Spill-over: The Effects of Product Recall on Private Labels versus National Brands

Con Korkofingas, Macquarie University, con.korkofingas@mq.edu.au

Lawrence Ang, Macquarie University, lawrence.ang@mq.edu.au

Abstract

This paper examines the impact of a product recall crisis on brand equity and brand choices by using a designed three stage experiment. In particular, it examines the spill-over impact of a product recall crisis for a given brand on other brands in the same product category and for the same brand in other product categories. The other categories examined included a closely related category and a less related category. Additionally, we examine whether the impact of a given product recall crisis depends on the strength of the brand, the seriousness of the problem or company response. The findings suggest that there are no spill-over effects to other brands within the product category but there are spill-over brand equity effects for the affected brand in other product categories. The results are ambiguous on whether brand strength influences the impact of the product recall. The spill-over brand equity effect is greater for the related category than the less related category. The spill-over impacts are also related to the level of company response to the product crisis. Managerially, it suggests the impact of a product recall crisis may need to be assessed over all product categories and response to a product recall incident carefully considered.

Key words: product recall, brand equity, choice, spill-over

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Introduction

Private labels (or house brands) are now a permanent feature in supermarkets. Worldwide, it is expected that by 2010, the sale of private labels sales in supermarkets will reach 22% (Fortune, 2006). In Germany private label sales contribute 34% of all supermarket sales (Kumar and Steenkamp, 2007) while in Australia, the figure is closer to 25% (Nielsen, 2009). Coles, has openly declared their intention to increase their turnover of their private label sales to 30% (Lloyd, 2005). The recent global financial crisis (GFC) has also given private label brands a boost. In Australia 57% of consumers say that they will switch to cheaper grocery brands due to the perceived changed circumstances (Nielsen, 2009),

Research into private labels tends to fall into 2 different broad areas. The first category of research investigates under what circumstances consumers (from different countries) tend to buy private versus national brands and its effects on store loyalty (Richardson et al, 1996; Batra and Sinha, 2000; Erdem et al, 2004; Mieres et al, 2006; Ailawadi et al, 2008). The second broad area investigates what manufacturers can do to combat the rise of private labels (or vice versa) (Kumar and Steenkamp, 2007; Lincoln and Thomassen, 2008). However what is missing in the current research is investigation of any potential spill-over effects that can occur between private labels and national brands should either product be recalled. Imagine your favourite brand of cheese spread has just been recalled due to contamination. Do you now view all brands of cheese spread with suspicion? Does the impact of product recall differ if the brands were private label or national? Does a product recall in one category impact on the same brand in other categories? No previous research to our knowledge has examined this important aspect of product recall.

Hypotheses Development

In the context of product recall, spill-over effect can be defined as the consequence the affected brand has over other brands including those outside the category. There has been surprisingly little research into this, yet spill-over effects are important for both retailers and manufacturers for two important reasons. Firstly, both retailers and manufacturers manage thousands of brands and every time a brand is adversely affected there is a potential danger that other brands (even those from other related categories) can also be affected. Secondly, retailers and manufacturers that practise a 'branded-house' strategy (Keller, 2007) may be particularly vulnerable to spill-over effects. A 'branded-house' strategy means an organisation uses its corporate name as a brand for some or all of its products (e.g., Kraft, Woolworths' Home Brand). One advantage with this strategy is that the cost of advertising can be amortised across many product categories since there is no need to advertise separate brands. However, the danger is should one product under the same brand be adversely affected, spill-over effects may be observed on other products sharing a common brand name.

One interesting study (Janakiraman et al, 2006) found that when consumers were given an unexpected price increase in one product category (e.g., airline fees), they tend to suppress their purchase intentions of products in another category (e.g., guide books, shuttle rides). Conversely, when there is an unexpected price drop in one product category, it led to a rise in purchase intentions of products in another category.

In another illuminating study, Dahlen and Lange (2006) found that that when a product (e.g.,

online bank A) is in crisis, the whole category itself (i.e., banking) is also negatively affected because of associative activations in our memory. The whole category now is perceived to be more risky and less positive. This in turn has a negative spill-over effect on similar brands (e.g., online bank B) because of assimilation. That is a product similar to the affected product is now perceived more negatively. However, what is more interesting is that a dissimilar product (e.g., traditional bank) is now perceived more *positively* because of contrast effects. Over two studies, they found the same effects for banks and contact lenses.

Although these two studies examined spill-over effects, there are similarities and differences. Both studies found asymmetrical effects, albeit different in nature. Janakiraman's et al (2006) found that negative surprises have a greater negative spill-over effect than the corresponding impact of positive surprises. Dahlen and Lange (2006) found that similarity leads to negative spill-over while dissimilarity leads to positive spill-over. However there are also differences. The spill-over effects of Janakiraman's et al (2006) is found across product categories (i.e., how changes in airline pricing affect purchase intentions of guide book), while that of Dahlen and Lange (2007) is found within the same product category (i.e., banking or contact lenses). Furthermore, it is not entirely clear what similarity or dissimilarity means in Dahlen and Lange's (2007) study. The current study will make this clearer by examining and manipulating similarity in terms of brands and ingredients to see if spill-over effects can occur both within and between product categories.

Based on the theoretical development discussed in Dahlen and Lange (2006) above, one can hypothesise that because of assimilative effects, the brand equity of another brand in the category will fall if one brand in the category has a product recall crisis. Thus we hypothesize the following:

> H1: Product recall of a brand (regardless of whether it is private label or national brand) will lead to a drop in brand equity of all brands within the category.

An interesting question is whether any drop in brand equity due to a product recall crisis is transmitted across product categories. Additionally, if there is a transmission effect, will the change in brand equity be greatest depending on the similarity of the category to the product recall category? For instance, if a brand of cheese spread is recalled because of milk contamination will any change in brand equity be transmitted more to a category of cheese slices (related-similar ingredient) compared to a category such as peanut butter (not related)? Due to the difficulty in measuring category and/or product specific brand equity we modify our analysis to an examination of brand switching since there is a strong association between changes in brand equity and behavioural choice. Thus,

> H2: Any change in brand equity due to a product recall for a brand in one category will impact on the *brand switching* of the same brand in other product categories.
>
> H3: Any change in brand equity due to product recall for a brand in one category will impact differently on *brand switching* away from the same brand in other product categories depending on similarity of the product categories to the recall category.

Method

To test the hypotheses outlined above, a preliminary three-stage experiment using a hypothetical product recall incident was designed. In the first stage of the experiment, respondents were asked to provide a rating on a 1-7 scale of trust, reliability and quality (operational measurements of brand equity components following Aaker, (1991), Keller

(1993) and Agarwal and Rao (1996)) of three brands: Kraft (K), Woolworth's Select (WS) and Woolworth's Home Brand (HB). Directly following this respondents were asked to make choices over 8 different scenarios (designed) for the above brands in two FMCG product categories (cream cheese and either peanut butter or cheese slices). In each category the brands used for the relevant choice scenarios were identical (K, WS, HB). The attributes and attribute levels for each of the brands and categories are provided in Table 5 in the appendix.

The second stage of the experiment involved respondents receiving a randomly selected hypothetical product recall experience based on Kraft or Home Brand. The product recall experience varied with problem severity (serious or mild) and recovery actions (full and partial) and was conveyed to respondents using both a mock web news article and a mock product recall notice. After reading the information provided, respondents were asked to evaluate all brands on trust, reliability and quality (same 1-7 scales as in stage one). The third stage was a repetition of the first stage requiring choices over the same 8 designed scenarios (in the same order) for cream cheese and either peanut butter or cheese slices. In all categories the same three brands were used All stages were conducted using a self-completed survey booklet. The booklets were distributed randomly to an undergraduate class of 160 students with an equal chance that a given student would receive any of the sixteen experimental conditions (combinations of Kraft, HB-brand product recall; Peanut Butter, Cheese Slices-second FMCG category; Severe, Mild-recall problem; Full, Partial-recovery). Results were generated by SPSS.

Results

To test the hypotheses above, data for each of the two recalled brands (K, HB) was analysed initially separately. Total BE (summation of trust, reliability and quality-minimum 3, maximum 21) was determined both before and after the hypothetical product recall and the difference in BE (total BE after – total BE before) calculated. Results are in Table 1 below:

Table 1: Pre-Recall Brand Equity Measures for all Brands, both Experimental Groups

Recalled Brand		K	WS	HB	Diff_K	Diff_ WS	Diff_ HB
Kraft (K) N= 80	Mean	15.338	13.85	10.938	-1.775	0.163	0.075
	Std. Dev	3.47	3.42	3.668	4.034	2.376	2.33
	t stat				-3.935	0.612	0.288
Homebrand (HB) N=80	Mean	16.075	13.575	10.95	0.288	-0.825	-1.475
	Std. Dev	3.327	3.1	3.663	2.567	2.874	3.622
	t stat				1.002	-2.568	-3.642

As expected, the before brand equity measures indicate Kraft has the strongest BE with WS next and HB with the lowest. The results for each of the two experimental groups seem approximately equal. Product recall has decreased mean BE (significantly) for the focal brand in each of the experimental groups. Interestingly, the decrease in BE for K in the K recall group is approximately matched by the decrease in BE for HB in the HB recall group. There does not appear to be any within category spill-over impact when K is recalled. However when HB is recalled, there is a significant decrease in BE for the W brand indicating spill-over brand equity effects from product recall of HB. This is likely due to these brands sharing (in part) the same corporate name (Woolworth's) and not a category spill-over effect. Overall, the evidence rejects H1.

Since there appears to be a significant change in BE after product recall we examine whether this has impacted on brand choices for the product recall category (cheese spread), in the related (similar ingredient) category of cheese slices and in a not related category of peanut butter. Evaluation of choices (conditional) in all categories after recall appears in Table 2.

Table 2: Conditional Choices After Recall, all Product Categories, Both Exp. Groups

Recalled Brand					K	N= 640 choices			
Initial Choice		K			WS			HB	
After Recall choice	K	WS	HB	K	WS	HB	K	WS	HB
Cheese Spread	55.9%	36.9%	7.2%	13.3%	79.6%	7.1%	3.6%	30.9%	65.5%
Cheese Slices	70.4%	27.2%	2.4%	11.2%	87.3%	1.5%	11.8%	29.4%	58.8%
Peanut Butter	70.1%	25.9%	4.0%	14.0%	83.9%	2.2%	11.5%	7.7%	80.8%
Recalled Brand					HB	N= 640 choices			
Initial Choice		K			WS			HB	
After Recall choice	K	WS	HB	K	WS	HB	K	WS	HB
Cheese Spread	79.2%	17.4%	3.4%	26.9%	66.5%	6.6%	28.3%	35.9%	35.9%
Cheese Slices	80.4%	18.4%	1.2%	27.1%	71.2%	1.7%	33.6%	30.8%	35.6%
Peanut Butter	87.1%	8.1%	4.8%	24.1%	64.1%	11.8%	22.4%	12.2%	65.3%

From Table 2, when K cheese spread is recalled there appears to be an impact on the future choice of K cheese spread with approximately 44% of initial K choosers switching to another brand (mostly to WS). This can be contrasted with the much smaller 20.8% (likely baseline) switching away from K when HB is recalled. When HB cheese spread is recalled, approximately 64% of initial HB choosers switch to another brand (only 34% switching when K is recalled). Interestingly when HB is recalled, a large proportion of the HB switchers choose K instead of WS despite WS being arguably a closer substitute for HB than K. This is again likely to be a spill-over effect related to the company brand (Woolworths) of both WS and HB. This is further reinforced when the conditional choices for WS are examined for each of the product recall experimental groups. When K is recalled, WS has a high percentage of repeat purchasers (79.6%). This corresponding percentage is 66.5% when HB is the recalled brand suggesting the HB recall has had an impact on the choices of the related WS brand.

It is also worthwhile to compare the conditional percentages of the brands between experimental groups. For K initial choices the K repeat choice percentages for cheese spread, cheese slices and peanut butter are 55.9%, 70.4% and 70.1% when K is the recalled brand but 79.2%, 80.4% and 87.1% when HB is the recalled brand. The difference between the recall groups provides evidence for spill-over impacts across categories. The K choice percentages in all categories are much lower when K is the focal brand than when HB is the focal brand. Similar evidence exists for HB choices. When HB is the focal recall brand, choice percentages for HB across all categories are significantly lower than when K is the focal brand. This also applies to WS choices which are likely affected by common branding. Overall, the results suggest product recall for a given brand will be transmitted to the same brand in other categories most likely through changes to brand equity. This supports H2.

The effects across categories seem to be dependent on the brand having the product recall. For the K product recall, the K conditional choice percentages (initial K choice group) for cheese slices (70.4%) and peanut butter (70.1%) are higher than for the recall category (cheese spread) but not significantly different from each other. This suggests a less than full transmission impact of the recall across product categories. The similar ingredient category (cheese slices) is affected similarly to the not related category (peanut butter). There appears to be a spill-over impact for HB choices in the K recall experimental group for cheese slices (59%) and not for peanut butter (81%). However caution should be exercised since the numbers in these cells are small and conclusions may not be valid. In the HB recall experimental group, a transmission effect to a similar ingredient category is evident. In the HB initial choice sub-group, repeat choice of HB is 36% for both cheese spread and cheese slices but is 65% for peanut butter. This seems to clearly indicate a spill-over impact of the product recall to the same brand in a similar ingredient category but not (to the same extent) to a non-related category. The impact on K and WS conditional choices is similar for cheese spread and cheese slices reinforcing the notion of ingredient related spill-over. For K, the peanut butter repeat purchase percentage appears higher than for the other two categories (suggesting reduced spill-over) while WS peanut butter conditional choices follow a similar pattern to cheese spread and cheese slices (suggesting similar spill-over). Once again, the Woolworths corporate brand common to WS and HB is likely explaining the spill-over effect for these two brands across related and non-related categories when HB is recalled. Overall, the evidence seems to suggest a spill-over across ingredient categories but a lesser impact across non-related categories. This is evidence supporting H3.

Managerial Implications, Conclusions and Limitations

The results suggest that product recall, overall, has a negative effect on brand equity for the focal brand but does not seem to impqact on the brand equity of other brands in the product catgeory. The exception to this WS and HB is explained by the overall corporate brand that houses both private label brands. From a managerial perspective, it suggests changes in brand equity due to product recall for one private label brand may impact on the brand equity of a related private label brand and may induce switching away from both toward national brands. The impact of a product recall also seems to be transmitted across product categories. Product recall in one category seems to result in increased switching away from the focal brand in other categories. This increased switching is, overall, greater the more similar the other category is to the recall category. Managerially, this suggests some risk in using a same brand (branded- house) strategy across categories since recall impacts in one category are likely to be transmitted to other categories.

This preliminary study has a number of limitations. The sample was a small (160) convenience sample of university students. A larger sample of product category users should provide better results, possibly incorporating different market segments with possibly different responses to recall. The sample set for HB choices was less than ideal in size and a larger sub-sample is needed to make more definitive conclusions. Ideally, although the impacts determined should be considered as relative impacts (relative to baseline conditions), a control group may be useful in future research to determine baseline switching (not due to any product recall effects) for each of the categories. This study also assumed product recall did not impact on product attribute evaluations or the error terms. This may not be true and needs to be investigated further *in a more comprehensive study.*

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