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Practice Prize Paper

Incorporating Emotions into Evaluation and Choice Models: Application to Kmart Australia

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This paper addresses the repositioning of Kmart Australia in 2011. It shows how by calibrating emotional as well as cognitive reactions and estimating their impact on purchase intentions, Kmart was able to focus its communications, improving market share. We measure nine key emotions, ranging from surprise to anger. Including these emotions significantly improves our model for likelihood to choose a store. Measuring emotions enabled Kmart's advertising agency to create a television commercial that tapped into the specific emotions that most strongly predict the likelihood to choose a store; that is, the model drove the development of the advertising creative. The resulting television commercial tested well and was effective when launched. At the individual level, cognitions and emotions changed dramatically. At the aggregate level, an econometric model showed that store visits were significantly enhanced. Kmart's EBIT (earnings before interest and tax) increased by 30%, whereas Kmart's main rival had almost no EBIT growth, despite vigorous attempts to counter Kmart's campaign. One of our key contributions is to incorporate emotions into marketing science models of evaluation and purchase intentions. We also provide a new methodology to measure emotions. The approach enables marketing science to participate in the design of marketing stimuli, rather than just testing preexisting ones.

Data, as supplemental material, are available at http://dx.doi.org/10.1287/mksc.2015.0954.

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1. Introduction

In November 2007, one of Australia's largest retail conglomerates, Wesfarmers, purchased Kmart, a large but struggling discount department store. After accounting for the cost of capital and taxes, it had not registered a profit for 10 years.[1] Leading industry commentators described the Kmart Australia business as a "crumbling business flirting with collapse, dysfunctional and directionless" (Harper 2013). In 2008, a new chief executive officer, Guy Russo, overhauled the Kmart business model. This involved a radical 60% reduction of stockkeeping units, direct sourcing of inventory, closure of 62 storage facilities, moving 150 buyers to merchandise source countries, an average price reduction of 30%, and decluttering and progressive refitting of the stores. The most fundamental change to the business was to shift from discounting cycles to everyday low prices (EDLPs). According to Russo, "without a doubt this was one of the hardest changes. When I started, up to 90% of our sales were driven by discounts" (Harper 2013).

Although the business renewal provided a new store experience, improved trial rates and greatly increased store traffic did not follow. Russo believed that he needed a brand rejuvenation plan. The brand rejuvenation, in combination with operational efficiencies, brought about a dramatic shift in the profitability of Kmart Australia. Between 2011 and 2013, Kmart

[1] See http://advertisers.careerone.com.au/hr/hr-best-practices/workforce-management/improving-employee-relations/leadership-turned-kmart-around-russo.aspx, accessed September 26, 2015. We provide background on the Australian discount retailing sector in Web Appendix 1 (available as supplemental material at http://dx.doi.org/10.1287/mksc.2015.0954).

Australia achieved a 69% growth in earnings before interest and tax, whereas its chief competitor, Big W, grew by just 8%. More fundamentally, between 2010 and 2013 there was an increase of 20% in the number of shoppers visiting the store and making a purchase, and an increase in the number of products sold by 42%.[2]

Store traffic was critical to restoring profitability, given the margin pressures brought about by the 30% average price reduction. Kmart decided to achieve this by establishing a strong position on rational drivers associated with value for money, combined with a superior emotional connection with its target market (corresponding to Keller's 2000 points of parity and points of difference). Rational drivers (particularly value for money) represent the "price of entry" for competing in the discount department store category. Subsequently, Kmart sought to pursue emotional differentiation from its competitors, based on preliminary research that suggested that quite deep-seated emotions were associated with shopping in a discount department store. These related to living within one's means and consequential anxiety about failing to do that, including the hidden shame associated with the potential compromises associated with needing to budget.

Delivery of the brand rejuvenation strategy fell to three closely integrated groups: Forethought Research (for insights and the testing of marketing materials); the creative agency, Belgiovane Williams Mackay (for development of creative material); and the Kmart management team (for service delivery). The research component had three major parts: baseline market calibration, stimulus development and testing (both in the laboratory and the market), and postlaunch tracking. Market calibration involved identifying the key rational and emotional drivers of store choice, estimating their relative importance, and assessing the performance of Kmart and its key competitors on them. The base-level calibration provided the raw material for the design of marketing stimuli in the second stage. Creative ideas were developed in highly structured workshops. The third task of market research was stimulus testing, both prior to and after the campaign launch.

We[3] proceed by specifying a model of store choice that incorporated both cognitions and emotions, as well as unobserved heterogeneity. Based on this model, we develop measures to calibrate levels of these variables, enabling estimation of their relative effect on utility and choice. We then describe how this view of the market was used to develop advertising copy and undertake training and merchandising activities. We provide the results in three stages. First, we describe the baseline calibration, which gives us a benchmark against which marketing effectiveness can be judged. It is also the primary input in the communications/service design stage. Second, we show consumer reactions to the resultant Kmart television commercial ("1,000 Mums") and the commercial with which Big W quickly reacted ("Get It for Less"). We provide the results of the campaign after one year, both in terms of the microlevel changes in beliefs, emotions, utility, and intentions and the macrolevel changes in market share, sales, and profitability. We also demonstrate the relationship between the improved performance at Kmart and the campaign that was adopted, both at the micro and macro levels. Finally, we assess the impact of the methodology overall and discuss its transportability to other applications, for different products and services, and in different markets.

2. Modeling Approach

To meet the management demands described in §1, we need to (i) develop a model of consumers' likelihood of choosing a store that incorporates both emotional and rational evaluations of all of the stores considered in the market, (ii) accommodate a hierarchy of process attributes, (iii) capture heterogeneity across the population, and (iv) represent how beliefs, emotions, and preferences change over time. Simultaneously handling these four requirements is rather challenging and has not been attempted previously in the service quality literature.

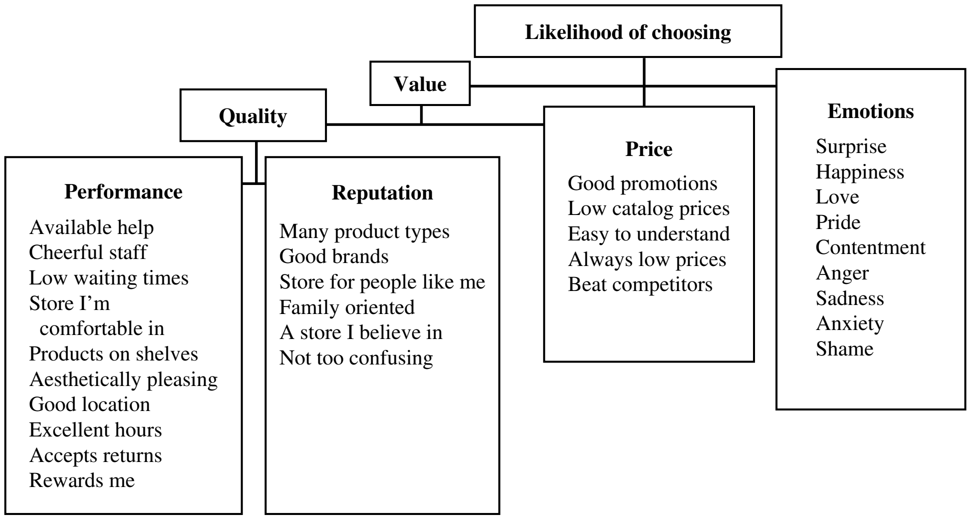
2.1. Conceptual Model

The basis of our model is one in which store choice is predicated on beliefs or perceptions: a cognitive model commonly used to represent behavior (see, e.g., Danaher et al. 2011). From there, we consider the incorporation of affect (specifically, emotions) based on its recognized importance in driving choice (e.g., Williams 2014). For a more detailed motivation of why emotions are an important element of the consumer decision process, see Roberts (2014). At the time of the Gary Lilien ISMS-MSI Practice Prize judging, a search of "emotions" and "choice models" in Google Scholar revealed no top tier marketing articles, despite the

[2] Internal sales statistics are from Kmart and Woolworths (http://www.woolworthslimited.com.au/page/Invest_In_Us/Reports/Reports/) and Wesfarmers (http://www.wesfarmers.com.au/investors/reports-results-presentations.html) Annual Reports 2011 and 2012.

[3] This application was undertaken by Forethought Research for Kmart Australia. The underlying Prophecy Thoughts and Feelings methodology was developed by researchers at Forethought Research with input from John Roberts and Peter Danaher. Data collection for the project was undertaken by Forethought Research and its contractors. John Roberts and Peter Danaher contributed to the model specification alongside Forethought researchers led by Dr. Elaine Saunders. Data analysis was undertaken by both Peter Danaher and Forethought Research analysts. Thus, in this paper, "we" refers to this combination of industry and academic collaborators.

Figure 1 **Model of Consumer Choice for Discount Department Stores**



importance of affect in the evaluation process. Emotions have been studied extensively in the academic literature (for a review, see Roberts 2014) and by industry (see Web Appendix 2), but most frequently as an end in themselves, rather than as an input to a model of choice.

A key component of our rational model is the linkage between value, quality, and price (perceptions), since perceived value has been repeatedly demonstrated to correlate well with market share and profits (Zhou et al. 2009). For example, Gale's (1994) widely adopted customer value analysis model uses customer perceived value (determined by price and quality) as the key dependent variable. These constructs, in turn, are linked to process attributes. Respondents in the baseline calibration of data evaluated just two of the three major stores in the market.[4] This means we have just one choice set per individual, which prevents us from capturing individual-level heterogeneity in a discrete choice model. Instead, we develop a mixed-effects linear model with the key dependent variable being the likelihood to choose a store. Because we have cognitive and affective evaluations for two stores for each individual, we can make use of all of the data and allow for heterogeneity, an important requirement for any consumer response model (Rossi and Allenby 2003).

Figure 1 depicts our conceptual model. We include a *quality* construct, comprised of *performance* and *reputation*, since this combines the merchandising and communications aspects of service delivery, respectively, in line with the hierarchical service constructs posited by Brady and Cronin (2001). We also include emotions into the top-level model. It is not immediately obvious how emotions should be coupled with rational drivers in a consumer behavior model. For example, it might be the case that emotion evaluations precede cognitive evaluations, or they might be developed simultaneously. Zeelenberg and Pieters (2006) review the emotions literature and conclude that the most defensible conceptualization places cognitions (thoughts) and emotions (feelings) on the same level (see also Roberts 2014).

The constructs of store choice, value, emotions, quality, performance, reputation, and price are all high-level constructs in our model. In addition, we need to include specific emotions and the process subattributes for performance, reputation, and price. Assessing the relative importance of these affective and cognitive dimensions is critical to developing an appropriate advertising message and to enabling service design that most efficiently improves overall store value (Rust and Zahorik 1993).

Previous researchers have handled the demands of gauging the importance of global and micro attributes[5] with a sequence of regression models, first at the global level, followed by a series of models at the microlevel (see, e.g., Danaher and Mattsson 1994), or by using a LISREL approach to modeling multidimensional, hierarchical constructs (e.g., Brady and Cronin 2001). In this study, however, we use a Bayesian hierarchical model to conceptually "integrate" all of the layers of the conceptual model in a one-stage estimation. Using this approach for so many model layers and also including evaluations of emotions is new to the service quality literature.

The conceptual model in Figure 1 is easily translated into a series of linear models linked by a multivariate

[4] This was partially to reduce respondent fatigue. In subsequent surveys, the questionnaire was shortened, enabling respondent evaluation of all three major stores in the market.

[5] Note that the subattributes in Figure 1 have been somewhat disguised for commercial reasons. The flavor of the results and the management implications that flow from them are not altered by this change.

normal distribution for the error terms and estimated in a Bayesian framework. Normally we would write out these equations in detail, but in our case some of these equations are explicitly mentioned in two patents owned by Forethought Research that cover their Thoughts and Feelings methodology. To keep within the requirements of these patents and simultaneously comply with the *Marketing Science* Replication and Disclosure Policy, which requires Web posting the computer code for the mathematical model, we do not reveal the exact equations used in our model. We are also not able to discuss inferences from these equations, such as model fit and parameter estimates.

3. Model Implementation

We implement our model by developing measurement instruments for cognitions, feelings, utility, and choice. We then address sample design and model estimation.

Qualitative research in early 2011 showed that the primary rational driver related to discount department store patronage was the shopper's desire to "live within one's means." Focus groups and modeling also indicated that EDLPs were preferred by regular discount department store shoppers over discount cycles because they assisted in that process. This was contrary to a category-wide assumption that the shopper's primary motivation was to find a bargain. Preliminary research found that the target market felt comfortable shopping in discount department stores and that the key explanatory emotions were shame, anxiety, and pride. Further probing revealed that the comfort obtained in a discount department store came from a sense of pride due to their judicious and shrewd shopping decisions enabling the family to stay within its budget. Respondents spoke of the anxiety they felt arising from indulging, and thereby failing to live within their means.

3.1. Cognitions, Utility, and Behavioral Intention Measure Development

Elicitation of measures used for the cognitive part of the choice model followed standard procedures. We used the substantial collection of past Kmart shopper insights, focus groups, industry magazines, and journals to determine important store features and perceptual attributes, as indicated in Figure 1. Attribute levels were elicited on a semantically anchored 11-point scale, and presentation was randomized (see Web Appendix 4 for details of their operationalization). Outcome measures were also collected on an 11-point scale. To fit the model, perceptions were collected on Kmart's closest competitors as well.

3.2. Eliciting Emotional Reactions

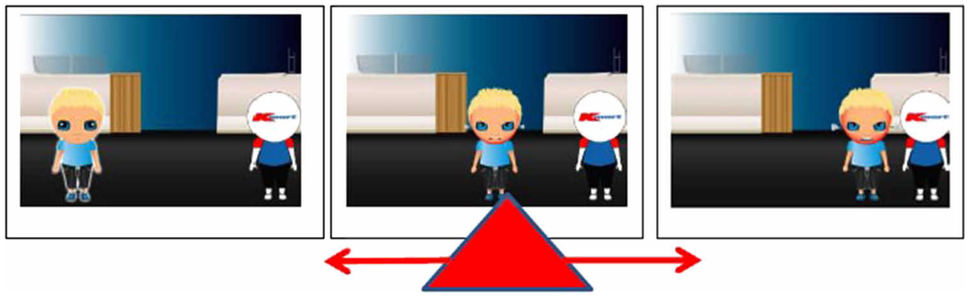
Bagozzi et al. (1999) call for more research on emotions measurement as a precursor to a better understanding of their role in the decision-making process. Similarly, Pham (1998, p. 156) sees the study of emotions as a useful bridge between "the overly cold literature on consumer decision making and the growing literature on hot consumer behavior." Because feelings are generally believed to occur at a precognitive stage of evaluation (Zajonc 1984), it is difficult to elicit them without forcing the respondent into a thinking mode. There are three major traditions in measuring emotions: direct elicitation, physiological and neuroscience measures, and indirectly using techniques such as metaphors and emoticons (Mauss and Robinson 2009, Roberts 2014). Direct elicitation has the problem of engaging cognitive effort and thus providing a filtered view of emotions, whereas physiological approaches tend to be limited in the number of emotions they can identify and are often cumbersome and expensive. For that reason, we decided to use metaphors to elicit respondent emotions.

In terms of the number of emotions to consider, researchers vary from suggesting two (e.g., Watson et al. 1988) to 97 or more (Richins 1997). We were drawn to Laros and Steenkamp's (2005) argument for an intermediate level of measurement as being on the efficient frontier of diagnosticity and parsimony. Given the testing and validation of their four positive and four negative emotions (and their demonstrated nested relationship to both finer and coarser classifications), we adopt their identified emotions of happiness, love, pride, contentment, anger, sadness, anxiety, and shame. In addition, we add a neutral-valenced emotion, surprise.

Having selected the verbal representations of the emotions that we believe will be influential in choice, we developed stimuli to represent them to respondents while evoking minimal cognitive engagement in respondents' response to them. We did that by the use of animated avatars; figures designed to enable subjects to automatically register their reaction to a stimulus (be it a brand name, TV commercial, or other marketing material) using a sliding scale, with minimal cognitive interference. Kovecses (2000) suggests that such avatars relate to primary emotions. For example, the emotional experience of love is often correlated with a physical experience of warmth, a metaphorical concept which for most people becomes embedded within the neural pathways of the brain at a very early stage in life.

Considerable effort went into the design of these avatars and the testing of them for convergent and discriminant validity, as well as reliability (see Web Appendices 3 and 5). An example of three states of transition for the Emotion "anger" is provided in Figure 2, and a practical example may be seen at http://implicitfeelingsdemo.com/wix/p62516646.aspx.

Figure 2 Example of Three Frames of an Animated Avatar Representing "Anger"



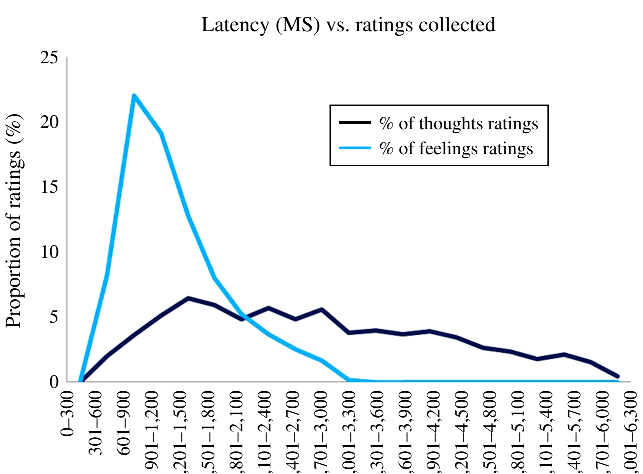
Using the animated avatars, the respondent sees different levels of the emotion as she moves the cursor from left to right (and back), which means that the measurement of her reaction to a set of frames requires a minimum level of cognitive engagement from her. When the avatar is in a position with which she feels comfortable, the respondent simply clicks the mouse. This form of elicitation reduces the chances of cognitive conditioning of responses.

3.2.1. Validation and Testing. The scales were validated in six studies, across five industries, using approximately 4,500 respondents. Results indicated that the animated, nonverbal scales were effective in capturing respondents' feelings. No significant differences were found between those who saw the feelings with labels and those that had no labels revealed to them.

Nomological validity. The question obviously arises as to the degree to which we captured emotions directly or if respondents thought about and then consciously recalled their emotions. (Note that the latter is not ruinous, and is the most popular form of eliciting emotions. However, the less measured emotions are confounded with cognitive appraisals, the greater will be our ability to identify any incremental explanatory power.) The most recognized way to test this is by the use of response latencies (e.g., Olofsson et al. 2008). Pham et al. (2001) suggest that emotions should be able to be elicited faster than cognitions. We compare the response latencies of the two sets of measures, cognitive and emotional, in Figure 3.

An examination of the response latencies represented on the horizontal axis in milliseconds shows that by the end of three seconds (3,000 milliseconds), 85% of all feelings responses have been reported, whereas less than half of the cognitions have been. The median time for reporting feelings is well under one second, whereas for cognitions it is over three seconds. This gives us confidence that cognitive processing is at a minimum using this approach.

Figure 3 Comparison of Response Latencies (Response Times) for Thoughts and Feelings



3.3. Sample and Questionnaire Design

In this paper, we report on the data collected in the first two survey waves (June 2011 and June 2012, with sample sizes 476 and 759, respectively). Respondents were recruited from a large online panel of 181,000 people, completing a web-based survey lasting approximately 20 minutes. The target market for the study was individuals age 18 to 64 who had visited a discount department store in the last three months. The sample was drawn randomly with demographic stratification by age, gender, and geographical location. For descriptive statistics, see Web Appendix 4.

The objective of the first wave was to establish a baseline and to guide creative and service design. The second was to gauge the campaign's effectiveness a year later. In a further piece of research, two months after Kmart's new commercial launch ("1,000 Mums") and Big W's response ("Get It for Less"), 223 respondents evaluated both Kmart and Big W immediately after being exposed to both commercials to validate the laboratory testing of the Kmart TVC (television commercial).

4. Results from Baseline Calibration

The baseline study revealed that Kmart and Big W received broadly similar responses from an emotional perspective (Table 1, Kmart and Big W levels in June 2011), with neither of them occupying a favorable

Table 1 Average Levels of Kmart and Big W Performance on Each Emotion and Cognition Variable in June 2011 and June 2012

Model for likelihood to choose store	Average level June 2011		Average level June 2012	
	Kmart	Big W	Kmart	Big W
Surprise	0.66	0.48	0.71	0.54
Happiness	0.06	0.07	0.33	0.14
Love	−0.30	0.19	−0.04	−0.23
Pride	0.06	0.01	0.11	−0.06
Contentment	−0.38	−0.40	−0.19	−0.30
Anger	−0.30	−0.32	−0.13	−0.17
Sadness	−0.70	−0.80	−0.57	−0.50
Anxiety	−0.59	−0.68	−0.42	−0.36
Shame	−0.47	−0.90	−0.36	−0.34
Value (see Table 2)	7.29	7.42	7.52	7.40

Table 2 Average Levels of Kmart and Big W Performance on Each Value and Quality Variable in June 2011 and June 2012

	Average level June 2011		Average level June 2012	
	Kmart	Big W	Kmart	Big W
Value model				
Quality	7.47	7.60	7.33	7.40
Price	7.47	7.58	7.98	7.35
Quality model (see Table 3)				
Performance	7.38	7.54	7.50	7.65
Reputation	7.69	7.79	7.58	7.41

space. In terms of cognitive drivers (levels in June 2011 in Tables 2 and 3), we can see that Big W does have some advantages.

5. Marketing Intervention

Section 2 describes our model of consumer behavior and §3 presents the measures, fieldwork, and estimation techniques used to calibrate it. In this section we indicate how the insights from applying the baseline model described in §4 guided design of the marketing stimuli. We believe this to be one of the major strengths of this methodology. Often the potential benefit of marketing science models is limited by a disconnect between their insights and the actions that should emerge as a result. In this application, we used a systematic process to translate market analysis insights into specific marketing activity. Action was required at three levels: the product, the communications, and the service delivery. The research influenced each of these.

Forethought Research recommended that Kmart focus on the cognitive drivers of "A store I feel comfortable in," "A store I believe in," and "Always low prices," as key leverage points within the performance, reputation, and price domains of brand, respectively. Large performance deficits for Kmart on these dimensions made them logical choices as primary points of focus. From an emotions perspective, we recommended that

Table 3 Average Levels for Kmart and Big W on Each Performance, Reputation, and Price Variable in June 2011 and June 2012

	Average level June 2011		Average level June 2012	
	Kmart	Big W	Kmart	Big W
Performance model				
Available help	5.60	5.82	6.03	5.86
Cheerful staff	6.55	6.68	6.75	6.62
Low waiting times	6.20	6.28	6.62	6.48
Store I feel comfortable in	7.58	7.83	7.76	7.61
Products are on shelves	6.85	7.13	7.20	7.25
Good shelf layouts	7.09	7.39	7.40	7.28
Products that last	6.80	7.00	6.91	7.06
Pleasing products	7.18	7.32	7.31	7.29
Good location	7.10	6.91	7.11	6.81
Excellent opening hours	8.15	7.86	8.18	7.66
Accepts products back	7.57	7.58	7.76	7.54
Rewards me as a customer	6.05	6.13	6.60	6.24
Reputation model				
Many types of products	7.50	7.74	7.67	7.73
Good brands	6.76	7.02	7.06	7.25
A store for people like me	7.52	7.68	7.63	7.55
Family oriented	7.81	7.97	8.10	8.01
A store I believe in	7.30	7.47	7.37	7.43
Fun to look around	7.59	7.86	7.76	7.76
Price model				
Good promotions	7.48	7.44	7.78	7.51
Low catalog prices	7.23	7.26	7.45	7.34
Easy to understand prices	7.37	7.44	7.81	7.42
Always low prices	7.49	7.63	8.02	7.58
Will beat competitors	6.58	6.67	7.09	6.99

Kmart aim to increase three specific positive emotional drivers and reduce two negative ones.[6]

5.1. Product Refinement

By the time this project started, many of the requisite product strategies had already been implemented. The product range had been severely pruned (improving economies and turns, and reducing stockouts), the chain had moved to EDLPs (eliminating uncertainty as to how far a consumer's budget would go), and the stores had been remodeled (greatly increasing their ambience). Further refinements were necessary to ensure consistency between the proposed message, service delivery, and products that were available in the store. This included having keenly priced items of good quality available across a range of key categories.

5.2. Development of Advertising Material

Market research insights were translated into managerial action by the use of structured workshops including the research team, advertising agency, and Kmart executives. The format of the workshops used to identify ideas, actions, and behaviors associated with different feelings, and design content based on them, is illustrated in Web Appendix 6.

[6] For reasons of commercial confidentiality, the specific emotional targets are not explicitly identified.

Kmart management agreed that the objective of the creative would be to reveal the pride of living within one's means and reducing the anxiety and shame associated with being dependent on low prices to "make ends meet." Finding good value at Kmart could be a sensible and socially rewarding thing to do. The creative brief captured the rational driver "a store I feel comfortable in" interpreted as "living within my means" and the selected emotions. The workshops developed the idea of a social gathering in-store to discover and rejoice in great value. The subsequent commercial, "1,000 Mums"[7] was launched on August 2, 2011.

Kmart and Big W had a long history of mirroring each other's campaigns, and in late August, Big W aired its response TVC, "Get It for Less."[8] This advertisement is interesting in that it mimics many of the cognitive drivers in Kmart's campaign, but none of the emotional ones.

By tracking the performance of the ads on the key drivers of brand choice and their levels after the TVC launch, the research delivered Kmart timely, actionable insights for media planning and inventory management forecasts.

5.3. Service Delivery

The final element of the marketing intervention was ensuring that effective communications were supported by consistent delivery. To achieve this, Kmart made an extensive investment in its store managers, including instituting a two-year training program. Above all, the emphasis was on ensuring that the prescribed store feel was supported by activities on the shop floor.

6. Results of the Repositioning Strategy

We first review the results that followed the new campaign at the individual level, and then examine the market-level effects. Finally, we undertake a market-level analysis which suggests that the improved sales results are consistent with the advertising campaign timing.

6.1. Market Testing of "1,000 Mums" Television Commercial

Two months after the Kmart advertising campaign was launched, market research was conducted to validate the prelaunch calibration of Kmart's "1,000 Mums" and to establish the effectiveness of Big W's "Get It for Less" response. Figure 4 shows the emotional profile generated for Kmart and Big W on the Feelings dimensions after the "1,000 Mums" and "Get It for Less" commercials.

On a purely rational assessment, the two creative campaigns were similar. Both took a range of common household purchases and showed competitive pricing. However, the Kmart campaign had set out to manage negative emotions (anxiety and shame) associated with discount department stores and to elicit positive ones. It largely achieved that, in contrast with the Big W campaign which appears to have activated negative feelings. These differences were also reflected in lower incidence of predicted store choice.

6.2. Changes in Emotions, Beliefs, and Attitudes from June 2011 to 2012

One year after the baseline survey, Forethought Research conducted a complete model recalibration to reassess competitive positions and update the model of brand choice, given the activity in the marketplace since the benchmark calibration. The last two columns of Tables 1–3 show the levels of emotions, perceptions and higher-tier constructs in this second wave. They demonstrate that, with the aid of the "1,000 Mums" ad, Kmart had successfully closed the gap on some of the key emotional levers, and on others it had managed to surpass Big W. Kmart's performance on all emotions had improved, whereas the story for Big W was mixed. The increase in Kmart's scores on the chosen cognitive drivers was statistically significant.

Whereas the campaign led to substantial shifts in the levels of both affective and cognitive attributes that drive store choice, it is interesting that their relative importance shifted somewhat too. "Pride" was now the single most important positive emotion in the category, whereas "love" had declined. "Anxiety" was now less critical compared to "shame" and "anger." The performance and price-related thought attributes chosen earlier were still among the most important. However, within the reputation attributes, "A store I believe in" was now more salient in the category, much more so than "A store for people like me," and second only to "Always low prices" (a category prerequisite on which Kmart had now achieved parity with Big W). The insights derived from these studies were incorporated into the design of a follow-up campaign, entitled "Bom Bom."[9]

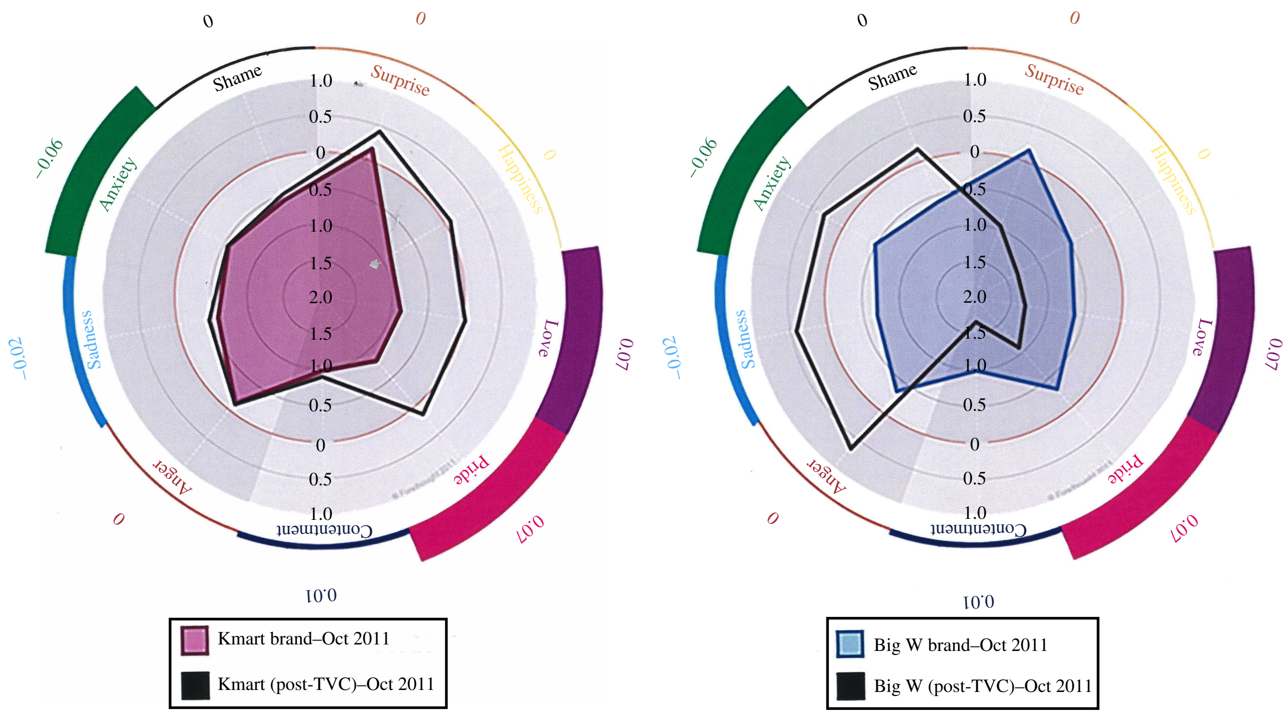
Table 1 shows the change in emotional responses to the Kmart brand during the year in which "1,000 Mums" was on air. This table illustrates the emotion score of each brand (mean corrected for each respondent's initial emotion) for each of the nine core emotions. The Big W commercial was unable to generate as favorable a response as the Kmart commercial on emotions such as happiness, love, and pride. The same can be said of the higher-level thought perceptions in Table 2 and the lower-level process perceptions used to drive specific activities in Table 3. Kmart is close to establishing a

[7] See http://www.youtube.com/watch?v=yPAfA84A290.

[8] See http://www.youtube.com/watch?v=sJzRS_LfalU.

[9] See http://www.youtube.com/watch?v=7FodcqwbLYg.

Figure 4 Pre- and Post-TVC Exposure Measures of Emotions for Kmart and Big W



point of parity on almost all attributes on which it does not enjoy a point of difference (Keller 2000).

The recommendation arising from the first round of modeling in June 2011 was that Kmart should focus on three thought drivers—"A store I feel comfortable in," "A store for people like me," and "Always low prices." As illustrated in Table 3, by June 2012, after the "1,000 Mums" campaign and complementary in-store initiatives, Kmart made a significant improvement in brand perceptions.

6.3. Market-Level Impact

The improvements identified by market research were also reflected in the aggregate-level results. Compared with store visit levels before the campaign, total annual visits increased by 20% over the next two and a half years, whereas the number of items sold increased by 42%. In addition, in the six months leading to December 31, 2011, Kmart's customer numbers rose by 3 million and its revenues by $25 million, as reported in the *Australian Financial Review* (Mitchell 2012).

We were able to predict changes in the probability of choice in the market given the change in brand perceptions. The June 2011 results describe the consumer decision process before the launch of the "1,000 Mums" campaign, whereas those of 2012 refer to the scenario following the campaign. Kmart's predicted market share increased dramatically, whereas that of Big W stagnated, despite a comparably large advertising expenditure. Confidential syndicated industry figures corroborate this positive change.

Table 4 Market Outcomes

	June 2011 probability of choice (%)	June 2012 probability of choice (%)	June 2013 probability of choice (%)	June 2011 EBIT (A$ M)	June 2012 EBIT (A$ M)
Kmart	36	40	41	204[a]	266[a]
Target	29	23	24	280[a]	244[a]
Big W	35	37	35	177.0[b]	178.4[b]

Note. EBIT, earnings before interest and tax.
[a]Data are from Wesfarmers 2011 and 2012 full year reports (http://www.wesfarmers.com.au/investors/reports-results-presentations.html). The 2012 figure includes a $40 million restructure provision.
[b]Data are from Woolworths 2011 and 2012 annual reports (http://www.woolworthslimited.com.au/page/Invest_In_Us/Reports/Reports/).

Table 4 also contains official reports of financial data coinciding with the research period. Over a full 12 months there was an earnings growth of 30.4% versus a growth of only 0.3% the previous year. Meanwhile, Big W grew by just 0.8% during the same period, less than inflation.

6.4. Modeling Advertising Effectiveness for Kmart

In this section, we develop a model to evaluate the association between Kmart's advertising and store visits. Recall that during the time of this study, Kmart was transitioning to EDLPs from high–low pricing, so that dollar sales (relative to units) might well be suppressed by lower item pricing. Consequently, a better measure of advertising effectiveness in our case is store visits, which Bell et al. (1998) show is of vital importance to retailers.

6.4.1. Model Relating Marketing Effort to Store Visits. Our model includes Kmart's and Big W's advertising, as well as price and seasonality (Blattberg et al. 1995). We require a complete model relating all observed marketing variables to store visits. In our case, we have 51 periods of four weekly store visits to Kmart. We follow Danaher et al. (2008) using a "log-log model" defined as follows:

$$\log(\mathrm{SV}_t) = \alpha + \beta^{\mathrm{Price}} \log(\mathrm{Price}_t) + \beta^{\mathrm{Adv}} \log(\mathrm{Adv}_t) + \sum_{k=1}^{K} \beta_k \log(X_{kt}) + u_t \quad (1)$$

where SV_t is the number of store visits in time period t and Price_t and Adv_t are measures of price and advertising in the same period. The covariates, X_{kt}, are additional factors related to store visits, such as the stock-take sale, lead up to Christmas, and post-Christmas sales. Web Appendix 7 describes how we accounted for serial autocorrelation, endogeneity, carry-over effects, and serial correlation.

6.4.2. Operationalizing the Advertising Model. As mentioned above, we have 51 four weekly store visit observations for the period 2010–2013. In addition to this, we have the number of items sold in each period and the dollar sales, enabling us to calculate the average price per item sold, which is our measure of Price_t. Since the "1,000 Mums" campaign is just for television, our measure of Adv_t is the dollar spend on TV for Kmart in each period. Kmart also advertises in newspapers, magazines, and on the radio and Internet, so we combine the amount spent on these other media into another covariate. To capture competitive advertising effects from Big W, we also include the amount spent on TV advertising by Big W. Finally, we have dummy variables for the midyear stock-take sale, the lead up to Christmas, and the annual Boxing Day/New Year sale, which begins the day after Christmas, all of which are important events for Kmart and, indeed, for all discount retailers in Australia.

The "1,000 Mums" campaign and its follow-up "Bom Bom" campaign were launched, respectively, in August 2011 and March 2013. We want to see if there are additional advertising effects associated *specifically* with these campaigns, over and above the usual TV advertising effects for Kmart. This can be achieved by using a change-point model where we define two additional advertising Adstock covariates, defined as follows:

$$AS_t^{1{,}000\_\mathrm{Mums}} = \begin{cases} AS_t & \text{for } t \text{ between Aug 2011 and Feb 2013,} \\ 0 & \text{otherwise,} \end{cases}$$

$$AS_t^{\mathrm{Bom\_Bom}} = \begin{cases} AS_t & \text{for } t \text{ between Mar 2013 and Dec 2013,} \\ 0 & \text{otherwise.} \end{cases}$$

Table 5 **Parameter Estimates for Ad Effectiveness Model**

Parameter	Estimate	Std error	t-statistic	p-value
Intercept	16.1702	0.1523	106.20	0.000
Price	−0.1871	0.0707	−2.65	0.012
TV advertising—Kmart	0.0083	0.0038	2.17	0.036
Advertising—1,000 Mums	0.0046	0.0022	2.05	0.047
Advertising—Bom Bom	0.0093	0.0032	2.88	0.006
Other advertising—Kmart	0.0147	0.0075	1.96	0.057
TV advertising—Big W	0.0036	0.0024	1.48	0.148
Stock-take sale	0.0766	0.0219	3.49	0.000
Christmas period	0.1598	0.0205	7.78	0.000
Boxing day/New Year sale	0.4608	0.0238	19.35	0.000
$\hat{\rho}$	0.2452	0.1716	1.43	0.161

To clarify, the parameter β^{Adv} in Equation (1) captures the effectiveness of Kmart's TV advertising irrespective of the content of the TV commercials. By including the parameters $\beta^{1{,}000\_\mathrm{Mums}}$ and $\beta^{\mathrm{Bom\_Bom}}$, we are testing to see whether these campaigns significantly enhance the usual effectiveness of Kmart's television advertising.

Table 5 gives the parameter estimates for the advertising effectiveness model. We note first that the effect of price is significant and negative, as expected. The effect of the midyear stock-take sale and Boxing Day/New Year sales, and the lead-up to Christmas are also very pronounced, generating significantly increased store visits.

Our primary interest centers on advertising effects. Kmart's TV advertising has a statistically significant influence on store visits, with an elasticity of 0.0083. Furthermore, for the period when the "1,000 Mums" campaign was broadcast, there was a statistically significant enhancement in the advertising elasticity, resulting in a total elasticity of $0.0083 + 0.0046 = 0.0129$. The same thing occurred for the subsequent "Bom Bom" campaign, which further enhanced Kmart's TV advertising effectiveness. The effect of Kmart's advertising in other media is significant at the 10% level. Although Big W retaliated against the "1,000 Mums" campaign with a new TV commercial launched shortly after August 2011, we see its commercial had no significant effect on Kmart store visits.

7. Transportability

The modeling approach applied in the case of Kmart has been used across many other organizations in both business-to-business and consumer markets. It has been applied in the United States, Australia, Europe, and Asia. See Web Appendix 8 for a list of the categories and brands for which it has been used. The methodology has been applied for media mix decisions, for pre- and posttesting of communication, and for brand assessment.

8. Summary

This research was initiated to provide Kmart with actionable insights with which to grow its market share in the highly competitive discount department store category. We approached this business objective by identifying the cognitive and affective drivers of store choice. Brand tracking was augmented with studies to assess advertising effectiveness to inform communications strategy and to monitor progress toward business objectives. Conducting market research to direct managerial action is not new, nor is its role in tracking performance against plan and suggesting adaptive strategies. As outlined in Web Appendix 2, the measurement of emotions in industry is not new either. Where we believe that we make a contribution is by developing, validating, and applying a cost-effective, multidimensional method to incorporate consumers' affective reactions to the brand into a model of purchase likelihood, and designing and calibrating marketing stimuli (in particular, advertising) using the same methodology.

By the incorporation of emotions into our model of store choice, we were able to improve model fit and could also be much more prescriptive to management as to how it could drive store visits and increase customer satisfaction together with its marketplace and financial performance. Specifically, the research identified the emotional and cognitive drivers that provided the greatest leverage for which Kmart had the greatest deficit relative to Big W. It also focused advertising creative to address those drivers, tested different versions of the creative, and tracked its progress in the marketplace.

Supplemental Material

Supplemental material to this paper is available at http://dx.doi.org/10.1287/mksc.2015.0954.

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References

Bagozzi RP, Gopinath M, Nyer PU (1999) The role of emotions in marketing. *J. Acad. Marketing Sci.* 27(2):184–206.

Bell DR, Ho T-H, Tang CS (1998) Determining where to shop: Fixed and variable costs of shopping. *J. Marketing Res.* 35(3): 352–369.

Blattberg RC, Briesch R, Fox EJ (1995) How promotions work. *Marketing Sci.* 14(3-suppl):G122–G132.

Brady M, Cronin J (2001) Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *J. Marketing* 65(3):34–49.

Danaher PJ, Mattsson J (1994) Customer satisfaction during the service delivery process. *Eur. J. Marketing* 28(5):5–16.

Danaher PJ, Bonfrer A, Dhar S (2008) The effect of competitive advertising interference on sales for packaged goods. *J. Marketing Res.* 45(2):211–225.

Danaher P, Roberts J, Roberts K, Simpson A (2011) Practice prize paper—Applying a dynamic model of consumer choice to guide brand development at Jetstar Airways. *Marketing Sci.* 30(4):586–594.

Gale B (1994) *Managing Customer Value* (Free Press, New York).

Harper J (2013) Kmart chief Guy Russo is a man for all seasons. *Herald Sun* (December 24). Accessed September 26, 2015, http://www.heraldsun.com.au/business/kmart-chief-guy-russo-is-a-man-for-all-seasons/story-fni0dcne-1226789086424.

Keller KL (2000) The brand report card. *Harvard Bus. Rev.* 78(1): 147–158.

Kovecses Z (2000) *Metaphor and Emotion—Language, Culture, and Body in Human Feeling* (Cambridge University Press, Cambridge, UK).

Laros FJM, Steenkamp JB (2005) Emotions in consumer behavior: A hierarchical approach. *J. Bus. Res.* 58(1):1437–1445.

Mauss IB, Robinson MD (2009) Measures of emotion: A review. *Cognition Emotion* 23(2):209–237.

Mitchell S (2012) Kmart, Target duel at head of pack. *Australian Financial Rev.* (February 3), 40.

Olofsson J, Nordin S, Sequeira H, Polich J (2008) Affective picture processing: An integrative review of ERP findings. *Biol. Psych.* 77(3):247–265.

Pham M, Cohen J, Pracejus J, Hughes GD (2001) Affect monitoring and the primacy of feelings in judgment. *J. Consumer Res.* 28(2):167–188.

Pham MT (1998) Representativeness, relevance, and the use of feelings in decision making. *J. Consumer Res.* 25(2):144–159.

Richins ML (1997) Measuring emotions in the consumption experience. *J. Consumer Res.* 24(2):127–146.

Roberts J (2014) A note on calibrating the role of emotions in evaluation and choice. Working paper, University of New South Wales, Sydney, Australia.

Rossi PE, Allenby GM (2003) Bayesian statistics and marketing. *Marketing Sci.* 22(3):304–328.

Rust R, Zahorik A (1993) Customer satisfaction, customer retention and market share. *J. Retailing* 69(2):193–215.

Watson D, Clark LA, Tellegen A (1988) Development and validation of brief measures of positive and negative affect: The PANAS scales. *J. Personality Soc. Psych.* 54(6):1063–1070.

Williams P (2014) Emotions and consumer behavior. *J. Consumer Res.* 40(5):viii–xi.

Zajonc RB (1984) On the primacy of affect. *Amer. Psych.* 39(2):117–122.

Zeelenberg M, Pieters R (2006) Feeling is for doing: A pragmatic approach to the study of emotions in economic behavior. De Cremer D, Zeelenberg M, Murnighan JK, eds. *Social Psychology and Economics* (Lawrence Erlbaum, Mahwah, NJ), 117–137.

Zhou K, Brown J, Dev C (2009) Market orientation, competitive advantage, and performance: A demand-based perspective. *J. Bus. Res.* 62(11):1063–1070.