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Behavioral brand loyalty and consumer brand associations

Jenni Romaniuk *, Magda Nenycz-Thiel

University of South Australia, Australia

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ABSTRACT

Brand associations are a core part of Consumer Based Brand Equity (CBBE), and behavioral brand loyalty is a desirable outcome of CBBE. In this research, data from purchase panel and consumer surveys merge to reveal the relationship between a consumer's past behavioral loyalty and their current propensity to give brand associations. The results show a positive relationship, where those with a higher buying frequency and a higher share of category requirements are more likely to give brand associations. The findings also show that share of category requirements is a greater driver of brand association responses than buying frequency. This finding suggests that the use of competitors has a greater dampening effect on brand associations than the reinforcement effect of repeated brand buying. These results have important implications for modeling brand associations, particularly using cross-sectional data.

1. Introduction

Keller (1993, 2003) conceptualizes Consumer Based Brand Equity (CBBE) as the aspects of customers' brand knowledge that create a differential effect in behavior towards the brand. One of the key objectives of marketing research is to determine how CBBE influences customers' future brand buying behavior. To this end, there has been considerable effort to conceptualize and measure the different facets of CBBE across a wide range of contexts (e.g., Hsieh, 2004; Keller, 1993; Leone et al., 2006). However, very limited evidence concerning how CBBE relates to changes in customer buying behavior exists.

A potential factor holding back discoveries in this area is that CBBE models rarely include past buying behavior. The focus of this paper is on behavioral brand loyalty, which is the relative weight or frequency of customer purchases (Ehrenberg, 2000). Behavioral brand loyalty combines with penetration, which is how many people buy the brand within a timeframe to make up market share. Penetration is a potential antecedent of CBBE (Keller, 2003). Penetration is a binary variable, representing the instance of brand purchasing in the timeframe or not. Therefore, penetration does not vary amongst a brand's customers. All customers, as defined by penetration, have bought the brand at least once. However, consumers display considerable heterogeneity in their behavioral loyalty, with different customers having different weights of purchase of the brand over a particular timeframe. The widespread fit of the NBD-Dirichlet Model (Goodhardt, Ehrenberg, & Chatfield, 1984) shows that this heterogeneity in brand loyalty across consumers is a normal characteristic of customer bases of brands in packaged goods markets.

One can find an appropriate analogy in horseracing. Horses in the same race have been racing for differing periods, with varying levels of success, so they do not all start with the same potential to win. Thus betters look to the horse's prior form, in an attempt to improve the accuracy of their wagers for the next race. Consumers of a brand have similarly heterogeneous past experiences with the brand and its competitors (Rust, Lemon, & Zeithaml, 2004). This heterogeneity implies that when assessing brand equity, a variety of customers, each with potentially different brand equity baselines, are likely to exist. Understanding the nature and drivers of the variation in baselines will improve accuracy in measuring any change in CBBE over time. Such knowledge also provides insight into customers' potential for change, through highlighting segments with more/less room to move in CBBE. This information can be valuable when targeting marketing activities to build brand equity.

Therefore, like the aforementioned horses, at any single point in time, not all customers in a brand's customer base start with the same potential, which, in turn, leads to the question about how the differential loyalty levels may affect current CBBE.

CBBE is multifaceted, including dimensions such as brand awareness and brand image (Keller, 2003). CBBE can also encompass attitudes toward a brand, brand personality traits, and perceived quality ratings (Aaker, 1996; Aaker, 1997; Buil, de Chernatony, & Martìnez, 2008). However, the key component of CBBE is the associations that customers hold about the brand in memory. These associations are the concepts that have links to the brand name in

* Corresponding author at: Ehrenberg-Bass Institute for Marketing Science, University of South Australia, GPO Box 2471 Adelaide SA 5001, Australia. Tel.: +61 08 8302 0706.
E-mail addresses: Jenni.Romaniuk@MarketingScience.info (J. Romaniuk), Magda.Nenycz-Thiel@MarketinScience.info (M. Nenycz-Thiel).

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consumer memory (Keller & Lehmann, 2006). Examples of associations include representations of purchase and consumption situations, functional qualities or provided benefits (Holden & Lutz, 1992).

Stronger behavioral loyalty is a desirable differential effect of CBBE. The basic premise is that if CBBE shifts, then so should loyalty (Kaynak, Salman, & Tatoglu, 2007; Leone et al., 2006). However, much of the past research takes a cross-sectional approach, where the researchers use claimed behavioral loyalty and measure the construct at the same time as the CBBE (e.g. Brakus, Schmitt, & Zarantonello, 2009). This approach raises serious issues about the direction of causality, particularly if a relationship between past behavioral loyalty and current brand associations exists. Broyles, Schumann, and Leingpibul (2009) model brand loyalty as an antecedent of CBBE and find a weak/insignificant relationship between stated behavioral loyalty and imagery. However, the research has two limitations. The first limitation is that the study collects both measures at the same time. The second limitation lies in the antecedent brand loyalty measure, which takes form of verbalized past behavior in comparison to other brands. This study overcomes the limitations of this research.

The aim of this paper is to understand the degree to which a customer's past behavioral brand loyalty is an antecedent of their current brand associations. The paper takes a unique approach by merging two data sources from the same consumers: scanner buying data collected over one year, and survey data collected at the end of the year. This approach provides a clear direction of behavior-to-brand associations, and reduces the inaccuracy of using claimed behavior to assess brand loyalty and the common method bias inherent in cross-sectional studies (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003).

2. Theoretical background and hypotheses

2.1. Brand associations as part of CBBE

A core component of CBBE is the network of brand associations in consumers' memory (Christodoulides & de Chernatony, 2010; Keller, 2003). These associations include functional qualities, benefits, purchase and consumption situations (Keller, 1993). Brand associations can underpin the consumer's propensity to consider and buy the brand. Under an associative model of memory structure and retrieval (Anderson & Bower, 1979; Collins & Loftus, 1975), associations make the brand more likely to be thought of in a choice situation through giving the brand links to potential retrieval cues (Nedungadi, 1990; Romaniuk, 2003). Furthermore, from an information-processing perspective, brand associations increase the chance that the brand will be able to fulfill the consumer's needs at that time (Bettman, 1979). Moderating the relationship between the attribute and the brand are the links to competitor brands, which can interfere with retrieval and provide alternatives that reduce the propensity to select the brand (Burke & Srull, 1988). Therefore, marketers try to link a brand with strong (accessible), favorable associations (Keller, 1993) to keep ahead of competitors and generate a differential effect on consumer behavior. Consequently, changes in the nature and strength of brand associations should flow into changes in consumer behavior.

Despite this long-standing claim, little empirical evidence exists to support the relationship between a consumer's brand associations and future buying behavior. Two possible reasons exist for the lack of evidence. The first possibility is methodological. Much of the research to date is cross-sectional in nature, modeling data where brand associations and brand loyalty measures come from the same survey (e.g., Broyles et al., 2009; Yoo, Donthu, & Lee, 2000). This approach leads to questions about the direction of effect as to whether brand associations are impacting on brand loyalty or vice versa. The simultaneous measurement of brand associations and brand loyalty also raises the issue of common method bias amplifying relationships between constructs (Avolio, Yammarino, & Bass, 1991). Therefore, research that has, first, clarity of direction and, second, does not measure the constructs in the same survey, will help disentangle relationships between the variables of interest. The second possible explanation for the lack of empirical evidence is the neglect of consumers' past direct experiences with the brand in CBBE modeling. Brand associations form from past brand interactions (Krishnan, 1996). For current customers of the brand, these interactions include the direct experience of buying and consuming the brand, which has a powerful impact on the brand associations that are formed (e.g., Kempf & Smith, 1998). However, customers of a brand differ in the number of times they have directly encountered the brand. They also differ in their relative past experiences with competitor brands, which impacts upon their formation of competitor associations. The manifestation of this past experience is behavioral loyalty.

2.2. Behavioral brand loyalty

Brand loyalty metrics have a long history in marketing, dating back to at least Guest (1944). Within this long history, a considerable amount of discussion exists about conceptualizations and operationalizations, and the integration of both behavioral and attitudinal components (e.g., Dick & Basu, 1994; Jacoby & Chestnut, 1978). The focus of this research is on behavioral brand loyalty (Ehrenberg, 2000), and in particular its two operationalizations:

- Buying frequency—Buying the brand more frequently than other consumers;
- Share of category requirements—Devoting a larger proportion of category purchases to the brand than to competitors.

Both of these are, from the firm's perspective, desirable consumer behaviors. The next section discusses the relationship between these two types of loyalty and the formation of brand associations.

2.2.1. Buying frequency

Buying frequency is how many times a customer buys in a specific timeframe. For each brand, the distribution of buying frequencies in packaged goods markets follows predictable properties, for which the Negative-Binomial Distribution provides estimation (Ehrenberg, 1959; Schmittlein, Bemmaor, & Morrison, 1985). Therefore, brands would normally have heterogeneity in customer buying frequencies, but the impact of this heterogeneity on the brand associations of those consumers is unclear. Consumers develop and reinforce memories about a brand in three key ways: exposure to marketing communications, receiving word-of-mouth, and direct personal experience (Krishnan, 1996). Additionally, one can make inferences about a brand from pre-existing associations about the company or the country of origin (Keller, 1993). Of these, direct personal experience has the strongest influence (Burnkrant & Unnava, 1995), which means that those who have bought the brand more frequently in the past have had more reinforcement through direct experience. As such, they should have developed much stronger associations in memory than those who have previously bought the brand less frequently. This reasoning leads to the first hypothesis:

H1. Customers who have previously bought the brand more frequently will have stronger associations about that brand than those who have previously bought the brand less frequently.

2.2.2. Share of category requirements

Each market consists of many competing brands. In packaged goods markets, consumers typically have a repertoire of brands that they shuffle between over time (Sharp, Wright, & Goodhardt, 2002). Therefore, across customers, a difference exists in the relative weight of purchase allocations to the brand versus the allocation to competitors. Some customers will buy the brand exclusively or near exclusively, while for others the brand will only be a small part of their

repertoire (Ehrenberg, 2000). The number of competitor brands that link to the target node is a key factor in influencing how accessible information is from memory (Burke & Srull, 1988; Heil, Rösler, & Hennighausen, 1994). Therefore, a positive relationship should exist between share of category requirements, or using few competitors, and the propensity to give brand associations. This discussion leads to the next hypothesis:

H2. Customers who have previously had a higher share of category requirements for a brand will have stronger brand associations than those who previously had a lower share of category requirements.

2.3. The special case of 100% behaviorally loyal customers

In each market, a subset of customers exist whom buy only one brand within a timeframe. These customers are referred to as 100% behaviorally loyals (Cannon, Ehrenberg, & Goodhardt, 1970). Therefore, 100% behaviorally loyals receive direct experience reinforcement for only one brand and only indirect experience reinforcement for competitor brands. This stronger brand reinforcement should increase their propensity to give associations for that brand. However, this segment also typically comprises light category buyers (Ehrenberg, 2000), which means that brand reinforcement for these customers is likely to be infrequent relative to other customers. This lack of frequent reinforcement should have a dampening effect on their propensity to give associations about the brand. Therefore, this 100% behaviorally loyal segment will undergo further tests, as they have two opposing forces on their propensity to give brand associations.

The first test for the 100% behaviorally loyal segment is for buying frequency effects. Within the cohort of 100% behaviorally loyals, those who have bought the brand more frequently should have a greater propensity to give brand associations, as they will have had relatively more reinforcement about the brand. This discussion leads to the third hypothesis:

H3. 100% behaviorally loyals with a higher purchase frequency will have a stronger propensity to give associations than will 100% behaviorally loyals with a lower purchase frequency.

The second test is to compare 100% behaviorally loyals with non 100% behaviorally loyals, controlling for past buying frequency. The lack of competitor links to inhibit retrieval of the focal brand suggests that 100% behaviorally loyals should have a higher propensity than non 100% behaviorally loyals to give associations about the (only) brand they buy. Consequently, the fourth hypothesis is:

H4. 100% behaviorally loyals will have a higher propensity to give a brand association than consumers with the same frequency of buying the brand, but who also buy competitor brands.

3. Research method

This study uses data from two packaged goods categories in the UK. Due to commercial-in-confidence agreements, the categories and brands remain hidden. Both categories are hot beverages, frequently consumed by the UK population, and include six brands. While the data for this paper comes from the same consumers, the sources vary. The brand purchasing data is retail scanner data from a chain's loyalty card over a 12-month period, ensuring sufficient purchase frequency to differentiate between high and low loyalty customers. All panellists are category users who have purchased the category at least once in the past 12 months, and had opted-in to participate in surveys. The collection of brand associations is via a consumer online survey at the end of the purchase data period. Only those panellists who were category users in the last 12 months took part in the online survey. Therefore, purchase data is available for all of the survey respondents. Panel respondents had a unique identifier, which matched the identifier in the online survey. The researchers used the identifier to match the data from the two sources at an individual level. Considering that consumers in the UK buy the category frequently, the majority of the panellists met the screening condition of buying the category in the last 12 months. In order to increase the response rate, an incentive was in place. While the researchers had no access to the response rate for the initial invitation, which had been to all category buyers, the expected response rate for an opt-in panel is to be reasonably high. The sample size is 8000 customers in each category, the samples were non-overlapping, and the sampling was random. The 8000 was the target number of survey responses and the survey terminated after this point.

Table 1 provides a demographic description of the sample. Since females are commonly the main household shoppers (Bassett, Beagan, & Chapman, 2008), such a breakdown is representative of a grocery-purchasing sample.

3.1. Brand association measurement

A free choice, *pick any* measurement technique measured brand associations. This technique is a free response measure, where respondents see (in an online setting) an attribute (e.g., *has strong flavor*) and need to answer which, if any, of the listed brands they associate with that attribute (Barnard & Ehrenberg, 1990). A *none of these* option exists to minimize guessing. There are 16 brand attributes in each category. Expert researchers and brand managers developed the attribute list, based upon their past research experience in the category.

3.2. Behavioral brand loyalty measurement

This study uses two brand loyalty measures: buying frequency and share of category requirements (SCR). Buying frequency is the number of times a customer bought a particular brand during a year. This ranges from one to 56 in Category 1, and up to 62 in Category 2. SCR is the share of a particular brand buying of the total category buying for a customer, which ranges from 1% to 100%. The analysis is separate for each brand and only includes those with a non-zero buying frequency for that brand. Before analysis, researchers test correlations between the two loyalty measures at an individual level (see Table 2). The average correlation between loyalty measures is .38. These low correlations give confidence that the measures are two distinct constructs. Reflecting the hypotheses, the analysis is across the different consumer loyalty groups, within each brand in each category.

4. Results

To test H1 and H2, researchers divided customers into four groups based on buying frequency: once only; two times; three or four times;

Table 1
Demographic description of the sample.

	Category 1 ($n = 8000$)	Category 2 ($n = 8000$)
Gender	%	%
Female	72	71
Male	28	29
Age		
18–24	4	2
25–34	24	18
35–44	33	33
45–54	23	27
55–64	13	16
>64	4	4

Table 2
Correlations between behavioral brand loyalty measures.

Category 1	Correlation Coeff.	Category 2	Correlation coeff.
Brand 1	.34*	Brand 1	.30*
Brand 2	.41*	Brand 2	.33*
Brand 3	.39*	Brand 3	.38*
Brand 4	.47*	Brand 4	.43*
Brand 5	.41*	Brand 5	.34*
Brand 6	.43*	Brand 6	.35*
Average	.41	Average	.36

*$p<0.001$.

and five + times. For each brand, this variable is cross-tabulated, with the responses to each of the brand attributes. Chi-squared tests determine significant differences between groups, with all differences between brand associations at different levels statistically significant at the $p<0.001$ level. The results are aggregates and presented by brands for ease of display. Ordering of the brands by their penetration facilitates noticing patterns between smaller and larger brands. The results (see Table 3) show a positive relationship between the past frequency of buying the brand and the current propensity to give brand associations in both categories. This finding gives support to H1 for both categories.

To test H2, researchers performed a similar division of the share of category requirements variable into four levels. The categories used are: 1%–20%; 21%–50%; 51%–99%; and 100%. The analysis uses Chi-squared tests to identify significant differences between behavioral loyalty segments and the relative propensities of the segments to give brand associations. The key finding (shown in Table 3) is that behavioral loyalty positively relates to response levels up to the 51–99% category. However, the difference in propensity to give brand associations between 51–99% and 100% behaviorally loyals varies across brands. For brands with higher penetrations, the results follow the hypothesized pattern. However, for brands with smaller penetrations, frequent instances of statistically significant results in the opposite direction exist, with 100% behaviorally loyals having a lower response level than those who are only 51–99% loyal. Therefore, the results give support for H2 for all loyalty levels except, on occasion, for 100% behaviorally loyals. The tests for H3 and H4 further explore this segment.

The test for H3 is whether 100% behaviorally loyals increase in brand associations in line with buying frequency. The results (Tables 4 and 5) show this to be the case generally, with 100% behaviorally loyals, buying the brand five times, having a higher propensity to give brand associations than three or four times buyers, who in turn have a higher propensity than that of two times buyers, with once only buyers having the lowest propensity. Therefore, H3 has empirical support.

To test H4, researchers divide customers into 100% behaviorally loyals or not (i.e., buying more than one brand). The brands differ in the proportions of 100% behaviorally loyal customers, from 1% for the smallest brand, to 10% for the largest brand. The analysis compares the propensity of each buying frequency sub-group to give brand associations. Given the substantive similarities in the underlying patterns for individual attributes, the dependent variable is the sum of the number of attributes for each brand given by each respondent.

The analysis uses one-way ANOVA tests to examine significant differences between the 100% behaviorally loyals and the non 100% behaviorally loyals at each level of buying frequency. The results (Tables 4 and 5) show that 100% loyals tend to give a greater number of associations than those who also use competitor brands. This finding is consistent across the different levels of buying frequency.

The percentage difference between the 100% behaviorally loyals and the non 100% behaviorally loyals, is higher for the once only buyers (average 45% in Category 1, and 50% in category 2), than for the twice and three–four times buyers at about 40%. Failures to pass statistical tests are typically due to lower statistical power associated with small sample sizes. The difference between 100% behaviorally loyals and non 100% behaviorally loyals is lowest and less consistent for the heavy buyers (average of 11% in Category 1, and 16% in Category 2), but the overall results follow a similar pattern to other groups.

To compare the relative influence of each behavioral loyalty measure on brand associations, researchers used stepwise linear regressions for each brand. The two behavioral loyalty measures of SCR and buying frequency are the independent variables. The

Table 3
Average % brand attribute responses across different levels of brand loyalty (ordered by brand penetration).

Category 1	Once	Twice	3–4	5+	Category 2	Once	Twice	3–4	5+
Brand 1	35	42	46	56	Brand 1	31	36	45	53
Brand 2	38	44	49	57	Brand 2	34	43	46	51
Brand 3	28	33	43	50	Brand 3	27	31	42	49
Brand 4	28	32	35	42	Brand 4	30	31	40	56
Brand 5	36	46	53	59	Brand 5	28	37	43	53
Brand 6	14	20	27	43	Brand 6	26	37	42	52
Average	30	36	42	51	Average	29	36	43	52
Category 1	1–20%	21–50%	51–99%	100%	Category 2	1–20%	21–50%	51–99%	100%
Brand 1	29	39	52	58	Brand 1	22	29	44	48
Brand 2	31	43	57	59	Brand 2	25	37	51	48
Brand 3	26	35	52	49	Brand 3	23	30	46	42
Brand 4	26	32	39	46	Brand 4	25	34	49	46
Brand 5	34	45	66	67	Brand 5	24	35	47	48
Brand 6	14	23	47	32	Brand 6	25	32	58	42
Average	27	36	52	52	Average	24	33	49	46

Table 4
Average number of brand associations for Category 1.

	Brand bought once only		Brand bought twice		Brand bought 3–4 times		Brand bought 5+ times	
	100% loyal	Also buy other brands	100% loyal	Also buy other brands	100% loyal	Also buy other brands	100% loyal	Also buy other brands
Brand 1	5.6	3.3**	6.3	3.9**	7.1	5.3**	8.2	6.7**
Brand 2	4.9	3.4**	5.2	3.9*	7.1	5.5*	7.1	7.0
Brand 3	4.3	3.5	6.0	5.2	8.7	5.1	7.2	7.2
Brand 4	5.6	3.9**	5.3	4.1**	6.4	5.2	8.6	8.0
Brand 5	5.2	3.6**	5.9	4.9	6.0	6.1	8.5	6.7*
Brand 6	6.0	4.0**	6.7	5.6*	7.4	6.0*	7.6	7.0
Average	5.3	3.6	5.9	4.6	7.1	5.5	7.9	7.1

Significant at: *$p<0.05$, **$p<0.01$ compared to other group within the buy rate segment.

Table 5
Average number of brand associations for Category 2.

	Brand bought once only		Brand bought twice		Brand bought 3–4 times		Brand bought 5+ times	
	100% loyal	Also buy other brands	100% loyal	Also buy other brands	100% loyal	Also buy other brands	100% loyal	Also buy other brands
Brand 1	8.4	4.9**	9.1	6.1**	9.3	6.9**	10.8	8.4**
Brand 2	8.1	5.6**	10	6.7**	9.6	7.8**	10.9	9.5**
Brand 3	6.0	4.2**	7.8	5.5**	9.7	6.5**	9.8	7.8**
Brand 4	6.0	4.3**	7.3	4.9**	9.4	5.5**	8.7	6.2**
Brand 5	8.3	5.9**	9.8	7.1*	11.7	8.6**	12.1	9.6**
Brand 6	3.5	2.1*	4.8	3.4	5.8	4.7	9.8	6.7*
Average	6.7	4.5	8.1	5.6	9.3	6.7	10.4	8.0

Significant at: *$p<0.05$, **$p<0.01$ compared to other group within the buy rate segment.

Table 6
Linear regression results for SCR and buying frequency against the total sum of associations.

	Total Adj. R^2 (%)	SCR		Buying frequency	
		Beta	T-statistic	Beta	T-statistic
Category 1					
Brand 1	27	0.43*	31.62	0.15*	10.86
Brand 2	11	0.25*	16.0	0.11*	7.12
Brand 3	13	0.27*	17.08	0.13*	8.3
Brand 4	4	0.12*	6.89	0.11*	6.22
Brand 5	15	0.33*	21.35	0.08*	5.18
Brand 6	8	0.26*	15.77	0.05*	2.87
Average		0.28		0.11	
Category 2					
Brand 1	19	0.38*	28.35	0.08*	6.21
Brand 2	20	0.39*	28.95	0.08*	5.7
Brand 3	13	0.30*	21.6	0.08*	5.74
Brand 4	5	0.19*	12.67	0.04*	2.78
Brand 5	18	0.37*	23.46	0.07*	4.43
Brand 6	17	0.28*	19.9	0.17*	12.14
Average		0.32		0.09	

*$p<0.001$.

dependent variable is the sum of the number of associations given for a brand, to represent the propensity to give brand associations.

The results (Table 6) show that for all brands, both past behavioral loyalty metrics are significant drivers of brand associations elicited by a customer ($p<0.001$), with total adjusted R^2s ranging from 27% to 4%. This finding suggests that past behavioral loyalty alone can explain a relatively high amount of the variance in the propensity of a customer to give brand associations. However, it also suggests that other factors have an influence on brand associations, not just past behavioral loyalty.

The relative size of the Beta coefficients suggests that SCR has a stronger relationship with the propensity to give brand associations than does buying frequency. The average differential in the Beta coefficients reports that the relationship between SCR and propensity to give brand associations is three times that of buying frequency. This finding is consistent over 11 brands in the two categories, with the one exception being Brand 4 in Category 1, where both Beta coefficients are similar in size.

5. Discussion

This paper examines whether two behavioral brand loyalty metrics, buying frequency and SCR, are antecedents to the current brand associations held by customers. A major strength of this research is that while the data is from the same people, the sources vary. Buying behavior collected from scanner data fuses with brand associations collected via an online survey of the same individuals.

The findings suggest a positive relationship between past behavioral loyalty and the current propensity to give brand associations. This relationship is evident for the two behavioral loyalty metrics of buying frequency and SCR. For example, customers who had previously bought the brand five or more times have a higher propensity to give brand associations than customers who had only bought the brand once. This finding is in line with the theory of the strong memory reinforcement effects of using a brand (e.g., Kempf & Smith, 1998; Singh, Balasubramanian, & Chakraborty, 2000). Furthermore, those customers who bought the brand for 51–99% of their SCR have a higher propensity to give brand associations than did those customers with an SCR of 1–20%. This finding supports the theory of the interference of brand associations when more competitor links are present (Meyers-Levy, 1989). The exception to this is the 100% loyals, where evidence shows a levelling off of brand associations.

Results of this research offer a number of theoretical and managerial implications. First, a substantive difference exists in the response level of brand associations of those with low behavioral loyalty compared to those with high behavioral loyalty. This difference creates a problem for researchers in trying to determine cause and effect when modeling CBBE in cross-sectional data. Those with high behavioral loyalty will already have a higher propensity to give brand associations than other segments. Therefore, they are expected to have higher response levels to brand associations. To overcome this problem, marketing researchers need to include the influence of past behavior, and particularly SCR, in the modeling, and draw upon a dependent variable from a different data source or collect data at a later point in time to capture future buying behavior.

Importantly, the results also shed some light on the potential of different segments to increase in brand associations. More room to move exists for those who just buy the brand once, and have weaker links in memory, than for those who buy the brand five times and have stronger links in memory. This result suggests that marketing activities such as advertising, which is an indirect influence on consumer memory, might achieve greater ROI in terms of shifts in brand associations if targeted at light and non-users than at heavy users. This result might also suggest that the expected effects of marketing activities could vary across segments, as a reflection of this differing initial propensity. Light buyers may react more to advertising exposure than heavy buyers because of lower initial starting points. Since recent research shows that light buyers tend to be light television viewers (Taylor, 2010) and light viewers are more responsive to advertising, accounting for share of voice (Roberts, 1999), the assumption about light buyers being more receptive to advertising is plausible.

A final insight from this paper is that of the two loyalty behaviors tested, past SCR and buying frequency, past SCR has the stronger relationship with current brand associations. This finding is important, as it suggests that models incorporating brand associations need to include the strength of competitors in memory as well as the strength of the brand itself. This finding highlights the importance of understanding market structures, and identifying key competitors.

The most obvious future research generated from this study would be to model the effects of CBBE taking into account past behavioral loyalty, in particular SCR. Controlling for SCR may facilitate detecting the relationship between the dimensions of CBBE and future buying behavior. While obtaining two sources of data is obviously more difficult and costly, such practice seems to be a better investment for future research to measure the predictive power of CBBE.

A limitation of this research is that the study only examines one aspect of CBBE. Extensions into whether past behavioral loyalty influences other dimensions such as awareness, salience and attitude should follow. Additionally, other types of brand associations exist where replication would be beneficial. An example is brand associations that link to the company (for example see Brown & Dacin, 1997). These associations are less rooted in past brand usage, and as such, may be less subject to loyalty influences. Future research could also investigate the relationship between behavioral loyalty and negative brand equity, which would need to include former brand usage as well (Winchester & Romaniuk, 2003, 2008). Extensions into other packaged goods categories would also be useful, as well as other types of markets. An interesting question is whether behavioral loyalty has the same impact in service and durable markets, where different purchase patterns exist for brands and for competitors.

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