product which increases trial (Keller, 2008). Therefore the success of a line extension relies on the strength of associations it evokes in the consumer mind and the benefits its product attributes offer (Desai and Ratneshwar, 2003).

This paper looks to explain the market performance of line extensions as a result of the type of line extension, the order in which it enters the brand’s range, and the way in which consumers use existing brand associations to evaluate it. This is an important area of research given the percentage of new products that are line extensions, which are launched because of the perceived advantages gained through leveraging existing brand associations, but yet most of the research into these areas has been focused on brand extensions (Nijssen and Augustin, 2005; Wu and Yen, 2007; Wanke et al, 1998; Keller and Aaker, 1992; Kerin et al, 1996). By addressing this need, the paper offers significant contributions to the understanding of the success factors of line extensions.

The paper is structured in the following manner. The next section will discuss the theoretical background and hypothesis development. The third section provides a description of the data and the model used to test the hypotheses. The results are discussed next, and finally implications and suggestions for future research are provided.

Theoretical Background and Hypothesis Development

In order to explain how consumers learn, store and retrieve new information about line extensions, it is important to first understand how the process starts. Researchers have conceptualised that a consumer forms a memory structure that assists in the processing of new information (Van Osselear and Janiszewski, 2001; Keller, 1993). A well established explanation on how this memory structure starts can be found in the research of Carpenter and Nakamoto (1989) and Kardes and Kalyanaram (1992).

These authors provided the foundation for understanding how the first brand to pioneer a category becomes an integral part of how a consumer forms a memory structure. When a consumer trials the first product in a new category, they have no existing knowledge structure which they can use to evaluate the product. Therefore if the product delivers the positive benefits expected, a consumer links this outcome to the key attributes of that brand. These attributes then help to provide the structure for associations to be stored, retrieved and used to
evaluate later entrants (Carpenter & Nakamoto, 1989; Kardes and Kalyanaram, 1992; Muthukrishnan and Kardes, 2001). This relationship between the advantages of being the first product within a category and how it influences a consumer’s knowledge structure, has led to the empirical generalisation that a brand’s market share has a negative relationship with the sequential order in which brands launch (Kalyanaram et al, 1995).

To date the research into the advantages of being the first to market are yet to be established within a brand’s product range. Much of the research has focused on how a consumer uses the first to market brands to evaluate later brand entrants (Kardes et al, 1993; Kerin et al, 1996; Kalyanaram, 2008) with the exception of Reddy et al (1994). Their research examined the influence of the order in which line extensions entered the overall market, as opposed to within a brand’s range. The results found that no significant relationship exists, which may be the result of using the overall market to measure the order of entry relationship. If it can be demonstrated that an order of entry effect exists within a brand’s product range, it provides evidence of a schemata within consumers’ minds in which new information is categorised based on the attributes and associations created by the first product launched and the subsequent entries. Hence, if consumers categorise information based on what is already known of existing products, an order of entry effect will exist with a brand’s product range.

H1: An order of entry effect will exist with a brand’s product range.

Once the first product within the brand’s product range becomes the structure which new information is evaluated against, what becomes of interest is how consumers use this structure to evaluate a new line extension. This paper will review three contrasting concepts of how consumers use their memory structure to evaluate a line extension with a new attribute that is either typical or atypical to existing product associations.

The first concept is Schema Congruity, which reflects the research into how late entering brands can overcome the order of entry advantage of first to market brands. Schema Congruity suggests that the organisation and storage of new information is influenced by the level of congruity between the new information and the schema (i.e., product range) (Meyers-Levy and Tybout, 1989). Products with a high level of congruity in product attributes will have a greater level of acceptance within a consumer’s schema. However a high level of congruity leads to lower levels of information processing as the product conforms to category or brand’s norms and the consumer’s expectations (Meyers-Levy and Tybout, 1989).

For products that are moderately congruent with a consumer schema (i.e., has some of the attributes of the product range schema but also provides an atypical attribute), this novel or attention drawing difference facilitates a greater level of information processing, which then leads to a more favourable evaluation of the product (Meyers-Levy and Tybout, 1989; Desai and Keller, 2002). Carpenter and Nakamoto (1989) provide further support for this concept by showing that a differentiated late entrant was more successful in reducing the advantage of the first brand compared to a brand that offered no point of difference.

H2: Based on consumers using Schema Congruity to evaluate new line extensions, a line extension with an atypical attribute will perform better than a line extension with a typical attribute.

The concept of an Associative Network Memory Model provides an opposing view to Schemata Congruity by arguing that the higher the level of congruence between the new line extension and the existing products, the greater the amount of information processing and transfer of associations (Romaniuk and Gaillard, 2007; Keller, 2008; Teichert and Schontag, 2010). By sharing associations with existing products, it will also help establish the line extension as part of the range by being more in line with consumer expectations (Wanke et al,
1998; Keller, 2008). The less congruent a line extension is with existing products, the less information will be stored and retrieved, and fewer associations will be transferred from the brand. If the line extension was highly incongruent, the consumer may not know how to store the new information, which may lead to the rejection of it (Keller, 1993) or the product may lack credibility (Desai and Ratneshwar, 2003). Therefore if this concept is correct, the more congruent a line extension is with the existing products, the better its market performance.

**H3:** Based on consumers using an Associative Network Memory Model to evaluate a new line extension, a line extension with a typical attribute will perform better than a line extension with an atypical attribute.

Goal-based Congruency differs from the previous two concepts by suggesting that consumers may organise information around a higher level association such as an end goal or abstract benefit. The introduction of any new line extension that has a high level of congruence with this goal will help facilitate the storage of information and the transfer of associations. If a consumer is exposed to a line extension that is not congruent with the goal, then the storage of information and the transfer of associations will be reduced (Martin and Stewart, 2001; Martin et al, 2005). If the concept of Goal-based Congruency is correct, any differences in product attributes should not impact the performance of a line extension if it shares the same goal-based or abstract benefit.

**H4:** Based on consumers using Goal-based Congruency to evaluate a new line extension, there should be no difference in the performance of line extensions with typical or atypical attributes as these products all share the same goal.

### Data and Empirical Model

The data used in this study consist of 208 weeks of consumer scanned sales from 10 categories of vitamin health supplements within the Australian market. Each category is defined by the specific health condition for which the products are indicated for treating. In total the data set contains 20 product ranges with 66 line extensions. This makes the data ideally suited for testing these hypothesis as each of the line extensions has a commonality in its benefits but varying associations created through typical and atypical product attributes within each range. The variables used within the data set are the scanned retail price, distribution, advertising, the order in which each of the line extensions entered and a dummy variable used to capture the effects of brand specific associations such as a consumer’s brand attitude (Keller, 2008; Grimm 2005; Wu and Yen, 2007).

The analysis follows the earlier work by Kalyanaram and Wittink (1994) by using a multiplicative model to determine the impact of the order of entry on the line extensions. This allows for comparisons to be made across the product ranges as it eliminates any differences in marketing variables. The order of entry variable within the model represents a measurement of the market share penalty each of the new products incurs as a direct result of the order of entry. This model differs from Kalyanaram and Wittink (1994) in that it allows for heterogeneity in the order of entry variable based on the different types of line extensions.

The classification of the type of line extension follows the definition given by Reddy et al (1994) which classifies a line extension as “differing from their parent brand in relatively minor ways, such as flavors, sizes, and compositions”. From this, each line extensions is classified as either a new active ingredient, format, pack size, or as an improved product. A new active ingredient or format is considered to offer an atypical attribute as no other product within the range contains this attribute. A new pack size or improved product is considered to offer a typical attribute as it is a modification of an existing attribute.
The size of the order of entry parameter value is compared across the types of line extensions to determine if there is a significant difference between the types. If a type of line extension has a lower order of entry value, this indicates that its attribute has been more successful in being added to the consumer's memory structure and retrieved within the purchase situation, as it has a lower market share penalty. The formal equation is:

\[ Share_{ijt} = (Entry_{ij}^{ad}) \cdot RPrice_{ij} \cdot Dist_{ij} \cdot Adv_{ij} \cdot Brand_{j} \cdot e^{ijt} \]

Where:
- \( I_j \) is the number of products in category \( j \)
- \( T_j \) is the number of time periods in category \( j \)
- \( J \) is the number of product ranges
- \( D \) is the number of different types of line extensions within product range \( j \)
- \( Share_{ijt} \) is the ratio of the \( i \)th line extension's market share in product range \( j \) to the first product's share in that range in period \( t \);
- \( Entry_{ij} \) is the order of entry for line extension \( i \) in category \( j \), \( i=2,...,I_j \);
- \( RPrice_{ijt} \) is the ratio of the \( i \)th line extension's retail price in product range \( j \) to the first product’s price in that range in period \( t \);
- \( Dist_{ijt} \) is the ratio of the \( i \)th line extension’s distribution in product range \( j \) to the first product’s distribution in that range in period \( t \);
- \( Adv_{ij} \) is the amount of advertising (in $000s) for the \( i \)th product in range \( j \);
- \( Brand_{i} \) is a dummy variable used to capture the effects of brand specific associations such as brand attitude and benefits for line extension \( i \);
- \( e^{ijt} \) is the error term for the model.

**Results and Discussion**

Table 1 gives the parameter values for the specified model. All variables are significant at the 10% level with the exception of advertising (\( p=0.55 \)). A random effects model was used and tested with the Hausman test (\( p=0.32 \)) and was found to be consistent and efficient (Hausman and Taylor, 1981). In addition the model used a robust estimator of the variance estimates to control for heteroskedasticity (Baum, 2006). The \( R^2 \) value is 0.79 which indicates that the model provides a strong statistical fit.

**Table 1: Empirical Results**

<table>
<thead>
<tr>
<th>Order of entry values</th>
<th>Marketing Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Active</td>
<td>New Format</td>
</tr>
<tr>
<td>Value</td>
<td>-0.75</td>
</tr>
<tr>
<td>T- stat</td>
<td>-7.93</td>
</tr>
</tbody>
</table>

H1 predicts that an order of entry effect will exist within a brand's product range. The results confirm that an order of entry effect exists within the product range as each type of line extension has a negative order of entry parameter that is significant (in each case \( p<0.01 \)). This indicates that the first product in a brand’s product range becomes a benchmark that later entering line extensions will be compared to.

H2, H3, and H4 provided three competing explanations on how a new attribute can impact the success of a line extension. The resolution can be found by comparing the size of the order of entry advantage across the types of line extensions. First, the results indicate two distinct segments of line extensions based on typical and atypical attributes. Second, the differences
between the segments are significant (p<0.01). Lastly, the results show that line extensions with typical attributes were able to achieve greater market share success. This supports H3, which is that consumers use an Associative Network Memory Model to evaluate new information and that the higher the level of similarity between the new product and the brand’s existing products, the greater the amount of associations will be transferred. To illustrate the difference, if the first line extension within a range has a typical attribute, it will on average achieve over 13% more share than if it had an atypical attribute.

**Implications and Future Research**

The purpose of this paper was to provide an explanation for differences in the market performance of line extensions as a result of the type of line extension, the order in which it enters the range, and the way in which consumers use existing associations to evaluate new products. The results of the research provide several contributions to the understanding of line extensions. It is the first paper to identify that the type of line extension and its order of entry within a brand’s product range significantly impacts the market performance of a line extension. It also provides further research into how consumers may organise information about new products and the importance of existing product attributes in influencing consumer preferences for new products (Grimm, 2005; Van Osselaer and Janiszewski, 2001). The research also provides several practical implications for managers.

First, the existence of an order of entry effect with a brand’s product range provides the insight that market share of a line extension decreases with its order of entry. Understanding this will help managers to make more realistic evaluations of a line extension’s potential and in doing so become more efficient in assessing new product opportunities. Second, in order to increase the success of a new line extension, managers should look to develop products that leverage existing associations. However if the line extension offers a benefit which is atypical but has significant potential, a manager may consider investing marketing resources into educating consumers, which may facilitate the creation of new associations that will help establish the product (Lane, 2000). The results of this study challenge this strategy as advertising was not a significant factor. This may have been caused by products with typical attributes having a positive effect on the sales of existing products, and/or products with an atypical attribute being ineffective due to differences to existing associations. This highlights a need for future research into understanding the effectiveness of advertising line extensions.

Another major area of future research that will assist in the understanding of the performance of line extensions is in the effects of cannibalisation between the types of line extensions. While line extensions with typical attributes performed better, the higher success may have come from trading existing consumers up into a better product. This may strengthen the associations current users have but it may not assist in switching consumers from other brands. A line extension with an atypical attribute may bring more new users to the brand, help enhance the amount of brand’s associations, and ultimately help build brand equity.

**References**


