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Top 10 reasons to be an AMSRS member

1. Professional standing & credibility
   Membership of the Society brings you into the body of the profession and is a sign to others that you take your role as a market and/or social research professional seriously. Full members can use the postnominals MMSRS and all members can use the pictured Member Mark to promote their membership of the Society.

2. Member discounts for conferences, courses, seminars, webinars & insurance
   AMSRS members receive substantial discounts to Society and affiliated association events. AMSRS members also receive significant insurance discounts through our insurance partner Parmia.

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   AMSRS is committed to protecting the interests of the Profession by promoting the use of market and social research to government. AMSRS works with AMSRO on this through the Research Industry Council of Australia. The AMSRS also represents the profession when it is threatened by legislation, ill-informed comment or by the unethical practices of others.

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MARKET & SOCIAL RESEARCH

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AMSRS recognises the contribution of Associate Professor David Bednall and Deakin University.
Farewell and Thanks

This is the final issue of our journal to be published by AMSRS. The Society has been one of only two professional market research societies to maintain a journal with refereed research papers. But now that has to end. Fundamentally a journal can only exist with submissions and these have been disappearing. The industry itself, with some most honourable exceptions, was never strong in producing many papers. Thus the journal largely relied on academic submissions. In recent times, academic journals have been rated on various ranking lists. The most relevant list, published by the Australian Business Deans Council, rates this Journal as a “C”. Unfortunately, such is the competition for research status that universities want people to publish in “A” journals or above, though a smattering of “B” journals is probably acceptable. “C” publications are to be discounted if not punished in this system. Although we tried to get ABDC to raise the journal ranking to “B”, this was not accepted.

A more prosaic point to make is that the developments in the industry and in its research techniques are now an international phenomenon. The need for local journals, especially the paper based ones that sit on shelves, has diminished drastically. Many alternatives are available to the industry. The American Marketing Association runs Elmar, which distributes list of new journal issues on a regular (sometimes daily) basis. (See http://ama-academics.communityzero.com/elmar). Google Scholar now references most journal articles of relevance. Although many of these articles are from journals that sit behind a pay wall, direct access is often possible from the Google Scholar citation. Those who work with universities usually have access to the full range of journals on every topic of possible interest to market researchers. So team up with universities, enrol in a course or become an Honorary Research Fellow and reap the benefits of access to the world’s powerhouses of information. Of course Research News is of benefit to Australian members and it will now take a broader role in acquainting AMSRS and MRSNZ members and others with developments in research methods. Internationally papers published by Esomar and industry articles in a magazine like Quirk’s Marketing Research Review provide plenty of insights into commercial and methodological developments. So although the end is sad, we can all move on!

I pay tribute to the previous editors, those submitting to the journal, the willing reviewers and to the advisory board.

Based on a list prepared by Les Johnson in 1996, the following were the editors of this journal and its predecessors.

<table>
<thead>
<tr>
<th>Journal</th>
<th>Editor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arthur Meadows [1970-1975]</td>
</tr>
<tr>
<td>Australian Marketing Researcher</td>
<td>Barry Elliott [1976-1980],</td>
</tr>
<tr>
<td></td>
<td>assisted by John Quirk [1977-1978]</td>
</tr>
<tr>
<td></td>
<td>Max Sutherland [1981-1984]</td>
</tr>
<tr>
<td></td>
<td>John Rossiter [1984-1991]</td>
</tr>
<tr>
<td></td>
<td>David Bednall [2010 -2012]</td>
</tr>
<tr>
<td>Market &amp; Social Research</td>
<td>David Bednall [2013 - 2014]</td>
</tr>
</tbody>
</table>

A final thanks to everyone at AMSRS. Every single person there has supported myself and previous editors. During my time, our Production Manager Julie Regan has been of enormous help while patiently dealing with her willing, but recalcitrant editor. I thank her especially.

David Bednall, Editor.
A consumer-based brand equity study for small market share brands

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ABSTRACT
Brand equity has been defined as the value a brand adds upon a product. In the consumer-based brand equity (CBBE) measurement area, research heavily relies on survey methods to collect responses from consumers. Consumers are often randomly assigned to evaluate either one or a few brands (normally 2 or 3) within a single product category. These measurement approaches tremendously limit the number of brands that can be included in a study and more often than not, the small market share brands do not get a fair chance to be evaluated. The small market share brands are normally the brands at their early stage of product life cycle and they urgently need the information about how they are pictured in consumers' minds, how they perform compared with the leading brands within the same product categories, and about which aspect of CBBE (e.g., brand associations and/or brand loyalty) they can improve to win consumers. In the current research, we propose an adapted many faceted item response theory (MFIRT) method which can accommodate a large amount of missing data (either by design or at random) to facilitate the brand equity comparison among a large number of brands (including the small market share brands) without overburdening the respondents. We use a soft drink data set including 16 brands to demonstrate how our method can be applied to CBBE research.

Keywords: Consumer-based brand equity (CBBE); Many Faceted Item Response Theory; Small market share brands; Flexible data collection design

1. INTRODUCTION
Marketplaces are often crowded with so many brands. Managers and researchers want to track the performance of their own brands and those of competitors using tools including brand equity. Brand equity is viewed as the added value that a brand name endows upon a product as a result of the firm’s marketing efforts and it comprises a large percentage of the total value of many firms. For example, it accounts for 61%, 46% and 37% of the total firm value in apparel, tobacco and food companies respectively (Srivastava & Shocker, 1991). It has also been found to have a positive effect on companies’ future profits and long-term cash flow and is considered to be a sustainable competitive advantage (Bharadwaj, Varadarajan & Fahy, 1993). Researchers have defined brand equity from three major approaches and measured it accordingly: the finance approach (e.g., Simon & Sullivan, 1993; Mahajan, Rao & Srivastava, 1994), the economics approach (e.g., Kamakura & Russell, 1993; Park & Srinivasan, 1994) and the psychological approach (e.g., Aaker, 1991; Keller, 1993). The current research takes the psychological approach to brand equity, which is often called consumer-based brand equity (CBBE). The psychological approach uses consumer survey data and captures consumers’ responses such as brand awareness and loyalty.

The CBBE measurement literature heavily relies on survey methods to collect responses from consumers. Usually consumers are randomly assigned to evaluate one or several brands within a single product category. For example, Yoo and Donthu (2001) collected consumer data for 12 brands: six athletic shoes (Adidas, Asics, LA Gear, Nike, Puma, and Reebok), four films (Agfa, Fuji, Kodak, and Konica), and two colour television sets (Samsung and Sony). Each respondent was randomly assigned to one brand. Netemeyer et al. (2004) investigated multiple brands of colas (Coca-Cola, Pepsi, and RC Cola), toothpaste (Crest, Colgate, and Close-up), athletic shoes (Nike, Reebok, and Fila), and jeans (Levi’s, Lee, and Wrangler) in study 1. Each consumer evaluated several brands within a single product category. These two studies shared one limitation common to brand equity studies: a small number of brands within a single product category have been examined, which are usually well-known brand names.
This limitation has several implications in the real business world. To begin with, there are an overwhelming number of brands in many marketplaces. It is impossible for any single person to evaluate a large number of brands in a single questionnaire at one time. It is beyond his/her cognitive capacity. How about we randomly assign him/her to the brands we are interested in? Before doing that, we should recognise the structure of the market—some brands having big market shares and others having small market shares—and consumers have a varied level of brand familiarity and brand knowledge. Sometimes the random assignment is too simplistic and it may end up with some consumers evaluating brands they are familiar with and others evaluating brands they have less experience with, which may put a question mark on the reliability of their answers in the latter case. Furthermore, the evaluation of CBBE is much more important for small market share brands: where they can improve and where is their unique strength (e.g., in terms of different dimensions of CBBE such as brand awareness and brand associations)? Unfortunately, the random assignment cannot guarantee the small market share brands of getting enough knowledgeable consumers to evaluate them.

In addition, brand managers, especially those in charge of a brand portfolio, need to monitor the CBBE of not only their own brands but also their competitors’ brands. The measurement structure of CBBE (multiple dimensions with multiple items) makes the evaluation of a large number of brands a very difficult job. Respondents have to answer a long list of questions, which can easily overburden the respondents and compromise data quality. Managers need more flexible and practical data collection designs. For example, if managers want to measure six brands on five dimensions with five items nested within each dimension, a fully crossed design requires each consumer to answer 150 questions. If managers want to monitor 10 brands on 10 dimensions, each consumer is going to face 500 questions! Our approach is flexible enough to get reliable CBBE estimates based on a small portion of the fully crossed data set, which means it can accommodate fractional factorial designs and can handle substantial levels of missing data.

The rest of the paper is organised as follows: first, we briefly review the CBBE literature; second, we describe our proposed model; third, we report empirical results for soft drink brands; finally, we discuss the theoretical and managerial implications of our research.

2. CBBE LITERATURE
CBBE and its dimensions have been conceptualised (e.g., Aaker, 1991; Keller, 1993) and empirically estimated (e.g., Yoo & Donthu, 2001; Netemeyer et al., 2004) by researchers and managers since U.S. advertising practitioners coined the term in the early 1980s (Barwise, 1993). Aaker (1991) identified the five components of brand equity as awareness, associations, perceived quality, loyalty, and other proprietary assets such as patents and trademarks. Keller (1993) focused on brand knowledge, including awareness and the unique favorable beliefs (or brand associations). Apart from these two theoretical papers, two of the empirical papers (i.e., Yoo & Donthu, 2001; Netemeyer et al., 2004) drew major interest from both practitioners and academics. Yoo and Donthu (2001) were the first empirically to develop a multi-dimensional scale for CBBE and to test its psychometric properties. They began with four dimensions, namely, brand awareness, brand associations, perceived quality, and brand loyalty, but concluded with three, as brand awareness was not distinguishable from brand associations in their research. Yoo and Donthu’s research filled an important gap in the extant CBBE literature. Netemeyer et al. (2004) identified four core/primary CBBE dimensions: perceived brand quality, perceived brand value for the cost, brand uniqueness, and willingness to pay a price premium. They also identified five types of related brand associations: brand awareness, brand familiarity, brand popularity, organisational associations, and brand-image consistency. In their initial conceptual framework, perceived brand quality, perceived brand value for the cost and brand uniqueness have indirect effects on brand purchase intention and further on brand purchase via willingness to pay a price premium. Related brand associations have direct effect on brand purchase intention and further on brand purchase. Their framework is important in terms of trying to impose a logical (or causal) structure among different dimensions of CBBE. Both Yoo and Donthu’s (2001) and Netemeyer et al.’s (2004) research do not provide a method to facilitate CBBE evaluation across a large number of brands, especially small market share brands.
3. OUR PROPOSED MODEL

Building on the existing research methods in marketing [e.g., Wang & Finn, 2013], we propose a new model to parameterise consumers, brands, the varying nature of measurement instrument [e.g., dimensions and items], and the Likert item response categories as separate terms.

\[ \log \left( \frac{P_{mk}}{P_{mk-1}} \right) = B_b + P_r + D_d + I_i - C_k \]

where \( P_{mk} \) and \( P_{mk-1} \) are the probability of choosing response category \( k \) and \( k-1 \), respectively, on item \( i \) in dimension \( d \) for consumer \( r \) on brand \( b \). \( B_b \) is the brand equity of brand \( b \), \( P_r \) is the criticality of consumer \( r \) (i.e., how easily a consumer will agree with a statement about a brand), \( D_d \) is the threshold of dimension \( d \) and \( I_i \) is the threshold of item \( i \); \( C_k \) is the threshold of category \( k \) relative to category \( k-1 \).

There are several advantages of the proposed model. First, when measuring consumer-based brand equity (CBBE), researchers and managers often make their own selections about dimensions and items. The differences among the measurement instruments make it hard for the studies to be compared and the results cannot be generalised beyond the specific elements of the measurement. In our model, we explicitly model the dimensions \( D_d \) and items \( I_i \) with the nesting relationship recognised. Therefore, it provides the methodology to compare studies with different dimensions and items surveyed. High thresholds for \( I_i \) or \( D_d \) mean it is generally easier for consumers to agree with a specific item or dimension. The estimates of consumers and brands are measurement instrument free. Second, the fact that \( P_r \) and \( B_b \) are two independent terms provides the possibility that different consumers may assess different subsets of brands. Third, we use \( B_b \) to represent the brand level CBBE. Comparing to the existing method of getting the brand level CBBE, the average across consumers, our estimates account for both the measurement instrument variables [i.e., \( D_d \) and \( I_i \)] and the effects of the particular consumers [i.e., \( P_r \)] filling out the survey questions and give us contextually unbiased estimates of the CBBE of brand \( b \).

4. EMPIRICAL EXAMINATION

Data were collected in 2009 from 105 North American undergraduate students, who received course credit for their participation. The students were instructed to select any brands from the list of 16 brands including 7 Up, A and W, Barq’s, Canada Dry, Dr Pepper, Fanta, Coke, Coke Zero, Diet Coke, Diet Pepsi, Mountain Dew, Pepsi Max, Pepsi, PC cola, Jolt, and Sprite, which were available on campus. The frequency varies from 94 (Coke) to 9 (Jolt). Details of the frequency can be found in Table 1.

Table 1 Frequency of Respondents for Soft Drink Study

<table>
<thead>
<tr>
<th>Brand</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke</td>
<td>94</td>
</tr>
<tr>
<td>7 Up</td>
<td>87</td>
</tr>
<tr>
<td>Pepsi</td>
<td>80</td>
</tr>
<tr>
<td>Canada Dry</td>
<td>72</td>
</tr>
<tr>
<td>A &amp; W</td>
<td>70</td>
</tr>
<tr>
<td>Fanta</td>
<td>70</td>
</tr>
<tr>
<td>Sprite</td>
<td>69</td>
</tr>
<tr>
<td>Coke Zero</td>
<td>64</td>
</tr>
<tr>
<td>Mountain Dew</td>
<td>56</td>
</tr>
<tr>
<td>Dr Pepper</td>
<td>54</td>
</tr>
<tr>
<td>Diet Coke</td>
<td>52</td>
</tr>
<tr>
<td>Barq’s</td>
<td>50</td>
</tr>
<tr>
<td>PC Cola</td>
<td>43</td>
</tr>
<tr>
<td>Diet Pepsi</td>
<td>37</td>
</tr>
<tr>
<td>Pepsi Max</td>
<td>18</td>
</tr>
<tr>
<td>Jolt</td>
<td>9</td>
</tr>
</tbody>
</table>

The evaluation instrument consisted of 42 items capturing 9 dimensions [i.e., Current brand awareness, Current perceived quality, Current perceived value for the cost, Current brand associations, Uniqueness, Future price premium, Future brand loyalty, Positive brand emotions, and Negative brand emotions]. The dimensions are chosen to fully cover the dimensions used in recent CBBE research [e.g., Yoo & Donthu, 2001; Netemeyer et al., 2004] and to reflect our own understanding of its measurement (e.g., adding in brand emotions).

All items were positively worded and used a 7-point Likert scale from “strongly disagree” [1] to “strongly agree” [7]. Responses to Negative brand emotions were reverse coded to make them consistent with other measures in terms of the parameter sign [de Jong, Steenkamp & Veldkamp, 2009].

We used a Bayesian modeling approach. A Markov chain Monte Carlo (MCMC) method and a Gibbs sampler were chosen to estimate all parameters.
simultaneously, avoiding the calculation of high-dimensional integrals (Rossi & Allenby, 2003). Bayesian analysis requires the specification of models based on prior distributions for model parameters and hence random samples were simulated from the posterior distribution through simulated Markov chain procedures (Gelman, 2004). To assess the convergence and Monte Carlo variabilities we used two chains with differing starting values and calculated the Gelman-Rubin statistic, as modified by Brooks and Gelman (1998), which compares within- to between-chain variability. The ratio $R = B/W < 1.05$ for all parameter estimates signifies that convergence is attained.

Model identification was attained by imposing necessary constraints. The vectors of brand equity main effects for brands $Bb$ and dimension thresholds $Dd$ summed to zero respectively. Similarly, item thresholds $Ii$ were set to sum to zero within each dimension. Consumer criticality $Pp$ was drawn from a normal distribution with the mean fixed at zero.

**Brand main effects**

MFIRT analysis produces an interval scale estimate of the CBBE for each of the 16 brands. In the current research, the CBBE estimates are called “measures” to differentiate them from original raw responses, which were ordinal. They provide valid comparisons among brands, whereas equal differences between pairs of raw scores do not necessarily imply equal differences in brand equity. This desirable result is one of the advantages of our proposed approach. Another one is that a brand equity measure is also corrected for consumers’ criticality, the thresholds of dimensions and items, and response category usage. Therefore, measures for the CBBE of brands are comparable even if they had been obtained from consumers who differ in terms of criticality or from items (and dimensions) that differ in threshold values.

As shown in Table 2, when comparing the 16 brands, Coke had highest CBBE (.41). Pepsi was the next with CBBE at .29. Jolt was the lowest in the group with CBBE at -.28. The results reflected the brand level CBBE for a particular group of respondents - undergraduate students at a particular North American university. The brand equity estimates of brands are freed from the distributional properties of the specific items that were answered, the particular dimensions involved in a study, and so forth, which

<table>
<thead>
<tr>
<th>Brand</th>
<th>Frequency</th>
<th>Raw Mean</th>
<th>Estimate (our approach)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke</td>
<td>94</td>
<td>4.99</td>
<td>.41</td>
</tr>
<tr>
<td>Pepsi</td>
<td>80</td>
<td>4.84</td>
<td>.29</td>
</tr>
<tr>
<td>Sprite</td>
<td>69</td>
<td>4.65</td>
<td>.22</td>
</tr>
<tr>
<td>A&amp;W</td>
<td>70</td>
<td>4.69</td>
<td>.22</td>
</tr>
<tr>
<td>Canada dry</td>
<td>72</td>
<td>4.79</td>
<td>.19</td>
</tr>
<tr>
<td>Fanta</td>
<td>70</td>
<td>4.51</td>
<td>.19</td>
</tr>
<tr>
<td>7 up</td>
<td>87</td>
<td>4.60</td>
<td>.16</td>
</tr>
<tr>
<td>Coke Zero</td>
<td>64</td>
<td>4.22</td>
<td>.08</td>
</tr>
<tr>
<td>Dr pepper</td>
<td>54</td>
<td>4.25</td>
<td>.07</td>
</tr>
<tr>
<td>Mountain Dew</td>
<td>56</td>
<td>4.24</td>
<td>.04</td>
</tr>
<tr>
<td>Pepsi Max</td>
<td>18</td>
<td>3.93</td>
<td>.01</td>
</tr>
<tr>
<td>Barq’s</td>
<td>50</td>
<td>4.09</td>
<td>-.03</td>
</tr>
<tr>
<td>Diet Coke</td>
<td>52</td>
<td>3.73</td>
<td>-.03</td>
</tr>
<tr>
<td>Diet Pepsi</td>
<td>37</td>
<td>3.76</td>
<td>-.04</td>
</tr>
<tr>
<td>PC cola</td>
<td>43</td>
<td>3.42</td>
<td>-.22</td>
</tr>
<tr>
<td>Jolt</td>
<td>9</td>
<td>3.02</td>
<td>-.28</td>
</tr>
</tbody>
</table>
can facilitate cross-study comparison. These estimates are hypothesised to be invariant across samples from the same population. Moreover, the proposed model separates the parameters for brand, person, dimension and item, which provide managers with the flexibility of using different data collection plans. Full-crossed data collection is no longer necessary and our approach can handle relatively large amounts of “missing data”. The only requirement is that the data collection design needs to provide a connected evaluation structure such as overlapping dimensions and items.

**Measurement instruments**
Dimensions and items differ in their sensitivity to differentiate CBBE of soft drink brands. The higher the threshold, the easier for consumers to agree with the statement. For example, Current brand awareness had a threshold value at .598 whereas Future price premium had a value of -.843. Moreover, in Current brand awareness dimension, “I have an opinion about this brand” had a much lower threshold (-.734) than “I have heard of this brand” (.671).

**Table 3 Analyses of dimensions and items**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Item</th>
<th>Threshold</th>
<th>s.d.</th>
<th>2.5%*</th>
<th>97.5%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current brand awareness</td>
<td>I have heard of this brand.</td>
<td>.598</td>
<td>.010</td>
<td>.579</td>
<td>.617</td>
</tr>
<tr>
<td></td>
<td>I am aware of this brand.</td>
<td>.671</td>
<td>.023</td>
<td>.625</td>
<td>.716</td>
</tr>
<tr>
<td></td>
<td>I am very familiar with this brand.</td>
<td>-.331</td>
<td>.019</td>
<td>-.370</td>
<td>-.294</td>
</tr>
<tr>
<td></td>
<td>I have an opinion about this brand.</td>
<td>-.734</td>
<td>.018</td>
<td>-.770</td>
<td>-.698</td>
</tr>
<tr>
<td></td>
<td>When I think of the product category this brand belongs to, this</td>
<td>.002</td>
<td>.019</td>
<td>-.036</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td>brand is the first comes to mind.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current perceived quality</td>
<td>The likelihood that this brand is reliable is very high.</td>
<td>.059</td>
<td>.018</td>
<td>.023</td>
<td>.096</td>
</tr>
<tr>
<td></td>
<td>The quality of this brand is very high.</td>
<td>-.015</td>
<td>.018</td>
<td>-.051</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>In terms of overall quality, I’d rate this brand high.</td>
<td>-.069</td>
<td>.018</td>
<td>-.104</td>
<td>-.033</td>
</tr>
<tr>
<td></td>
<td>I can always count on this brand for consistent high quality.</td>
<td>-.082</td>
<td>.018</td>
<td>-.120</td>
<td>-.046</td>
</tr>
<tr>
<td></td>
<td>This brand is a quality leader within its product category.</td>
<td>.106</td>
<td>.018</td>
<td>.070</td>
<td>.143</td>
</tr>
<tr>
<td>Current perceived value for the</td>
<td>This brand provides good value for the money.</td>
<td>-.009</td>
<td>.009</td>
<td>-.025</td>
<td>.009</td>
</tr>
<tr>
<td>cost</td>
<td>All things considered (price, time, and effort), this brand is a</td>
<td>.121</td>
<td>.018</td>
<td>.087</td>
<td>.156</td>
</tr>
<tr>
<td></td>
<td>good buy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What I get from this brand is worth the cost.</td>
<td>.147</td>
<td>.018</td>
<td>.112</td>
<td>.183</td>
</tr>
<tr>
<td></td>
<td>When I use this brand, I feel I am getting my money’s worth.</td>
<td>-.024</td>
<td>.018</td>
<td>-.060</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>This brand provides a high value in relation to the price we must</td>
<td>-.228</td>
<td>.018</td>
<td>-.262</td>
<td>-.194</td>
</tr>
<tr>
<td></td>
<td>pay for it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3 Analyses of dimensions and items *(Continued)*

<table>
<thead>
<tr>
<th>Current brand associations</th>
<th>.333</th>
<th>.009</th>
<th>.314</th>
<th>.351</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can quickly recall the symbol or logo of this brand.</td>
<td>-.213</td>
<td>.018</td>
<td>-.249</td>
<td>-.177</td>
</tr>
<tr>
<td>This brand is a very good brand</td>
<td>.518</td>
<td>.020</td>
<td>.477</td>
<td>.558</td>
</tr>
<tr>
<td>This brand is a very nice brand.</td>
<td>-.057</td>
<td>.019</td>
<td>-.094</td>
<td>-.019</td>
</tr>
<tr>
<td>This brand is an extremely likeable brand.</td>
<td>-.087</td>
<td>.018</td>
<td>-.123</td>
<td>-.050</td>
</tr>
<tr>
<td>I have a clear image of the type of person who would use the brand.</td>
<td>-.161</td>
<td>.018</td>
<td>-.198</td>
<td>-.127</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>-.143</td>
<td>.009</td>
<td>-.160</td>
<td>-.126</td>
</tr>
<tr>
<td>This brand is “distinct” from other brands in the same product category.</td>
<td>-.046</td>
<td>.017</td>
<td>-.081</td>
<td>-.012</td>
</tr>
<tr>
<td>This brand is very different from other brands in the same product category.</td>
<td>.028</td>
<td>.018</td>
<td>-.007</td>
<td>.062</td>
</tr>
<tr>
<td>This brand really stands out from other brands in the same product category.</td>
<td>.055</td>
<td>.018</td>
<td>.019</td>
<td>.090</td>
</tr>
<tr>
<td>This brand is “unique” from other brands in the same product category.</td>
<td>-.009</td>
<td>.018</td>
<td>-.045</td>
<td>.026</td>
</tr>
<tr>
<td>This brand is different from competing brands.</td>
<td>-.028</td>
<td>.018</td>
<td>-.063</td>
<td>.007</td>
</tr>
<tr>
<td>Future price premium</td>
<td>-.843</td>
<td>.012</td>
<td>-.866</td>
<td>-.821</td>
</tr>
<tr>
<td>I intend to buy this brand the next time I buy anything from the product category the brand belongs to.</td>
<td>-.014</td>
<td>.017</td>
<td>-.048</td>
<td>.019</td>
</tr>
<tr>
<td>This brand would be my first choice.</td>
<td>.064</td>
<td>.017</td>
<td>.032</td>
<td>.098</td>
</tr>
<tr>
<td>I would buy the brand on the next opportunity.</td>
<td>.063</td>
<td>.017</td>
<td>.030</td>
<td>.096</td>
</tr>
<tr>
<td>I will not buy other brands if this brand is available at the store.</td>
<td>-.113</td>
<td>.017</td>
<td>-.147</td>
<td>-.078</td>
</tr>
<tr>
<td>Positive brand emotions</td>
<td>-.458</td>
<td>.008</td>
<td>-.474</td>
<td>-.441</td>
</tr>
<tr>
<td>Pleasant</td>
<td>-.037</td>
<td>.017</td>
<td>-.072</td>
<td>-.003</td>
</tr>
<tr>
<td>Delight</td>
<td>.074</td>
<td>.018</td>
<td>.039</td>
<td>.108</td>
</tr>
<tr>
<td>Surprise</td>
<td>-.173</td>
<td>.018</td>
<td>-.209</td>
<td>-.139</td>
</tr>
<tr>
<td>Joy</td>
<td>-.220</td>
<td>.019</td>
<td>-.257</td>
<td>-.183</td>
</tr>
<tr>
<td>Relief</td>
<td>.194</td>
<td>.018</td>
<td>.158</td>
<td>.229</td>
</tr>
<tr>
<td>Gratitude</td>
<td>.163</td>
<td>.018</td>
<td>.128</td>
<td>.196</td>
</tr>
<tr>
<td>Negative brand emotions</td>
<td>.933</td>
<td>.012</td>
<td>.909</td>
<td>.956</td>
</tr>
<tr>
<td>Sadness</td>
<td>.100</td>
<td>.021</td>
<td>.059</td>
<td>.143</td>
</tr>
<tr>
<td>Distress</td>
<td>.049</td>
<td>.021</td>
<td>.006</td>
<td>.092</td>
</tr>
<tr>
<td>Frustration</td>
<td>-.084</td>
<td>.020</td>
<td>-.124</td>
<td>-.044</td>
</tr>
<tr>
<td>Disgust</td>
<td>-.065</td>
<td>.020</td>
<td>-.104</td>
<td>-.027</td>
</tr>
</tbody>
</table>

Note: * 2.5% and 97.5% are percentile scores, which can be interpreted as confidence interval.
Consumer main effects

Consumer main effects showed individual differences unrelated to brands. The estimates varied from -1.394 (very critical to any brands) to .834, which more or less followed a normal distribution with a mean at -.002 and a standard deviation at .338. The estimates of consumers can be obtained from the authors.

5. CONCLUSIONS AND CONTRIBUTIONS

The vast majority of consumer goods brands face a daily, bloody battle with their competitors. Managers want to monitor not only their own brands’ performance but also the performance of their competitors’ brands. Consumer-based brand equity (CBBE), as an important evaluation tool, has drawn wide attention from both marketing managers and researchers (e.g., Netemeyer et al., 2004). Usually in CBBE surveys, only well-known brands with big market shares get the chance to be evaluated. There are two reasons behind this: first, not many consumers have experience with the small market share brands; second, consumers have cognitive constraints. If they spend their time evaluating big brands, there is no time left for them to evaluate small brands within a single questionnaire even if they might know or use small brands before. In order to address this limitation, we introduced a many faceted item response theory (MFIRT) model to make use of non-fully crossed sample. It has the potential to accommodate large amounts of “missing data” (compared with a fully crossed data collection design) and it allows for a self-selected brand data collection, which addresses the problem identified in the CBBE research where consumers are forced to evaluate brands they are not familiar with.

This research boosts the managerial relevance for CBBE measurement research and facilitates CBBE comparisons across a relatively large number of brands. The overriding objective of the current research is to translate the manager’s information needs into a set of specific questions that respondents are willing and able to answer. Without a reliable evaluation of the performance of relevant brands (which are always in large numbers) in the market, no strategies can be found. Our proposed method pulls all the information together and lets consumers select the brands they want to evaluate. Consumers with a high cognitive need may evaluate more brands than other consumers who may tire easily and thus evaluate fewer brands. In this way, consumers will be self-paced and self-allocate their time and researchers do not have to worry about the overburdening them.

In addition to the data collection flexibility provided by our research method, we found [1] that brands are differing in terms of their equity and [2] that dimensions and items have different thresholds and not exchangeable. Previous research has to some extent relied on Aaker and Keller’s conceptual frameworks, meaning that at times more than 20 dimensions with multiple items have been proposed for CBBE measurement (e.g., Agarwal & Rao, 1996; Christodoulides & de Chernatony 2010). Researchers and managers have estimated and made inferences about the CBBE of brands based on their own selections of dimensions and items, which made brand comparisons across studies extremely difficult. Our research solved this problem. Specifically, our proposed model can parameterise the equity of brands, individual differences, the varying nature of dimensions and items, and the Likert item response categories as separate terms. The CBBE brand estimates provided by the proposed model are linear interval brand equity measures derived from the observed nonlinear ordinal raw evaluations. The estimates are as statistically independent of the particularities of the data collection design as possible.

Moreover, our research provides a valuable tool for store brands (normally having small market shares) to use and gain insight on how to build their brand equity and compete with national brands. The proposed method can also serve brand managers of well-known brands to better manage their brand portfolios that always include both “superbrands” (“megabrands”/ master brands) but which also include a variety of sub brands targeting niche markets.

There are some limitations of our work. Our data set was small and cross-sectional in nature. Because the purpose of using this data set in our current research project was to demonstrate our method, we think the sample size was adequate in this regard. Moreover, the data set was collected from undergraduate students in North America who fall into the primary target market (who are between the ages of 18 and 24) of soft drink brands (e.g., Nelson et al., 2008). Measurement invariance has not been established across time. Cultures and demographics need to be examined in future research. These restrictive assumptions can be further relaxed in future research.
REFERENCES


### APPENDIX A. DIMENSIONS AND ITEMS USED

<table>
<thead>
<tr>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Brand awareness</strong></td>
<td></td>
</tr>
<tr>
<td>Have you heard of this brand?</td>
<td>Aaker (1996)</td>
</tr>
<tr>
<td>I have an opinion about this brand.</td>
<td></td>
</tr>
<tr>
<td>I am aware of X.</td>
<td>Yoo and Donthu (2001)</td>
</tr>
<tr>
<td>I have an opinion about this brand.</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td>When I think of the product category this brand belongs to, this brand is the first comes to mind.</td>
<td>Villarejo-Ramos and Sanchez-Franco (2005)</td>
</tr>
<tr>
<td><strong>Current perceived quality</strong></td>
<td></td>
</tr>
<tr>
<td>The quality of this brand is very high.</td>
<td>Erdem and Swait (1996)</td>
</tr>
<tr>
<td>In terms of overall quality, I'd rate this brand high.</td>
<td></td>
</tr>
<tr>
<td>I can always count on this brand for consistent high quality.</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td>The likelihood that this brand is reliable is very high.</td>
<td>Villarejo-Ramos and Sanchez-Franco (2005)</td>
</tr>
<tr>
<td><strong>Current perceived value for the cost</strong></td>
<td></td>
</tr>
<tr>
<td>This brand provides good value for the money.</td>
<td>Aaker (1996)</td>
</tr>
<tr>
<td>What I get from this brand is worth the cost.</td>
<td></td>
</tr>
<tr>
<td>All things considered (price, time, and effort), [brand] brand of [product] is a good buy.</td>
<td></td>
</tr>
<tr>
<td>When I use this brand, I feel I am getting my money’s worth.</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td>This brand provides a high value in relation to the price we must pay for it.</td>
<td>Villarejo-Ramos and Sanchez-Franco (2005)</td>
</tr>
<tr>
<td><strong>Current Brand associations</strong></td>
<td></td>
</tr>
<tr>
<td>I have a clear image of the type of person who would use the brand.</td>
<td>Aaker (1996)</td>
</tr>
<tr>
<td>I can quickly recall the symbol or logo of this brand.</td>
<td>Yoo and Donthu (2001)</td>
</tr>
<tr>
<td>This brand is a very good brand.</td>
<td></td>
</tr>
<tr>
<td>This brand is a very nice brand.</td>
<td>Villarejo-Ramos and Sanchez-Franco (2005)</td>
</tr>
<tr>
<td>This brand is an extremely likeable brand.</td>
<td></td>
</tr>
<tr>
<td><strong>Uniqueness</strong></td>
<td></td>
</tr>
<tr>
<td>This brand is different from competing brands.</td>
<td>Aaker (1996)</td>
</tr>
<tr>
<td>This brand is “distinct” from other brands of [product].</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td>This brand really stands out from other brands of [product].</td>
<td></td>
</tr>
<tr>
<td>This brand is very different from other brands of [product].</td>
<td></td>
</tr>
<tr>
<td>This brand is “unique” from other brands of [product].</td>
<td></td>
</tr>
<tr>
<td><strong>Future price premium</strong></td>
<td></td>
</tr>
<tr>
<td>The price of this brand would have to go up quite a bit before I would switch to another brand in the same product category.</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td>I am willing to pay a higher price for this brand than for other brands in the same product category.</td>
<td></td>
</tr>
<tr>
<td>I am willing to pay a lot more for this brand than other brands of in the same product category.</td>
<td></td>
</tr>
<tr>
<td><strong>Future brand loyalty</strong></td>
<td></td>
</tr>
<tr>
<td>I would buy the brand on the next opportunity.</td>
<td>Aaker (1996)</td>
</tr>
<tr>
<td>This brand would be my first choice.</td>
<td>Yoo and Donthu (2001)</td>
</tr>
<tr>
<td>I will not buy other brands if this is available at the store.</td>
<td></td>
</tr>
<tr>
<td>I intend to buy this brand the next time I buy anything from the product category the brand the brand belongs to.</td>
<td>Netemeyer et al. (2004)</td>
</tr>
<tr>
<td><strong>Positive and Negative brand emotions</strong></td>
<td></td>
</tr>
<tr>
<td>Pleasant, delight, surprise, joy, relief, gratitude, sadness, distress, frustration, and disgust.</td>
<td>Roseman (1991)</td>
</tr>
</tbody>
</table>
Why validation is important: an example using the NEP scales

Linda Brennan, RMIT University Vietnam and RMIT University
Wayne Binney, Deakin University
Torgeir Aleti, Victoria University
Lukas Parker, RMIT University Vietnam

ABSTRACT
This paper describes how a widely used and reliable measure can be invalid within the context of its use. The “New Environmental/Ecological Paradigm” (NEP) is widely used as a benchmark for pro-environmental attitudes. However, the NEP was designed to measure the worldview paradigm that exists in the social domain, rather than attitudes that focus on the personal domain. We suggest that the scale may not capture personal attitudes towards the environment; rather, it measures how society relates to the natural environment. We thus outline the important differences between alternative domains such as values, beliefs, attitudes, worldviews and environmental concerns, since the NEP scale has been used to measure all of these concepts. To explore the validity of the NEP scale, we tested two versions of the NEP scale and this provided an indication that the scale was unreliable in these applications. We conclude that reliable but invalid scales are not useful in the marketing and social research space. We present a method of establishing the semantic and face validity of such scales.

Keywords: NEP scale, sustainability, attitudes, environmental behaviour, measurement validity.

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1. INTRODUCTION
Marketing and market researchers are concerned to ensure that their evaluations of human behaviours are both valid and reliable. There are a number of different types of validity and these can be categorised into whether they are formative or prognosticative (Brennan, Voros & Brady 2011). Formative validity consists of the steps taken to ensure that what is measured, 1) actually exists and 2) has adequate theoretical foundation for any testing. This type of validation occurs before data are collected. Prognosticative validity is the assessment of the predictive, descriptive and reflective measures of validity after data are collected (Brennan & Camm 2007). Underpinning the principles of formative validity is the notion of semantic validity: ensuring that the words mean ‘something’ that is transferable from one person to another (Teas & Palan 1997). In order to ensure that meaning is transferred between questioner and responder, there has to be a shared frame of reference and alignment between notional objects (Krippendorf 2007). For example, comparing apples with apples, not apples with oranges. Formative validation of measures results in theoretically meaningful scientific measures to be established as a precursor to prediction. However, it appears that little formative validation is conducted prior to using measures to measure (Brennan & Camm 2007; Brennan, Voros & Brady 2011). This results in reliable but invalid predictions.

To illustrate this case, this paper examines these concerns using the widely-used measure[s] of the New Environmental Paradigm (NEP).

1.1 The NEP in its context of use.
In line with increasing concerns regarding environmental sustainability, research on how consumers’ pro-environmental values, beliefs and attitudes relate to sustainable practices has continued to grow substantially (Antil 1984; Kilbourne & Carlson 2008; Pelton et al. 1993; Best, Henning & Mayerl 2013). A particular stream of work within marketing and environmental psychology has explored how individuals’ values, beliefs and attitudes shape their pro-environmental behaviour (e.g. Garling et al. 2003; Hodgkinson & Innes 2000; McKenzie-Mohr 2000; Sandford 1992). However, only weak links have been found between key latent variables such as attitudes, beliefs or values and actual pro-environmental behaviour (e.g. Scott & Willits 1994; Bamberg & Moser 2007). In most studies, researchers have focused on the effects of these antecedent factors on behavioural intentions rather than behaviour (Milfont & Duckitt 2004, 2010; Stern, Dietz, & Guagnano 1995).

One of the most used measures to assess attitudes towards the environment has been the New Environmental/Ecological Paradigm (NEP) scale, developed by Dunlap and Van Liere (1978) and
Dunlap et al. (2000). However (as will be discussed in more detail later), the NEP scale was originally designed to assess a new paradigm - a worldview of how mankind interacts with the environment - and not to assess individuals’ values or attitudes towards the environment. A worldview, as conceptualised by Dunlap and Van Liere was based on the Kuhnian idea of scientific paradigms (perspectives from which the issue is viewed). However, Dunlap (2008) later referred to the NEP scale as a ‘broad attitude measure’, while also recognising that attitude is a weak predictor of behaviour. As a result, the validity of the NEP scale for measuring individuals’ attitudes, that is, a concept for which it was not initially designed, could be questioned.

Hawcroft and Milfont (2010) have highlighted that the NEP scale has been ‘used and abused’ for over 30 years. As was suggested earlier, this scale is often used as a proxy for individuals’ attitudes towards the environment [EA] (see, for example, Milfont & Duckitt 2004, 2010; Sandford 1992; Scott & Willits 1994; Sidiquea, Lupib, & Joshi 2010; Stern, Dietz, Kalof, & Guagnano 1995; Uittoa & Salorantaa 2010), despite the fact that the original authors did not intend the scale to be used as a proxy for EA [Hawcroft & Milfont 2010]. Dunlap and Van Liere (1978) initially proposed that the scale was designed to indirectly measure people’s endorsement of a particular worldview [paradigm] of environmental concerns i.e. not an attitude]. Although in saying this, they still referred to ‘attitude measurement’ items within the NEP scale, which may have contributed to the confusion. This leads us to question whether the (original) NEP scale with more than 2,000 citations (Google Scholar 2014) is a measure of attitudes (albeit a proxy measure) or the measurement of some sort of a worldview.

2. THEORY

MacInnis (2011) has recently pointed out that theory development is hampered without good construct development and definition. However, in a review of moral responsibility in marketing, Mick (2007) showed that social science definitions necessarily tend towards an endless spiral of ambiguity. Indeed, as Brennan and Camm (2007) illustrate, validity itself has multiple meanings. Social science definitions can reflect conceptual threads linking observations, but cannot ever be context-free [Gabbott & Jevons 2009]. Thus, for a precise, measurable construct to be used in prediction, it needs to have clearly established a priori validities [Borsboom 2005; Cook & Beckman 2006] within the context of prediction. While there are various types of validity used in the domain, those most applicable to this research are construct and content, or semantic validity. To predict ←something→ is the primary purpose of construct development (Churchill 1979; Nunnally 1967; Peter 1979; De Vellis 2003) that is, to make (construct) a concrete, measurable ‘object’ from an abstract idea (Borsboom 2005). Given this, it would also seem logical to extend the idea that an ‘attitude’ is an abstract ‘construct’ which has the capacity to be concretised [and, therefore, observed and measured] using a construct development procedure. The construct development procedure would, of necessity, validate the measure. The term validity implies that there is general agreement that the measure measures what it purports to measure. We must ask at this point whether an attitude can be a value, a worldview and a belief at the same time and still serve the purpose of prediction of individual behaviours? For example, while Fishbein and Ajzen (1975, 2010) have forcefully argued for the need for clear distinctions between attitudes, values and beliefs for over 35 years, there still seems to be confusion in the literature, despite the apparent popularity of their planned behaviour research [and notwithstanding Allport’s 1935 classic chapter on Attitudes].

There are those who posit that behavioural change is determined by individual or personal factors, as well as external factors in a contextual domain (Maio et al. 2007; Stern 1999). Personal domain factors are those that guide the motivation of the individual, such as values, beliefs, attitudes and norms. Contextual domain factors are attributes, acquired capabilities, the immediate situation, and external constraints, such as education, religion, income and government regulation. It has been argued that these personal and contextual factors will influence individuals’ behaviours because of the ways these aspects interact and of the ways they can significantly influence the success of interventions designed to change behaviour [Maio et al. 2007; Stern 1999].

Underpinning much research in behavioural science is the assumption that we can understand the link between various personal domain variables, intentions and behaviour. This assumption is based on the vast array of research using the Theory of Reasoned Action (TRA) and the later variant, the Theory of Planned Behaviour (TPB). To illustrate its popularity, at the end of 2014 there were 51,100 hits on Google Scholar for the “Theory of Planned Behaviour” using the Boolean delimiters to limit the search to only those articles using the term in full. The TPB suggests there is a causal relationship between attitudes→intentions→behaviours, where the process begins with beliefs about an action
[based on background factors], followed by attitudes about an action and then ending with a targeted behaviour (Fishbein & Ajzen 1975, 2010; Fishbein et al. 2003).

Fishbein and Ajzen (2010) listed three general areas of ‘background factors’ to attitude formation: individual, social, and informational. While the personal background factors include values and personality, the social factors include religion and culture, and informational factors include the media. Arguably, a worldview (i.e. NEP) is a social background factor in line with religion and culture. An attitude may be inferred at an individual level, while a worldview, on the other hand, relates to a belief or value system in a community or the broader society (Cobern 1996). The frequent use of the NEP scale for measuring concepts it was not constructed to measure, leads to a serious concern about its validity in these applications (Deshpandé 1983).

The TPB model portrays a theoretical link between attitudes, norms, beliefs and behaviour. The theory implies that if we can tap into, understand and change people’s attitudes, we will have the ability to change their behaviours (Chung & Poon 2001; Clark, Kotchen, & Moore 2003; Deng, Walker, & Swinnerton 2006). Given the diversity of contexts used to examine the TPB, numerous attitude scales have been developed (see Bearden, Netemeyer, & Mobley 1993; Bruner & Hensel 1992; Bruner, Hensel, & James 2005; Bruner & Hensel 1998; Bruner, James, & Hensel 2001). As a consequence, it appears that much of the environmental behaviour literature has been loosely linked to the Theory of Planned Behaviour. However, the literature in this field seems to use concepts including attitudes, values, beliefs, concerns, or worldviews interchangeably and inconsistently. The work of Stern, Dunlap and their colleagues has been integrated into much of the current research on the personal domain factors of pro-environmental behaviour (De Groot & Steg 2008; Dunlap 2008; Lucas et al. 2008; Steg & Vlek 2009; Stern 2000; Stern, Dietz, & Kalof 1993; Stern et al. 1995). While Stern et al. (1995) discussed the differences between social and personal domains, others seemed uncritical as to whether the scale they used measured attitudes, values, beliefs or worldviews, and whether those variables related to personal or contextual domain factors (Dunlap 2008; Dunlap & Van Liere 1978; Dunlap et al. 2000). This warrants a closer examination of the differences between the concepts.

2.1 Worldview and its Relation to Concerns, Attitudes, Values and Beliefs

There are important distinctions between a worldview, concerns, attitudes, values and beliefs that need to be clarified; a summary is shown in Table 1. To define the first of these, a worldview “consists of basic assumptions and images that provide a more or less coherent, though not necessarily accurate, way of thinking about the world” (Kearney 1984 p. 41). This suggests that a worldview is constructed outside the individual and represents a system of values or beliefs, based on the means of making assumptions and images (which may not be accurate) available to individuals in their local environment. This indicates that measurements of worldviews relate to value systems constructed in the social domain based on the information that is available in any given environment.

There is a fundamental difference between measurements for a population (i.e. social domain) and measurements for the individual (i.e. personal domain), and worldviews lie outside of the personal domain. For example, it is evidently problematic to use a study relating to the proportion of the population believing in God (worldview) to infer these individuals have a high likelihood of giving to charities. If one wants to assess charitable behaviour, a measure of attitudes towards charities or non-profit organisations would be a more precise measure. The NEP was meant to measure whether the public accepted a new paradigm (Dunlap & Van Liere 1978), or, in other words a measure for environmental orientation in a population outside the personal domain. It seems inappropriate, therefore, to use the NEP for ‘individual diagnoses’ of pro-environmental attitudes – and further behaviour. Nevertheless, researchers have attempted to close this gap in approaches when it comes to environmental concerns (see for example Milfont and Hawcroft’s [2010] meta analysis of studies using the NEP).

2.2 Environmental Concern

Attempts have been made to close the gap between the social worldview concept and the personal attitude concept by introducing measures of ‘environmental concern’. Environmental concern refers to the degree to which people are aware of environmental problems and support efforts to solve them, and/or indicate a willingness to contribute personally to proposed solutions (Fernandez-Ballesteros 2003). Two major approaches exist to assess environmental concern: the first is based on efforts to examine policy-relevant aspects of environmental problems, and the second applies the various forms of attitude
theory when examining individuals’ assessment of those problems (Dunlap & Michelson 2002).

The ‘policy’ approach focuses on a population’s awareness or understanding of various environmental concerns, while the second approach using ‘attitude theory’ attempts to measure individuals’ concerns. Thus, the dual approach used within the concept of ‘environmental concerns’ is ambiguous, as it refers to both personal and social domains, as explained earlier. ‘Environmental concerns’ we believe, is mainly a social variable because both the NEP scales are developed as measures of such. Indeed, the NEP is widely regarded as a measure of environmental/ecological ‘consciousness’ (Fernandez-Ballesteros 2003), which suggests that it relates to societal awareness of environmental issues rather than individual behaviour.

There is an important difference between a worldview and individuals’ environmental concern. Worldview theory suggests that a worldview attempts to establish a complete and coherent view of how the world operates (although not necessarily true or testable) (Cobern 1996). Environmental concerns, on the other hand, tend to change over time (e.g. acid rains are no longer a concern) and may also vary in different locations (Dunlap & Michelson 2002). The original 1978 NEP publication clearly shows that the authors believed they had developed a measure to capture a worldview in the NEP scale. However, there seems to be some confusion about the NEP scale and what it is supposed to measure because of reference to ‘attitude measurement’ items within the NEP scale (Dunlap & Van Liere 1978). As previously discussed, we would not expect that individual attitudes could be captured by a scale measuring a worldview or people’s environmental concerns (Dunlap et al. 2000). Thus, the NEP scale measures generalised (social) beliefs about the nature of human-environment interactions that may be influenced by social structure and values, which, in turn, influence attitudes, beliefs and behavioural intentions regarding specific environmental conditions (Stern, Dietz & Guagnano 1995). This supports the view that the NEP relates to the community and the broader society, and cannot, therefore, be used selectively to measure personal attitudes towards the environment. The unit of analyses here are not commensurate with each other (Stevens & Espeland 2005).

It is also important to distinguish the difference between value systems (worldviews) and individual or personal values. Personal values are often seen as antecedents to a worldview because it is assumed that values are learnt earlier in life and are broader as well as more stable over time (Stern et al. 1995). As a result, personal values belong to a different domain from worldviews because individual values vary from person to person, and are transferred within close-knit relations. Even within wider theories, such as the Theory of Planned Behaviour, values are seen as a personal background factor, while worldviews reside with social background factors such as religion or culture (Fishbein & Ajzen 2010). Table 1 summarises the key differences between values, attitudes, beliefs, worldview and environmental concerns including the domain to which they belong. Note: the terms are not immutable and disciplinary differences may exist in both denotations and connotations of terms. However, the information in this summary highlights the differences between these terms and provides justification for our concerns when these terms are used interchangeably.
Table 1: Summary of the Semantic Differences between Values, Attitudes, Beliefs, Environmental Concerns and Worldviews

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition(s)</th>
<th>Semantic differentiation</th>
<th>Domain</th>
<th>Measurement implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values (A)</td>
<td>Values are enduring beliefs about desirable goals.</td>
<td>Values focus on abstract ideals. There are at least four concepts with which values are conflated: attitudes, traits, norms, and needs. Values are more abstract than attitudes.</td>
<td>Individual within social</td>
<td>Values are latent guides for evaluating other more observable objects – generalised across all objects (not mutable).</td>
</tr>
<tr>
<td>Attitudes (B)</td>
<td>Attitudes are a psychological tendency that is expressed by evaluating an object positively or negatively.</td>
<td>Attitudes are applied to more concrete social objects (e.g. expressions of stance) may be expressive of values in abstraction.</td>
<td>Individual</td>
<td>Attitudes are latent and relate to specific objects. They will change according to context (mutable).</td>
</tr>
<tr>
<td>Beliefs (C)</td>
<td>Confidence in the truth or existence of something not immediately susceptible to rigorous proof.</td>
<td>Whereas attitude refers to a person’s favourable or unfavourable evaluation of an object, beliefs represent the information a person has about the object.</td>
<td>Individual</td>
<td>Reportable. A belief links an object to some attribute in a generic sense. For example, the belief ‘humans are destroying the planet’ links the object ‘humans’ to the attribute ‘destroying the planet’.</td>
</tr>
<tr>
<td>Environmental Concerns (D)</td>
<td>Environmental concern refers to the degree to which people are aware of environmental problems and support efforts to solve them and/or indicate a willingness to contribute personally to their solution.</td>
<td>Two major approaches exist: the first is based on efforts to examine policy-relevant aspects of environmental problems, and the second applies various forms of attitude theory when examining individuals’ assessment of these problems. The ‘policy’ approach focuses on a population’s awareness or understanding of various environmental concerns. The ‘theory’ approach attempts to use attitude theory to measure individual concerns.</td>
<td>Social or individual</td>
<td>The policy approach; reportable social measurement. The theory approach; a latent personal variable. Somewhat problematic, for example, due to the ambiguity and changing nature of the ‘environment’ concept.</td>
</tr>
<tr>
<td>Worldview (E)</td>
<td>Basic assumptions and images that provide a more or less coherent, though not necessarily accurate, way of thinking about the world.</td>
<td>A worldview is based on value systems and culture and is constructed socially in a community. A worldview is a conclusive and consistent picture of how the world operates.</td>
<td>Social</td>
<td>Latent social variables, useful with regard to the proportion of a population who prescribes to a certain belief or value system, e.g. belief in a god.</td>
</tr>
</tbody>
</table>

Source: A: [Hitlin & Piliavin 2004]; B: [Fishbein & Ajzen 1972]; C: [Fishbein & Ajzen 1975]; D: [Dunlap & Michelson 2002; Fernandez-Ballesteros 2003]; E: [Cobern 1996; Kearney 1984]
A worldview as defined in the literature (Cobern 1996) sits within the social domain rather than any personal domain. As a measure residing in the social domain, the NEP may be useful to investigate the proportion of a population who subscribes to this particular worldview (similar to measuring the level of religiosity within a population). An attitude, on the other hand, is derived from a person’s beliefs, values and indeed their worldview. Attitudes are within the personal domain and can directly influence individual behaviour. Those wishing to investigate how interventions can change pro-environmental behaviours, aim for a measure that captures consumers’ attitudes towards such behaviour in their personal domain, rather than focusing on broad, socially-constructed worldviews. The following discussion relates to reasons why the NEP may not be an appropriate measure for this purpose.

2.3 Construct Validity

In terms of scientific precision, the wide range of terminology used to describe the NEP scale and its variants is problematic for a number of reasons. Establishing semantic validity is an important first step in construct development, and a consideration of the connotations and denotations of the terms, as well as the level of abstraction, are also required (Teas & Palan 1997).

According to the Handbook of Marketing Scales (Bruner et al. 2005), a usable scale should, at least, have a reasonable theoretical framework which is generally agreed upon. This is not the case with the NEP scale (Stern, Dietz, & Guagnano 1995). We question the current simultaneous usage of the NEP as a unidimensional scale and as a measure of attitudes (at least from a semantic validity perspective). When Dunlap et al. (2000) revised the NEP scale, they acknowledged that the scale “is treated as a measure of endorsement of a fundamental paradigm or worldview, as well as of environmental attitudes, beliefs, and even values, [and] reflects the ambiguity inherent in measuring these phenomena” (Dunlap et al. 2000, p. 427). This would suggest that any scale that is capturing these multiple phenomena would implicitly need to be multi-dimensional in order to capture attitudes, beliefs, worldviews and values.

Hawcroft and Milfont (2010) have identified that the NEP scale has been viewed in various ways within the literature - environmental concern, environmental values, environmental beliefs and environmental attitudes. From a psychometric perspective, this is particularly problematic because values, beliefs, attitudes and paradigms are conceptually distinct (Fishbein & Ajzen, 1975, 2010). Indeed, Borsboom and colleagues (2004, p. 321) argued that “a test X is valid for the measurement of attribute Y if, and only if, the proposition ‘Scores on test X measure attribute Y’ is true”. If the proposition ‘NEP measures an ecological worldview’ is true, then it is doubtful that it can also measure environmental attitudes, values, beliefs and concerns; at least not as a unidimensional scale.

The NEP scale has been used for many years as if the scale were developed as rigorously as any psychometric scale, as recommended by several authors (Churchill 1979; De Vellis 2003; Peter, Churchill, & Brown 1993; Rossiter 2002, 2011). This inadequacy has been recognised by the original authors, Dunlap et al. (2000), in their revised NEP scale. However, there is still cause for concern in its development (Hawcroft & Milfont 2010). It becomes reasonably clear from the studies where it has been used, that the scale is somewhat unstable in various contexts, and has been found to vary based on respondents’ socio-demographic variables (Dunlap 2008; Milfont & Duckitt 2010).

Another test of scale or construct validity is that of its consistency, both internally (alpha) and over time. Due to its long duration of use, it would be expected that the NEP is a consistent measure of the pre-cursors that relate to environmental behaviour change, but this is not the case (Hawcroft & Milfont 2010). At the most fundamental level there is the debate about its dimensionality (Nooney et al. 2003). Secondly, variations according to respondents’ socio-economic status have been reported (Nooney et al. 2003). Thirdly, alternative forms have been used to assess the NEP. Studies have reported the 6, 12 and 15 items versions and, in general, all are treated as interchangeable scales despite the publicised criticisms (Dunlap 2008).

For a scale to be externally valid and internally consistent, there are a number of benchmarks for ‘performance’ required. The first of these is ensuring formative validity of the research (Brennan, Voros, & Brady 2011), that is, that the necessary steps taken to ensure that face, semantic and content validity are taken into account in the research design process. Without these formative steps, any construct validation using alpha or some other measure of reliability is relatively baseless.

The NEP, as a new worldview, is a very complex construct. Measuring complex constructs often leads to either aggregation of multiple concepts into a single scale, or the creation of multi-dimensional scales (Rigdon et al. 2011). Rigdon et al. (2011) suggested that some scales are really convenient verbal labels for a set of items in the same general conceptual...
domain, but they may not be purposeful constructs measuring definable concepts. This may be the case with the NEP scale, as it was suggested by Dunlap (2008) ‘in 1987 they did not know how to measure a new paradigm when developing the scale’.

While summarising the items may be convenient for communication, it may also result in the loss of valuable information on the unique relationships between the items and their outcomes [Franke, Preacher, & Rigdon 2008]. In fact, studies that have compared scales composed of conceptually distinct constructs (whether aggregate, higher-order factors, or formative) have consistently found that both prediction and understanding are enhanced by using a larger number of specific variables rather than a smaller number of more global ones (McGrath 2009; Mershon & Gorsuch 1988; Paunonen 1998).

The rigour of research is often assessed on efforts used to ensure that the processes and procedures obtain valid and usable responses. One of the primary types of formative validity is that of semantic validity [Zaltman, McMasters, & Heffring 1982], that is, terms are defined adequately within the research context. For the NEP, a number of authors have refined the scale to be less gender-biased as well as altered the contexts. However, these authors have generally continued to use the scale as a summated scale and as a measure of attitudes towards the environment (see Hawcroft and Milfont’s 2010 Meta-Analysis for examples where this summated measure of environmental attitudes is the only component of a theoretical behaviour model).

We also note that many of these articles use Cronbach’s (1951) alpha as the only means to establish reliability of the measure [see Milfont & Hawcroft 2010] rather than applying more complex psychometric testing using exploratory factor analysis and confirmatory factor analysis. In only using alpha to determine the reliability, most authors sum items to generate a single measure. Relying on this approach has two major limitations: first, Cronbach’s alpha is sensitive to the number of items in the scale and will converge after about 12 items; and second, to use Cronbach’s alpha, it is assumed that there is validity of the items which, as identified earlier, may be problematic [Borsboom et al. 2004].

We have argued that the NEP was originally meant to measure a value-system (that is, a worldview). A value-system belongs in the social domain and using the principles of commensuration can, therefore, only be used to measure variations in a population, not in individuals. The worldview perspective means that the NEP is not a valid measure for assessing attitudes, values or beliefs about the environment. If the NEP is a measure of what is referred to as a ‘new social domain’, is there a problem if this new domain does not exist [Borsboom 2005]? The NEP, at best, may be a loose set of concerns that are assumed to represent a new worldview about the environment. Summarising the items into one score is also problematic because varying constructs may be combined and, therefore, misrepresented in the results. To explore these issues, we have empirically tested the validity of the two most commonly-used variations of the NEP scales, using two different samples. The NEP1 scale has 12 items, and the NEP2 scale which was revised in 2000 [Dunlap et al. 2000] has 15 items [These items are shown in column one of Table 4 and 5].

2.4 Research Questions

**RQ1:** Is the NEP scale uni-dimensional or multi-dimensional?

**RQ2:** Does the NEP scale represent a summated consistent worldview or a set of sub dimensions?

3. METHOD

This research builds on Hawcroft and Milfont’s (2010) analysis of the NEP, and examines data along the lines suggested by Dunlap and Van Liere (2000) to ascertain the applicability of the NEP as a measure for environmental researchers. Two independent data sets were generated: one using the original NEP scale (NEP1) was collected from an online sample distributed by email link to MBA students in three Australian universities and one New Zealand university; and the second data set was obtained using the NEP revised scale (NEP2). An email link to an online survey was used to draw a sample from Australian suburban householders interested in sustainable household practices. This gave us two samples with sufficient variation to establish any scale disparities. The sample characteristics are presented in Table 2. To establish formative and prognosticative validities, the samples had to be different ‘enough’ to ascertain the stability of the measure, including different data collection methods.
Properties of each of the two data sets were examined to determine whether it was appropriate to undertake more detailed empirical analysis. We first examined the assumptions for Factor Analysis (FA). This requires: (a) the sample size must be greater than 20 cases per item; (b) at least some of the item correlations should be greater than 0.50; (c) the anti-image correlation matrix should be greater than 0.50; (d) the Kaiser-Meyer-Olkin index should be greater than 0.50; (e) Bartlett’s test of sphericity should be significant (less than 0.01); (f) the number of iterations for convergence should be low; (g) there should be a number of factors with Eigen values over 1; and (h) there should be low levels of cross-loaded items (Hair et al. 2010).

To examine the dimensionality of the scales, we conducted Exploratory Factor Analysis using Principal Components Analysis with Varimax Rotation with Kaiser Normalisation. Cross-product loadings of less than 0.35 were suppressed in the analysis. The factors were then evaluated using Cronbach’s (1951) alpha to ascertain their reliability as a sub-scale. Both NEP variants were analyzed using the same technique. The stability of the summated scale dimensions, identified in the exploratory factor analysis (EFA) across the two samples, was evaluated by comparing variations across respondents’ socio-demographic variables. This form of analysis is the principal form used by others when applying the NEP to environmental issues, thus we felt it necessary to apply to this study for the purposes of replication consistency. We acknowledge that PCA has limitations in that it is subject to scale variance, assumes that large variances are the main interest and relies on the assumption that correlations exist, where none might actually be present.

4. RESULTS AND DISCUSSION

As previously discussed in this paper, it has been identified by several authors that the NEP scale has provided somewhat inconsistent data. This study has also identified a number of concerns regarding its application. The two major issues relate to the dimensionality of the NEP scale and the internal consistency (alpha) of the NEP dimensions.

4.1 The Dimensionality of the NEP Scale

The scale has been and is still used both as a summated scale and as a multi-dimensional measure of attitudes (Hawcroft & Milfont 2010). The dimensionality of the NEP has been demonstrated in a number of research articles (Dunlap et al. 2000; Milfont & Duckitt 2004, 2010). These authors argued that there is more than one dimension. Others have shown that the specific composition of the multiple dimensions varies across contexts and samples (Hawcroft & Milfont, 2010). Corral-Verdugo et al. (2008), in their examination, used Confirmatory Factor Analysis to identify dimensions relating to the NHIP (New Human Interdependence Paradigm). They used the NEP scale items to differentiate along two dimensions in addition to their own scale. They found a factor structure that split the NEP into the New Environmental and Human Exception Paradigms. This might be potentially commensurate with the pro and con items in the scale, as identified by others in the early version of the NEP (Dunlap et al. 2000). Corral-Verdugo et al. (2008) also identified the harmony (balance) / mastery (exception) dimensions. As mentioned previously, for FA to be useful as a tool, a number of assumptions must be tested: the results are outlined in Table 3 below for the data from the two samples.

<table>
<thead>
<tr>
<th>Table 2: Sample Characteristics of NEP1 and NEP2</th>
<th>NEP1</th>
<th>NEP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response size</td>
<td>242</td>
<td>262</td>
</tr>
<tr>
<td>Males</td>
<td>130</td>
<td>117</td>
</tr>
<tr>
<td>Females</td>
<td>112</td>
<td>145</td>
</tr>
<tr>
<td>Mean Av Ages</td>
<td>23</td>
<td>47</td>
</tr>
<tr>
<td>Did not complete High School</td>
<td>43</td>
<td>14</td>
</tr>
<tr>
<td>Completed High School</td>
<td>44</td>
<td>17</td>
</tr>
<tr>
<td>University</td>
<td>124</td>
<td>229</td>
</tr>
<tr>
<td>Post-school training</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>7-point</td>
<td>5-point</td>
</tr>
</tbody>
</table>

To examine the dimensionality of the scales, we conducted Exploratory Factor Analysis using Principal Components Analysis with Varimax Rotation with Kaiser Normalisation. Cross-product loadings of less than 0.35 were suppressed in the analysis. The factors were then evaluated using Cronbach’s (1951) alpha to ascertain their reliability as a sub-scale. Both NEP variants were analyzed using the same technique. The stability of the summated scale dimensions, identified in the exploratory factor analysis (EFA) across the two samples, was evaluated by comparing variations across respondents’ socio-demographic variables. This form of analysis is the principal form used by others when applying the NEP to environmental issues, thus we felt it necessary to apply to this study for the purposes of replication consistency. We acknowledge that PCA has limitations in that it is subject to scale variance, assumes that large variances are the main interest and relies on the assumption that correlations exist, where none might actually be present.
These results (Table 3) for the NEP1 and NEP2 data sets show it is permissible to undertake Factor Analysis; however, only minimum requirements were met for NEP1 as there is relatively low inter-item correlation and the anti-image matrix diagonals are also at relatively low levels, with none greater than 0.7 (Hair et al. 2010). The correlation matrix shows a low level of inter-item correlation overall for both the NEP1 and NEP2 scales.

Following this confirmation, we proceeded to examine both scales in accordance with standard Factor Analytical processes for dimensionality (Tables 4 and 5). We also report on the dimension structures within the original works. Variations in the data may suggest that dimensionality varies across contexts (De Vellis 2003; Hair et al. 1995).

Table 3: Factorability of the NEP scales

<table>
<thead>
<tr>
<th>Factorability assumptions</th>
<th>NEP1</th>
<th>NEP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>Greater than 20 cases per item</td>
<td>242</td>
</tr>
<tr>
<td>Inter-item correlations at least some should be greater than 0.5</td>
<td>None found (all less than 0.35)</td>
<td>Several items with inter-item correlations greater than 0.5</td>
</tr>
<tr>
<td>Anti-image correlation matrix greater than 0.5</td>
<td>Matrix diagonals ranged from 0.53 to 0.68</td>
<td>All matrix diagonals were greater than 0.8</td>
</tr>
<tr>
<td>Kaiser-Meyer-Olkin</td>
<td>Greater than 0.5</td>
<td>0.663</td>
</tr>
<tr>
<td>Bartlett’s test of sphericity</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of iterations for convergence</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Number of factors with Eigen values over 1</td>
<td>Five</td>
<td>Three</td>
</tr>
<tr>
<td>Number of cross-loadings greater than 0.35</td>
<td>Two</td>
<td>Five</td>
</tr>
</tbody>
</table>
Table 4: The Dimensionality of the Original NEP (NEP1) Scale (1978)

<table>
<thead>
<tr>
<th>Q</th>
<th>Item</th>
<th>Hypothesised Dimension</th>
<th>PRO / CON</th>
<th>Overall Mean</th>
<th>Std Dev</th>
<th>Alpha if item deleted</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Variance explained (per cent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One</td>
</tr>
<tr>
<td>1</td>
<td>We are approaching the limit of the number of people the earth can support</td>
<td>LTG PRO</td>
<td>5.17</td>
<td>1.54</td>
<td>.566</td>
<td>.750</td>
<td>13.31</td>
</tr>
<tr>
<td>2</td>
<td>The balance of nature is very delicate and easily upset</td>
<td>BON PRO</td>
<td>5.81</td>
<td>1.21</td>
<td>.587</td>
<td>.816</td>
<td>12.95</td>
</tr>
<tr>
<td>3</td>
<td>Humans have the right to modify the natural environment to suit their needs</td>
<td>HDN CON</td>
<td>5.14</td>
<td>1.48</td>
<td>.565</td>
<td></td>
<td>12.86</td>
</tr>
<tr>
<td>4</td>
<td>Mankind was created to rule over the rest of nature</td>
<td>HDN CON</td>
<td>3.82</td>
<td>1.66</td>
<td>.566</td>
<td></td>
<td>12.28</td>
</tr>
<tr>
<td>5</td>
<td>When humans interfere with nature it often produces disastrous consequences</td>
<td>BON PRO</td>
<td>5.48</td>
<td>1.44</td>
<td>.546</td>
<td></td>
<td>11.58</td>
</tr>
<tr>
<td>6</td>
<td>Plants and animals exist primarily to be used by humans</td>
<td>HDN CON</td>
<td>4.16</td>
<td>1.63</td>
<td>.588</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>To maintain a healthy economy we will have to develop a steady state economy where industrial growth is controlled</td>
<td>LTG PRO</td>
<td>5.16</td>
<td>1.23</td>
<td>.566</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Humans must live in harmony with nature in order to survive</td>
<td>BON PRO</td>
<td>5.84</td>
<td>1.17</td>
<td>.572</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The earth is like a spaceship with very limited room and resources</td>
<td>LTG PRO</td>
<td>5.30</td>
<td>1.52</td>
<td>.575</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Humans do not need to adapt to the natural environment because they can remake it to suit their needs</td>
<td>HDN CON</td>
<td>2.68</td>
<td>1.51</td>
<td>.638</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>There are limits to growth beyond which our industrial society cannot expand</td>
<td>LTG PRO</td>
<td>4.69</td>
<td>1.30</td>
<td>.598</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Mankind is severely abusing the environment</td>
<td>BON PRO</td>
<td>5.15</td>
<td>1.38</td>
<td>.588</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BON = Balance of nature, LTG = limits to growth, HDN = Human dominance over nature. EFA conducted using Principal Components Analysis with Varimax Rotation with Kaiser Normalisation. Rotation converged in 14 iterations. Suppression of cross-product loading of ≤0.35, Alpha 0.607 for 12 items.
### Table 5: The Dimensionality of the Revised NEP (NEP2) Scale (2000)

<table>
<thead>
<tr>
<th>Q</th>
<th>Item</th>
<th>Hypothesised Dimension</th>
<th>PRO / CON</th>
<th>Overall Mean</th>
<th>Std Dev</th>
<th>Alpha if item deleted</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>We are approaching the limit of the number of people the earth can support</td>
<td>LTG PRO</td>
<td>3.57</td>
<td>1.22</td>
<td>.830</td>
<td>.616</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Humans have the right to modify the natural environment to suit their needs</td>
<td>AAC CON</td>
<td>3.49</td>
<td>1.27</td>
<td>.833</td>
<td>.413</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>When humans interfere with nature it often produces disastrous consequences</td>
<td>FBN PRO</td>
<td>3.92</td>
<td>1.13</td>
<td>.837</td>
<td>.574</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Human ingenuity will ensure that we do not make the earth uninhabitable</td>
<td>RE CON</td>
<td>3.17</td>
<td>1.19</td>
<td>.832</td>
<td>.623</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Humans are severely abusing the environment</td>
<td>ECR PRO</td>
<td>4.27</td>
<td>.96</td>
<td>.828</td>
<td>.653</td>
<td>.366</td>
</tr>
<tr>
<td>6</td>
<td>The earth has plenty of natural resources if we just learn how to develop them</td>
<td>LTG CON</td>
<td>2.88</td>
<td>1.40</td>
<td>.839</td>
<td>.660</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Plants and animals have as much right as humans to exist</td>
<td>AAC PRO</td>
<td>4.38</td>
<td>93</td>
<td>.836</td>
<td>.356</td>
<td>.553</td>
</tr>
<tr>
<td>8</td>
<td>The balance of nature is strong enough to cope with the impacts of modern industrial nations</td>
<td>FBN CON</td>
<td>4.07</td>
<td>1.09</td>
<td>.831</td>
<td>.559</td>
<td>.509</td>
</tr>
<tr>
<td>9</td>
<td>Despite our special abilities, humans are still subject to the laws of nature</td>
<td>RE PRO</td>
<td>4.54</td>
<td>.81</td>
<td>.842</td>
<td>.600</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The so-called ‘ecological crisis’ facing mankind has been greatly exaggerated</td>
<td>ECR CON</td>
<td>4.03</td>
<td>1.13</td>
<td>.824</td>
<td>.454</td>
<td>.654</td>
</tr>
<tr>
<td>11</td>
<td>The earth is like a spaceship with very limited room and resources</td>
<td>LTG PRO</td>
<td>3.79</td>
<td>1.20</td>
<td>.829</td>
<td>.720</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Humans were meant to rule over the rest of nature</td>
<td>AAC CON</td>
<td>3.93</td>
<td>1.25</td>
<td>.831</td>
<td>.644</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The balance of nature is very delicate and easily upset</td>
<td>FBN PRO</td>
<td>4.13</td>
<td>1.01</td>
<td>.838</td>
<td>.613</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Humans will eventually learn enough about how nature works to be able to control it</td>
<td>RE CON</td>
<td>3.68</td>
<td>1.16</td>
<td>.832</td>
<td>.767</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>If things continue on their present course, we will soon experience a major ecological catastrophe</td>
<td>ECR PRO</td>
<td>4.03</td>
<td>1.02</td>
<td>.824</td>
<td>.630</td>
<td>.413</td>
</tr>
</tbody>
</table>

LTG = Limits to growth, AAC = anti-anthropocentrism, FBN = Fragility of the balance of nature, RE = Rejection of exemptionalism, ECO = Possibility of eco crisis. EFA conducted using Principal Components Analysis with Varimax Rotation with Kaiser Normalisation. Rotation converged in 4 iterations. Suppressed cross-product loadings of less than 0.35, Alpha 0.893 for 15 items
Dunlap and Van Liere (1978) posited five dimensions for their original scale (NEP1) namely limits to growth, anti-anthropocentrism, fragility of the balance of nature, rejection of exceptionalism, and the possibility of eco-crisis. It can be seen from Tables 4 and 5 (NEP1 and Revised NEP2) that neither of the scales demonstrates either unidimensionality, or multi-dimensionality. In fact, the items load on different dimensions to those identified by Dunlap and Van Liere (1978). Furthermore, there is a reasonably strong variation in the data, as evidenced by the standard deviations. There is no reason to assume that it is appropriate to sum these highly variable scores to produce a generic score. To do so is to lose part of the value of the data, that is, its ability to be used to differentiate between sections of the population. In the next section, we analyze the internal consistency of the scale.

4.2 Internal Consistency (alpha) of the NEP
In addition to the dimensions, Tables 4 and 5 provide results for Cronbach’s alpha for each of the scales. In the tables, it can be seen that the NEP1 and NEP2 have different alpha levels, both overall, and item-specific. Some of this may be due to the sample characteristics (for example the variance in the standard deviations indicates differences between samples), however, it may also be due to differences in the scale itself (De Vellis 2003). Cronbach’s alpha is sensitive to the number of items included in a scale. The higher the number of items, the larger the coefficient recorded. Indeed, more than about 12 items in the scale will increase the coefficient (Nunnally 1967; Peterson 1994). Both the NEP2 and original NEP1 scales have several commonalities, but the NEP2 has an alpha in the range which would be considered acceptable, that is, greater than 0.7 (Hair et al. 2010). We believe that some of this may be an artefact of the size of the scale and is not necessarily because it is unidimensional. Furthermore, as the point of using alpha is to determine a single global construct and its reliability (Kopalle & Lehmann 1997), it seems to be a somewhat questionable practice to amalgamate items across what were meant to be multiple distinctive dimensions.

In addition to questioning the uni-dimensionality of the items, the homogeneity is also somewhat suspect. Green, Lissitz and Mulaik (1977) advised that homogeneity (single common factor) is one goal of classical test theory on which alpha is based. They argued that internal consistency is evident when there is a high degree of inter-relatedness between items. Thus, a longer scale can have a high alpha but not a commensurately high level of homogeneity. In fact, Dunlap and Van Liere (1978) explicitly built heterogeneity into the initial survey, as they proposed that they wanted to measure how people were responding to the urgency of the environmental crisis by endorsing the NEP. However, they did not differentiate between values, attitudes or behaviours when developing the scale. They did report using the multi-trait-multi-method approach (Campbell & Fiske 1959) in designing the questions. As such, they clearly had no opportunity to test for convergence or divergence until after they collected the data, by which time the scale was already ‘launched’. Thus, our results support that this is the case; there is a high alpha on NEP2 but not NEP1, and both have low levels of homogeneity. This appears to indicate that there are multiple dimensions, however, they are not the dimensions suggested in the original conceptualisation of the scale.

5. CONCLUSION
Measurement is important to those attempting to evaluate ‘objects’ with a view to making changes to input variables and, therefore, (hopefully) to make changes to the outcomes. In any research, including the study of sustainability, there is a strong need to measure with precision. Precision requires semantic validity, that is, the semantics of the question(s) are unassailable; people know and understand the concepts and their meaning is shared amongst all the parties to the research (including the participants). More precise measures ‘should’ lead to more precise predictions of behaviours. The theory of planned behaviour/reasoned action is based on the premise that we have accurate measures of attitudes, intentions and behaviours in place.

The NEP scale (1 and 2) has equivocal results across the literature when it comes to semantic validity. The lack of agreement on what the scale purports to measure may overshadow the extensive research examining the scales. Is it a measure of attitudes, a worldview or something else? Regardless, our research suggests that NEP is not unidimensional and, therefore, summation potentially hides the variations in the data. Importantly, the summation process may contribute to the loss of a deeper understanding of participants’ responses.

In addition, psychometric theories of scale development and measurement provide advice regarding validity and reliability in measuring attitudes. A valid scale should be grounded in psychometric theory (Stern, Dietz, & Guagnano 1995) and would have formative validity and construct validity clearly presented to the readers (Hawcroft & Mitfont 2010). Thus, there should be a replicable process of constructing the items and/ or the measures. When reliability is measured, the
scale items and measures should be reliable, that is, measure the same thing and get the same result, however many times you measure it. Reliability is a necessary precursor of predictability. However, validity (face, content, semantic, and construct) is a necessary precursor to reliability. It is axiomatic that it is possible to have very reliable measures that are not valid; consistent scales that are not commensurate in terms of what they measure are of little value.

However, our research suggests that when it comes to the NEP and its variants, we have limited validation (that we can see) within the various contexts where it has been used. Of the validities, construct validity would be important in developing precision (for prediction) but, as our research shows, the measure is not precise, ergo it cannot be used to predict in its current form.

Finally, we question whether the NEP and its variants can be used as a tool for evaluating the level of endorsement for the new ecological/environmental paradigm because of its inability to form a consistent and coherent worldview. If we use it as originally intended, it is too easy to assume that it should be summated even though our, and many other, studies demonstrate that this is not recommended because of the loss of valuable information.

Instead of measuring a worldview or a paradigm, it appears that the NEP measures a loose set of concerns for the environment on a societal basis. The NEP items may be very useful in terms of identifying the proportion of a population who shares various concerns about the environment. By analyzing the level of agreement with each variable, policy makers may suggest those areas where more information is needed. However, as a measure of individuals’ attitudes towards environmental sustainability and a predictor of behaviour or intentions, it is somewhat suspect, as we have previously highlighted. The NEP items do not reflect attitudes or behavioural intent in the personal domain. It is time for a new rigorously validated and reliable measure to be developed for this purpose. Such a measure should be based on an in-depth analysis of each item of the NEP scales in order to assess where more information is needed within the social domain. In the interim, environmental sustainability researchers should take care with how the scale is being applied and the consequent reported findings. Beyond this we are suggesting that a more reliable personal domain measure of attitudes towards environmental sustainability, as a predictor of behaviour and intentions, should be developed.
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Understanding student perceptions of a career in the marketing research industry: Implications for positioning and engagement

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ABSTRACT
The performance of the marketing research industry is heavily dependent on its human resources. Consequently, attracting high quality employees and their retention in the industry is a critical success factor. University students, particularly those with business, marketing and psychology backgrounds, are an important source of future staff in the industry, especially for entry level positions. This study explores student perceptions of marketing research as a career option. General ‘top of mind’ descriptors of marketing research, factors influencing consideration of a marketing research career, and changing perceptions after provision of information regarding the industry and the role of a marketing researcher, are investigated. Many students demonstrate an overall lack of knowledge as to what marketing research comprises. Of those students with an impression, marketing research is perceived to be predominantly about data gathering (in particular surveys) and quantitative data analysis. Few participants in this study discussed the role of qualitative research or the uses of insights obtained from marketing research. There also was a focus on traditional marketing research agencies, and limited knowledge about in-house research or the growing number of roles in the ‘insight’ space. Consequently, another theme arising from this research was the negative stereotyping of the marketing research industry. Once provided with an accurate description of the industry, student views were more positive. However, students still questioned the relevance of their qualifications for a career in marketing research; this was particularly true of psychology graduates. The industry needs to reposition itself, stressing the conceptual and strategic side of marketing research, and the consultancy role of the marketing researcher. Improved online resources and internship opportunities for students are needed, and the whole industry must collaborate to establish and build stronger ties with academia.

Keywords: marketing research, student perceptions, careers, recruitment.
1. INTRODUCTION

The recruitment of high-quality employees will always be a fundamental goal for organisations. Failing to attract the best employees will inevitably impact the quality of an organisation’s workforce and, in turn, its business success (Hor & Keats, 2008). Now, more than ever, it is crucial to recognise and understand the manner in which prospective applicants are attracted to organisations and professions. Issues of attraction and retention affect many industries in Australia acutely, due to a low unemployment rate, an aging population, the resources boom and general skill shortages (Dainty, 2008; Hor & Keats, 2008; Scott-Ladd, Travaglione, Perryer & Pick, 2010).

The marketing research industry is a labour and knowledge intensive industry. An industry suffering a poor reputation compounds issues of human resource attraction and retention. Marketing research is one such industry with a low profile as a career choice and many negative (and often misinformed) perceptions surrounding the industry (Boddy, 2010). Negative stereotypes of marketing research may deter high quality students from considering careers in the industry (cf. Cory, 1992).

To face the growing challenges posed by economic conditions, intense competition and the growth of new media, the acquisition of a qualified workforce is one of the key requirements for the future success of the Australian marketing research industry (Allday, 2014). This has proven difficult as the industry struggles against the negative perceptions of marketing research amongst qualified graduates and the wider community. Without a systematic understanding of student perceptions and knowledge of marketing research, limited and indeed negative perceptions may persist despite the direction in which the industry is moving, and actions that are being taken at the Australian Market and Social Research Society (AMSRS) and organisational level. There is also increasing recognition that perceptions and perceptual differences are important in student career choices (Dubinsky & O’Connor, 1983; Fine, 2007; Wiles & Shapiro, 2004). There is limited understanding of these issues and their implications, in an Australian and indeed global environment. Sweeney (2001) provides a thought-provoking piece on the marketing research industry in Australia and highlights the need for improved relationships between industry and academia. While the focus of her study and objective is somewhat different from ours, and current student perceptions are not investigated, her paper shows a clear disconnect between academic research training and industry needs. Recent graduates new to the industry often indicate that they are not well prepared, with marketing research agencies and research buyers indicating similar concerns. There also was an underlying feeling in the Sweeney study, amongst academics, research suppliers and recent graduates, that marketing research did not have a high profile as a career. Marshall (2010) explores undergraduate marketing research students’ perceptions of marketing research as a career option. Students were asked to self-complete an open-ended questionnaire on their perceptions pre- and post-commencement of the course. While students were found to increase their consideration of a marketing research career at the conclusion of the unit, they nonetheless cited marketing research as being boring, tedious and statistics-focused and said that these were key reasons for not considering a marketing research career. Some respondents also highlight concerns about job security, and perceptions of marketing research as a stressful occupation. Overall, only a limited number of students indicate marketing research as a career option they had considered, or were considering.

There are three main objectives of this paper. Each supports the key purpose of this study, which is to investigate student perceptions of marketing research as a career choice. The first objective is to explore awareness and perceptions of marketing research and the industry. Student awareness and understanding of the industry and profession may affect the industry’s ability to attract talented employees, in particular tertiary graduates. The second objective is to investigate the factors that influence consideration of a career in marketing research. Objective three is to understand the influence of the provision of accurate industry information on perceptions of marketing research as a career choice. We do this by exploring whether students who are provided with a more informed understanding of what a marketing researcher does on a day-to-day basis are influenced positively to consider the industry in their career choice decision making.1 This study extends the initial work of Marshall (2010) through considering perceptions

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1 Students were advised that marketing research is not an interchangeable term for telemarketing, that it is a highly varied industry involving a number of different roles, firms which specialise in particular areas of the research process, for example qualitative data collection, and others that offer a full service. Students were also informed that (1) a marketing researcher helps inform political, social and economic decisions made by organisations and businesses, (2) work in the industry generally involves liaising closely with clients from diverse backgrounds and organisations, and (3) a key role of marketing research is to collect data and analyse these to provide information that is valuable to their clients in their decision making and assist them to better understand existing and potential customers, and other stakeholders.
of a non-marketing student cohort that also has a desirable skill-set for the industry; by investigating key issues in greater detail through focus groups and in-depth interviews, employing a leading research intensive Group of Eight (Go8) university with a diverse international student cohort as the research context2 and directly investigating the impact of specific information provision on perception change. The paper continues by defining marketing research and classifying key components of the marketing research industry, providing a profile of the marketing research industry, and a review of the literature on factors influencing student career choices and the career decision-making process. Research design and methods is next discussed, followed by an overview of the findings organised around the three core study objectives and the related specific areas of questioning. The paper concludes by highlighting key insights and implications for the industry, study limitations and directions for further research.

2. DEFINING MARKETING RESEARCH

Academic texts and industry definitions of marketing research centre on the notion that marketing research is the systematic procedure of gathering, interpreting, analysing and providing information and/or insight to improve understanding and aid decision making (see Table 1 for industry and academic definitions). The marketing research industry can be described in terms of full service agencies, limited service agencies, and marketing research professionals or teams working internally in companies (Malhotra, 2014). Full service firms are further delineated into syndicated services, customised services and internet/social media services, while limited service firms are defined as field services, focus groups and qualitative services, technical and analytical services and ‘other services’. In addition to the categorisation of marketing research into supplier and service types, most descriptions of marketing research also seek to classify marketing research by the methodological approach (qualitative vs. quantitative research) and data source (primary vs. secondary) (Malhotra, 2014). Recent technological shifts and the increased availability of data has resulted in firms other than traditional marketing research firms providing data and insights. Services in the ‘marketing insight’ space are increasingly provided by research and advisory firms, credit firms, magazine, conference and event firms, as well as vendors of solutions for survey software, access panels, neuromarketing, predictive analysis and voice of the customer. Prominent non-traditional marketing research companies at the forefront of the provision of marketing insights include Adobe’s Marketing Cloud division, IBM’s Enterprise Management division (and SPSS), certain divisions of Experian plc, and Gerson Lehrman Group. Traditional marketing research firms also are beginning to move into these non-traditional areas. Nielsen recently have invested in Neurofocus, subsequently renamed Consumer Neuroscience. This company is developing a neuroscience-based method of testing advertising strategies and responses based on measuring subjects’ brain activity. To capitalise on new media opportunities, and specifically the growth in Pay-TV market share of consumer media consumption, a Pay-TV audience measurement system has been developed with TNS managing the data collection. This system aims to generate more information on interactive advertising, video-on-demand programmes and any time shifting of programmes by viewers. This system complements traditional daily audience ratings information.

Business-spend on non-traditional ‘marketing insight’ information, such as digital media measurement, online qualitative and social analytics, is growing at a much faster pace than traditional marketing research; by some estimates over eight times faster (Research Ratings, 2014). The increasing importance of emerging technologies, a shift to observational, co-creative and anticipatory tools, and growth of the wider marketing insights industry has led to considerable debate within the marketing research industry as to the boundaries of the limited ‘other services’ included under the umbrella of marketing research (ESOMAR, 2014). More recently, industry definitions have included management consultancies, online analytics, IT and telecom research, social media communities, web traffic measurement, media monitoring, and survey software in their definitions of marketing research (ESOMAR, 2014). While acknowledged increasingly in industry reports and publications, these areas are typically given limited, if any, coverage in marketing research text books and pedagogical instruction.

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2 In the period 2010-2014 the average undergraduate marketing research class size was 247 students. On average just over 25 percent were international students, predominantly overseas Chinese and other Asian nationalities.
Table 1: Definitions of marketing research

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
<th>Key Elements of Definition</th>
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<tr>
<td>AMSRS (<a href="http://www.amsrs.com.au">www.amsrs.com.au</a>)</td>
<td>The systematic investigation of the behaviour, needs, attitudes, opinions, motivations or other characteristics of a whole population or a particular part of a population, in order to provide objective, accurate and timely information to clients (government, commercial and not-for-profit organisations) about issues relevant to their activities, to support their decision-making processes.</td>
<td>✔  ✔  ✔</td>
</tr>
<tr>
<td>ICC &amp; ESOMAR (2008, p.5)</td>
<td>The systematic gathering and interpretation of information about individuals or organisations using the statistical and analytical methods and techniques of the applied sciences to gain insight or support decision making. The identity of respondents will not be revealed to the user of the information without explicit consent and no sales approach will be made to them as a direct result of their having provided information.</td>
<td>✔  ✔  ✔</td>
</tr>
<tr>
<td>AMA (<a href="http://www.ama.org">www.ama.org</a>)</td>
<td>The systematic gathering, recording, and analyzing of data with respect to a particular market, where market refers to a specific customer group in a specific geographic area.</td>
<td>✔  ✔</td>
</tr>
<tr>
<td>Hair, Lukas &amp; Miller (2012, p.4)</td>
<td>Marketing research is the business function that links an organisation to its markets through the generation of information. This information facilitates optimal solutions to decision problems. The principal tasks involved with conducting market research include establishing the parameters of the research, designing the research, executing the research and communicating the results of the research.</td>
<td>✔  ✔</td>
</tr>
<tr>
<td>Malhotra (2014, p.19)</td>
<td>The systematic and objective identification, collection, analysis, dissemination, and use of information that is undertaken to improve decision making related to identifying and solving problems (also known as opportunities) in marketing.</td>
<td>✔  ✔  ✔</td>
</tr>
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3. PROFILE OF THE MARKETING RESEARCH INDUSTRY

Traditional marketing research is frequently found to have a low or negative profile as an industry (e.g., Boddy, 2010; Piercy, 2006), often being dismissed as ‘irrelevant’, ‘laughable’ and ‘over-valued’ (Gibson, 2000, p. 37). This image problem relates in large part to the confusion between research and telemarketing organisations (Blackadder, 2005), even though both academic and commercial definitions of marketing research clearly state the main purpose of marketing research as being information gathering to aid decision making. Some definitions (e.g., ICC & ESOMAR, 2008, p.5) even go so far as to state that “no sales approach will be made to [respondents] as a direct result of their having provided information”.

In addition to the confusion between marketing research and telemarketing, there is evidence of poor brand positioning of marketing research due to the lack of understanding of the contribution and benefits of market and social research (Allday, 2014; AMSRS, 2006). Similar to the often negative attitudes towards sales jobs (e.g., Fine, 2007; Milord & Perry, 1977),
these perceptions about marketing research have persisted, despite the roles of the salesperson and marketing researchers becoming more consultative in recent years.

Job seekers are not fully cognisant of the specific competencies that research agencies and client organisations currently need. A study conducted by O’Brien and Deans (1995) in the United Kingdom questioned 370 business students about their expectations of studying marketing and their future careers. The study found that only two per cent of students associated marketing research with the study of marketing, with students having a very narrow view of what marketing entailed (principally advertising and selling). Not surprisingly, marketing research has been considered to be the forgotten side of marketing (Kalra & Soberman, 2010). There also is evidence that new entrants into the marketing research industry often arrive there more by accident, than as a planned career path (Gibson, 2000; Mitten, 2000; Sweeney, 2001). Many young job seekers who do find themselves in marketing research, by accident or otherwise, also are ‘reluctant researchers’ who view their position as a stepping stone to another career (AMSRS, 2000; Sunderland, 2008).

The industry is largely moving away from the traditional and intrusive forms of quantitative marketing research that plague its reputation (e.g., household mail-back questionnaires, door-to-door and telephone interviews) (Allday, 2014). The industry fosters creativity and innovation, and is constantly updating in light of online (specifically social media) opportunities (IBISWorld, 2014). Marketing research professionals state that these limited and often negative perspectives are far removed from the reality of the industry. Although the statement is now over twenty years old, the following assessment still sums up the view of experienced marketing research professionals.

“I think most of us would agree that our jobs as researchers are good jobs. We’re generally on the leading edge of the new products and services our companies are thinking about introducing. The job itself offers the opportunity for creative thinking. Because the projects we work on are generally closed-ended, we realize the satisfaction of completion. Though clients can, at times, be pains in the neck, nevertheless we have the pleasure of working with a diverse group of individuals.” (Kitaef, 1992, p. 57)

4. FACTORS INFLUENCING STUDENT CAREER CHOICES

Consideration of Generation Y and their career choice strategies, criteria and motivation is required to gain a greater insight into how to attract graduates into the industry. Holland, Sheehan and De Cieri (2007) argue that the balance of power in employment relationships now favours employees, particularly knowledge workers. It is therefore important to discover more about your target employee and how to market to him or her in much the same way as brands market to consumers (Doke, 2007; Hor & Keats, 2008; Moroko & Uncles, 2009; Wilden, Gudergan & Lings, 2010).

The Generation Y cohort can be defined as those born between 1977 and 1992 (Treuren & Anderson, 2010), and encompasses the significant majority of current graduating tertiary students. Although there is a lack of large scale empirical research regarding Generation Y’s employment attitudes, there is an abundance of practitioner work dedicated to this subject. Much of the literature, however, has been predominantly based on observation (Cogin, 2012). Further, a review of the literature suggests that there is widespread disagreement over whether or not Generation Y is significantly different in terms of work expectations from their predecessors, namely Generation X and the Baby Boomers (cf. Alexander & Sysko, 2012; Treuren & Anderson, 2010). Treuren and Anderson (2010) outline that many practitioners uphold the belief that, in terms of employment, Generation Y is interested in and motivated by the opportunity for growth and development, a healthy work-life balance and having interesting and varied work. Members of Generation Y seek intrinsic and extrinsic rewards, and expect to be appropriately compensated in exchange for hard work (Alexander & Sysko, 2012). Generation Y also values the opportunity for workplace responsibility and leadership.

Generation Y generally define career success in terms of work-life balance (Alexander & Sysko, 2012; Cogin 2012). In the workplace, teamwork, team development and group cohesion is important to this generation, as is security (Alexander & Sysko, 2012; Cogin, 2012). Additionally, Generation Y likes to have up-to-date knowledge of the latest technology (Cogin, 2012). Because Generation Y has grown up with the Internet, mobile phones and social networks, technology is this generation’s ‘sixth sense’ (Alexander & Sysko 2012). This is perhaps the most distinctive characteristic of Generation Y.
5. Factors Influencing the Career Decision Making Process

Factors affecting career choice also need to be explored in order to gain a better understanding of why people make or do not make career choices. The decision-making process and how this is affected by career indecisiveness, aspirations and perceived or actual barriers is important to consider if one aims to increase the number of people attracted to marketing research.

According to Brown (2004), the university and post-university decision-making process related to career choice is based on an individual’s orientation to learning; ranging from his or her expectations and motivations, as well as life experiences and relationships with friends and family. An individual who has a low level of self-efficacy, an external locus of control and a high level of anxiety may find it difficult to make a career choice due to indecisiveness and indecision (Gaffner & Hazler, 2002). A lack of information may prevent individuals from being prepared to make a career decision. Internal conflicts also may arise when an individual has a desire for a certain occupation, but wants a larger salary than it appears to offer (Gaffner & Hazler, 2002).

Career aspirations are an important part of the career decision-making process. Research conducted by Metz, Fouad and Ihle-Helledy (2009) suggests that career aspirations and expectations are influenced by an individual’s cultural context, in particular one’s race, gender, socioeconomic status and sexual orientation. Lack of information about current labour market conditions also means that students’ career aspirations and expectations often do not match the reality. Students often experience real or perceived barriers that prevent them from attaining career aspirations. Swanson and Tokar (1991) suggest that barriers to choosing a career generally fall into the category of being either attitudinal or interactional. Metz et al. (2009) suggest that barriers can be defined as internal conflicts, namely conflicts with developing self-concept; or external conflicts, for example discrimination or perceived social-class standing. Common attitudinal or internal barriers include indecision or lack of information, ability, self-awareness; or confusion, other interests, satisfaction with current employment, personal qualities, changes in interests and motivation (Swanson & Tokar, 1991). In terms of interactional or external barriers, Swanson and Tokar (1991) suggest that the most common barriers range from financial barriers, the current job market, applicability of degree, level of education, experience, being unsure of the future, as well as social background. Whether or not these barriers exist, the important factor that will affect the outcome of career choice is how the individual perceives the barrier (Metz et al., 2009). For recruitment (and retention) purposes it is therefore necessary to understand how the industry is perceived by the pool of potential talent.

6. Research Design and Methods

The limited number of previous studies into student perceptions of a marketing research career favour an exploratory approach. This study collected qualitative information from undergraduate and postgraduate business, marketing and psychology students. Vox pop ‘man on the street’ interview techniques, focus groups and in-depth interviews were utilised. The use of multiple methods for data collection, as well as the involvement of several researchers in collection and analysis, provides methodological and investigator triangulation (Denzin, 2006).

Vox pop interviews

The vox pop technique, which derives from the Latin expression vox populi meaning ‘voice of the people’, was used to understand ‘top of mind’ perceptions of the marketing research industry and to provide initial insight into the research questions. The vox pop technique typically consists of a short interview with a member of the public canvassed for their opinion, usually in the street. The technique is commonly used in the media to test public opinion and reaction in relation to matters of current community concern. In keeping with the project aims, we used the vox pop technique in a more targeted setting, by asking students within the vicinity of the Business School their opinion of what marketing research means to them. Specifically, the type of vox pop used was a street poll which does not attempt to gather statistical information; rather it captures a series of indicative quotes. The style of questioning is such that the respondent is only given a short time in which to answer the question. In this manner we encourage ‘top of mind’ perceptions before the respondents are given time to think about the ‘technically’ correct answer or what the interviewer may want them to say. The technique also is fast and efficient, allowing a large number of people to be interviewed in a short period of time. Eighty-nine students were approached and asked, ‘What is the first thing that comes to mind when you think of marketing research?’ These short conversations also were audio recorded for transcription purposes and video recorded to allow examination of facial expressions if required.

Focus groups and in-depth interviews

Following the initial insight gained from conducting the vox pop interviews, focus groups and in-depth interviews were conducted to gain deeper insight into student perceptions.
In total, three focus group discussions were held with students. Participants in the focus groups were obtained largely from a list of undergraduate students currently enrolled in a marketing research course who agreed to participate in the research project for a minor course credit. In line with commonly accepted practice on focus group selection, the groups were as homogeneous as possible. This provided a comfortable environment that encouraged a willingness to engage in a free flowing dialogue without feeling intimidated or hesitant, and a lower likelihood of providing contrived or socially acceptable responses, yet with enough variation to allow for contrasting opinions. The groups comprised of 5-10 students each and were kept to 45 minutes duration to facilitate participant recruitment and avoid any respondent fatigue. They were audio recorded for transcription purposes and video recorded to allow examination of facial expressions and body language if required.

Focus group research is relevant as we seek to tap emotional and unconscious motivations not amenable to the structured questions of conventional survey research (Morgan, 1998). The moderator took steps to establish rapport with the participants, and used open-ended questions and probed responses as appropriate. One of the focus groups comprised five postgraduate psychology students. The purpose of separating this group from the others was to determine if the perceptions and knowledge of students outside marketing (yet still a viable cohort for industry employers) were different from those majoring in marketing or business. It was of additional interest that this group was made up of postgraduate students. Potential postgraduate psychology participants were initially identified through a private contact in the psychology programme at the same university. They were then personally approached by a member of the research team to assess their willingness to participate in the project. The second focus group consisted of ten undergraduate students majoring in marketing. The third focus group of seven participants comprised marketing, commerce and double degree students.

In-depth interviews also were held with four additional postgraduate marketing students. These students volunteered to assist the research team in response to a general call to Master of Commerce in Marketing (coursework) students for study participants. These students had been exposed to marketing research at a level equivalent to the advanced undergraduate students. In-depth interviews provide an effective means of obtaining rich insights into the phenomenon of interest as they provide detailed contextual information that cannot be obtained from surveys (Gwinner, Gremler & Bitner, 1998). Participants were assured in writing and at the beginning of the interview of their anonymity, and that quotes would not be attributed to them by name. The duration of these interviews was 20-30 minutes, and they were audio recorded. While this is a small number, the in-depth interviews also allowed investigation of whether private views differed from general views that might be voiced in the more public arena of the focus group and whether student perceptions were socially constructed. The same semi-structured interview guide was used in both formats.

**Participant characteristics**

At the commencement of this study, there were no preconceived ideas about how many participants or focus groups would be required to answer the research questions, and data were collected until saturation was reached. In total, 26 students were interviewed across the focus groups and in-depth interviews (see Table 2). This sample size is consistent with that used in qualitative study of undergraduate research experiences (n=25) (Adedokun et al. 2012), the role and appropriateness of undergraduate marketing research education in preparing students for industry (n=20) (Sweeney, 2001), and student awareness and perceptions of agricultural programmes and careers (n=28) (Baker, Irani and Abrams, 2011). The number of participants in this study also exceeds the recommendation of Guest, Bunce, & Johnson (2006). They found having twelve respondents produces ‘data saturation’ in most instances, uncovering 97% of the themes and 92% of the total number of codes used in qualitative transcripts.

With a single exception, participants in the in-depth interviews and focus groups were aged between 18 and 29. Fourteen were male and 12 were female. Ten participants indicated they were of a nationality other than Australian. We aimed for diversity in terms of course major, year of study and ethnicity, and had an approximately equal number of males and females. Our assumption was that this would maximise variation and highlight any common core of perceptions more than a homogenous sample would (Polkinghorne, 2005). This is turn would promote the external validity of the findings. Similar methodological approaches have been used to investigate student career options in agriculture and marketing research (Baker, Irani & Abrams, 2011; Marshall, 2010). Table 2 provides a summary of participant characteristics for the in-depth interviews and focus groups.
### Table 2: Focus group and in-depth interview participant characteristics

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Age</th>
<th>Nationality</th>
<th>Study history</th>
<th>Previously taken marketing research course/s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOCUS GROUP 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>F</td>
<td>24-26</td>
<td>Australian</td>
<td>Bachelor of Business (Marketing); Bachelor of Psychology (Hons); Master of Industrial &amp; Organisational Psychology (2nd Year)</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Bachelor of Psychology (Hons); Master of Industrial &amp; Organisational Psychology (2nd Year)</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>PhD Psychology (2nd Year)</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>24-26</td>
<td>Australian</td>
<td>Master of Industrial &amp; Organisational Psychology (2nd Year)</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>24-26</td>
<td>Australian</td>
<td>Master of Industrial &amp; Organisational Psychology (2nd Year)</td>
<td>No</td>
</tr>
<tr>
<td><strong>FOCUS GROUP 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>F</td>
<td>18-20</td>
<td>Indonesian</td>
<td>Bachelor of Commerce (Marketing)</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Bachelor of Arts (Communications); Bachelor of Commerce (Marketing, Anthropology, Management)</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>27-29</td>
<td>Australian</td>
<td>Bachelor of Commerce (Marketing, Management)</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>18-20</td>
<td>Malaysian</td>
<td>Bachelor of Commerce (Accounting, Finance, Marketing)</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>18-20</td>
<td>Australian</td>
<td>Bachelor of Commerce (Marketing, Management)</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>18-20</td>
<td>Indian/Australian</td>
<td>Bachelor of Science</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>18-20</td>
<td>Australian</td>
<td>Bachelor of Science/Commerce (Marketing, Employment Relations, Psychology)</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>35+</td>
<td>Australian</td>
<td>Bachelor of Commerce (Management, Marketing)</td>
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</tr>
<tr>
<td>9</td>
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<td>21-23</td>
<td>Bruneian</td>
<td>Bachelor of Commerce (Management, HR, Marketing)</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>21-23</td>
<td>Australian</td>
<td>Bachelor of Commerce (Accounting, Marketing)</td>
<td>No</td>
</tr>
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</table>
Table 2: Focus group and in-depth interview participant characteristics (Continued)

<table>
<thead>
<tr>
<th>FOCUS GROUP 3</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>21-23</td>
<td>Singaporean</td>
<td>Bachelor of Commerce (Economics and Finance)</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Civil Engineering / Economics</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Electrical Engineering / Finance</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>21-23</td>
<td>Singaporean</td>
<td>Master of Economics</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>21-23</td>
<td>Malaysian</td>
<td>Bachelor of Commerce (Marketing)</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>21-23</td>
<td>Singaporean</td>
<td>Bachelor of Commerce (Finance)</td>
</tr>
<tr>
<td>7</td>
<td>M</td>
<td>24-26</td>
<td>Singaporean</td>
<td>Bachelor of Commerce (Marketing)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IN-DEPTH INTERVIEWS</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>27-29</td>
<td>German</td>
<td>Bachelor of Arts (Communications); Master of Commerce (Marketing)</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Bachelor of Commerce (Accounting/Financial Planning); Master of Commerce (Entrepreneurship + e-marketing)</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>21-23</td>
<td>Australian</td>
<td>Bachelor of Commerce (Marketing and HR); Master of Commerce (Marketing and Finance)</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>18-20</td>
<td>Indonesian-Australian</td>
<td>Master of Commerce (Marketing)</td>
</tr>
</tbody>
</table>

Note: Data on participant age was collected using a categorical scale

**Interview process and derivation of themes**

Participants in the in-depth interviews and focus groups were first asked about what they were looking for in a graduate position, their career decision-making and expectations development. They were then asked a series of questions that included what they believe a job in marketing research entails, who they think are the types of people who work in marketing research, how they would find opportunities in marketing research, awareness of marketing research opportunities, perceived ease of finding a job in the industry, and whether they would consider a career as a marketing researcher. In order to better understand the influence of information provision on career perceptions, participants were lastly given an accurate description of the industry and marketing research roles [see Footnote 1], and asked if this modified their perceptions in any way.

Interview and focus group transcripts were analysed to identify common and recurrent perceptions as they were described by the participants. The thematic analysis process outlined by Braun & Clarke (2006) was used for this purpose. The process followed a number of recursive stages including the generation of initial codes, search and review of themes, clear definition and naming of each theme, and the selection of compelling extracts to relate to the research objectives and literature. The interviewer or moderator triangulated findings from the transcripts with at least two other researchers to gain a different perspective and to debate interpretations. To promote external validity, we identified consistencies and differences in findings, interpretations and constructs from other studies. This process and analysis allowed the researchers to iteratively link data to theory in an inductive process (cf. Parkhe, 1993). In accordance with this process, the focus groups and in-depth interviews were held during the same period of time, with constant feedback loops between the two methods. It was very soon evident that the findings from both methods were broadly convergent. That the findings from the focus groups and in-depth interviews were mutually confirming adds credibility and persuasiveness to our results.
While this research had the support of AMSRS and the general research objectives were developed in consultation with members of the local executive, no-one from AMSRS participated in the research process and all information was analysed without their involvement.

7. RESEARCH FINDINGS
The presentation of the research findings is organised around the three primary study objectives: [1] exploration of the awareness and perceptions of marketing research and the industry; [2] investigation of the factors influencing consideration of a career in marketing research, and [3] understanding the influence of industry knowledge on perceptions of marketing research as a career choice.

7.1 Awareness and perceptions of marketing research and the industry
In order to address the first research objective, students were questioned on their awareness and understanding of marketing research, perceptions of employment roles in marketing research, and perceptions of marketing research professionals.

Awareness and understanding of marketing research
When asked for their ‘top of mind’ associations with regards to their understanding of marketing research, participants supplied a diverse range of answers. Figure 1 presents the key themes derived from the vox pop analysis. The X axis categorises themes as being distinctly marketing research related (e.g., surveys, quantitative analysis), related to some other area closely linked to marketing research (e.g., marketing management, advertising or sales) and ‘other’ unrelated areas. The latter category largely represented comments that demonstrated a lack of understanding as to what marketing research involved. The Y axis of Figure 1 displays the key elements derived from industry and academic definitions of marketing research (see Table 1 for these definitions). The Y axis of Figure 1 also has two additional categories to capture the other context of the themes arising from the vox pop interviews – these being experiential elements (often linked to the student experience of learning marketing research) and an ‘other’ category, again to capture areas not strictly related to the formal definitions of marketing research or learning experience.

Figure 1 demonstrates some very interesting patterns. Notably, the largest number of associations with marketing research were centred on the gathering and analysis of marketing research data, rather than its uses. In addition, there was a heavy emphasis on quantitative research and surveys. This is a frequent observation elsewhere (e.g., Clawson, Hoffman & McCann, 2001; Marshall, 2010). The other common associations centred on interacting with people or consumers. Interestingly, there were very few associations with the information provided or uses of this information.

Figure 1: ‘Top of mind’ associations of marketing research

Note: The size of the bubble indicates the number of students raising any given issue.
Figure 1 also reveals further trends, these being: (1) there was a reasonable amount of misunderstanding as to what marketing research comprises, with a number of students stating that they simply did not know or providing responses that in no way related to marketing research (e.g., in the ‘other’ bubble vague responses such as ‘companies’ and ‘dates’ were received), (2) A number of students discussed their experiences or emotions relating to the learning process rather than discussing the marketing research field itself - for example, in support of the findings of Marshall (2010) a number of students commented that marketing research was ‘boring’ or ‘difficult’, while a small number noted that it was ‘fun / interesting’. (3) Several students discussed areas on the fringe of marketing research itself, such as advertising or marketing management (e.g., branding) rather than core principles of marketing research, and (4) there was confusion among some students between marketing research and telemarketing / sales. These latter two findings support those of O’Brien and Deans (1995), who note that advertising and selling dominate business student perceptions of the marketing field.

As with the vox pop interviews, within the in-depth interviews and focus groups there was an emphasis on quantitative marketing research, the analytic process and fieldwork. Fieldwork was commonly perceived to be something that all marketing researchers would undertake themselves rather than being a specialised service, which is often contracted to field specialists. Very few participants discussed the uses of marketing research information. There also was a fair amount of confusion as to what marketing research entails and a number of emotive responses when students were asked what springs to mind about marketing research. These were, in the large part, rather negative. Students typically spoke of the lack of creativity and focus on numbers as being boring and/or difficult.

Some students with a more sophisticated understanding of the marketing research industry perceived the profession to be about analysis, interpreting results and solving problems. However these students were in the minority.

“Thinking about what you want to measure and how you will measure it.” (Female 28, MCom [Marketing] student)

“Going out and interacting with people and collecting data. For the analysts it’s a lot of collecting data and consolidating data.” (Male 22, MCom [Marketing and Finance] student)

“It’s about problem understanding.” (Focus group one, postgraduate psychology student)

Perceptions of employment roles in marketing research
Malhotra (2014) notes that marketing research is conducted by a range of companies, including full and limited service agencies, as well as in-house (internally) by many firms. Within these broad service offerings, there are a number of research roles undertaken. At the broadest level, researchers are often classified as having a qualitative or quantitative role.³ The vox pop interviews reveal that there is still low awareness of the qualitative aspects of marketing research, with five times as many respondents discussing quantitative research as compared to qualitative. Findings from the focus groups and in-depth interviews support those of the vox pop interviews. Specifically, participants focussed heavily on the quantitative elements of marketing research and the fieldwork (typically in relation to collecting survey data). Responses like ‘statistics’, ‘maths’ or ‘quantitative’ were commonplace, particularly from students who had completed or were currently studying a marketing research course, while very few participants even mentioned the qualitative aspects of marketing research. In addition, there also was a lack of understanding among participants as to what a role in marketing research comprised. The finding that many students have a poor understanding of what is involved in a career in marketing research, including those currently taking a marketing research unit, is consistent with the work of Freeman and Spanjaard (2012). Many students took the view that marketing research was ‘less sexy’ and more behind the scenes than other marketing roles. This may be one reason why the industry struggles to attract Generation Y, who are found by Alexander and Sysko (2012) to exhibit hedonism, narcissism, and a cavalier work ethic. Study participants also often perceive marketing research to pay less than competing industries such as other areas of marketing, finance and engineering. Students believe that marketing research is more unstable than other professions; that it is more dependent on demand. The economic downturn of 2008-2009 hit the industry hard, despite the relative strength of the Australian economy during that time. Industry revenue during 2008-2013 fluctuated considerably, although overall remained relatively static in real terms. The resultant cost-cutting post

³ While it is acknowledged that a number of professionals’ roles will incorporate both qualitative and quantitative skill sets, this is still a common delineation.
the global financial crisis led to reduced marketing budgets, which in turn reduced demand for industry services. Despite this setback, marketing research is seen as essential for companies across a variety of industries and therefore growth is increasing as the economy stabilises and business confidence increases. Over the next five years, industry revenue is projected to rise at an annualised 1.6 per cent to reach $2.6 billion in 2019-2020, as demand for research and analytics increases steadily (Allday, 2014). Another key issue was that a number of students did not have enough knowledge of the vocation to comment.

"Professions like marketing are so nondescript - you can’t pinpoint what a marketer does, whereas most people have some perception of what an accountant does.” (Focus group two, undergraduate marketing student)

Despite many misconceptions about the profession, there were some favourable perceptions of marketing research, demonstrated in the following quotes.

"Marketing research is quite cool as I would be able to use some of the accounting skills I learnt, but the data analysis [in marketing research rather than accounting] would be more interesting, being consumer behaviour focused.” (Male 22, MCom Marketing and Finance student)

"At a conceptual, big picture level, market research is extremely interesting.” (Focus group one, postgraduate psychology student)

While the overall picture may be sobering reading for those in the marketing research industry, the findings are typical of student perceptions of a number of academic programmes. Baker, Irani and Abrams (2011) highlight that students of agriculture and horticulture also are unaware of careers available in the area, and have negative perceptions of vocation in the agriculture field. Similar findings also are common amongst accounting and information systems students, and a significant gap exists between student perceptions and professional accounting and IS roles (Liu, Kang & Lilie, 2011; Mladenovic, 2000; Pratt, Hauser & Ross, 2010).

Perceptions of marketing research professionals

Students were asked what they thought were the type of people best suited to a career in marketing research and what their perceptions of marketing research professionals were. An overwhelming number of respondents commented that a career in marketing research is best suited to people with an interest / background in mathematics. There also was a perception among many, that the people working in marketing research are typically perceptive and analytical, and often more detail oriented that in other marketing fields. Some respondents noted that an underlying curiosity was a key skill for marketing researchers, while others acknowledged the requirement of having people skills. A few participants also appreciated that there were different job opportunities for different people; primarily "numbers and people" people and similarly those interested in "qualitative or quantitative” marketing research.

7.2 Factors influencing consideration of a career in marketing research

In order to address this research objective students were questioned on the criteria that are important when looking for graduate positions, career decision making influences and how they formed their career expectations, awareness of marketing research opportunities, their perceptions of the ease of finding employment in the marketing research industry, and consideration of marketing research as a career choice.

Key criteria in the evaluation of graduate employment opportunities

Many participants in the in-depth interviews and focus groups spoke about their aspirations to secure a position that was interesting, and in which they could challenge their abilities and be presented with opportunities for growth. Often this meant international employment opportunities. This supports the assertions of Treuren and Anderson (2010) who propose that Generation Y is interested in and motivated by the opportunity for growth and development, as well as increased responsibility and leadership opportunities. However, there was also an undercurrent in some students who expressed concerns that they were not pushed too far beyond their comfort zones, such that they would lack the required skills. This concern expressed is akin to the internal barriers discussed by Swanson and Tokar (1991) who found that common attitudinal or internal barriers can include doubts about ability, self-awareness and personal qualities. This sentiment is evidenced in the following comment:

"[I want to] enter into something that does challenge you and force you to work with other graduates... as well as something you are comfortable with and good at - that you know you could excel in.” (Focus group three, commerce student)

In addition to seeking opportunities for growth, the other main theme that arose from this part of the discussion was the requirement for a healthy work-life
balance. A number of other researchers have found this to be a key factor in Generation Y employment choices (e.g., Alexander & Sysko, 2012; Cogin 2012; Treuren and Anderson, 2010).

**Career decision making influences and expectations development**

Student career knowledge is often found to be lacking. Students in general overestimate how much education they need for their preferred career; with previous studies highlighting that psychology majors often are more inaccurate than other student groups (Green, McCord & Westbrook, 2005; Zechmeister & Helkowski, 2001). However, careers information is found to improve the accuracy of educational requirements significantly (Green et al., 2005). Career expos and online avenues were where many respondents in this study gathered their information on particular careers. Especially for psychology student participants, their direct exposure to the marketing research industry was limited.

"When we have psych career expo nights all these other companies come but never anyone from marketing departments." (Focus group one, postgraduate psychology student)

Work experience was found to have shaped the career choices for several participants. Many students felt they would benefit from more work experience to make a truly informed decision about their future career path. Psychology Masters students noted that they complete three work placements as part of their course, and would welcome the opportunity to do one for a general marketing or marketing research company. However, they indicated that this had not been offered during their studies.

In seeking to self-manage their careers, people seek help from many different sources, formal and informal (Bosley, Arnold & Cohen, 2009; Greller & Richtermeyer, 2006). Students in this study relied on their previous experiences and relationships to inform their motivation to work in a particular industry or profession after graduation. Family influences, expectations and pressures had a significant impact on how many of the respondents were exposed to a career and their determination to follow this through. Previous graduates, siblings and friends with two to three years’ experience are also seen as a strong influence.

"...peer influence – stuff that people say, accounting and finance you can get a higher salary, you can advance faster than marketing. Marketing is the most interesting of my three majors, but in terms of finding a job in the future people are telling me to just go with accounting and finance." (Focus group two, undergraduate marketing student)

**Awareness of marketing research opportunities**

While students noted their desire for career growth and international opportunities in general, there was limited discussion on internal or international marketing research opportunities. However, there was a strong perception among participants that marketing research opportunities in Western Australia (the study location) were limited, and therefore most students believed that it would be easier to seek marketing research roles on the East Coast of Australia (principally in Melbourne and Sydney). This perception is valid given that over 70 percent of marketing research establishments are located in New South Wales (43.9%) and Victoria (27.5%), as compared to Western Australia (6.7%) (Allday, 2014). However, there was very little knowledge as to who were the major marketing research firms in Australia. Conversely, most respondents could name the ‘big four’ accounting firms.

Students were unaware of significant growth in the marketing research industry in the Asia-Pacific region, which Australia is ideally situated to capitalise on through supply of trained marketing research executives. In 2013, Asia-Pacific (excluding North America) accounted for 15 percent of global market research turnover. While China still accounts for most of the regional growth, smaller Asian markets, albeit from an often limited base, include some of the fastest growing markets with 2013 net growth rates for marketing research expenditure for Myanmar at 50 percent and Bangladesh, Laos, Cambodia and Pakistan all recording double digit growth (ESOMAR, 2014).

In addition, students appeared unaware of the rise in internal marketing research as the result of an increased availability of online tools, research panels and user-friendly software. Recent research from the United States, on small to mid-sized firms with a marketing spend generally less than USD1 million annually, indicate that although over 60 percent of respondents believed that marketing analytics was beneficial or very beneficial to their company performance, only just over 30 percent of the firms considered marketing analytics were well-integrated into their organisation’s operations. For most firms surveyed limited analytics skills and knowledge were a key challenge. Also, almost 50 percent of the analytics tools used were mostly out of the box (Sullivan, 2014).
**Perceived ease of finding employment in the marketing research industry**

Students with some knowledge of the matter agreed that it was not easy to get a job in marketing research. They also believe it is easier to get a job in an accounting and finance position, and to advance in these roles. However, following on from the findings presented in the previous section, most participants did not have enough of an awareness or understanding of marketing research opportunities to support or argue for this consensus view, which is a significant issue for the marketing research industry in and of itself. Some students felt that if they had not heard about jobs within the profession, or indeed about the profession itself, there must be a low demand for employees. Also, for international students, having the profession become part of a permanent residency scheme increased the attractiveness of a career in marketing research.

“I haven’t heard much about it [the marketing research industry] ... haven’t heard of many jobs, so I assume there aren’t many.” [Focus group three, commerce student]

“If there were more opportunities for people that would make [marketing research] a lot more attractive to people. You would put a lot more time into it if you thought there were more opportunities for success.” [Male 22, MCom Marketing and Finance student]

“A lot of Asian students go into accounting because it is part of the skilled work opportunities – for the sake of getting permanent residency.” [Focus group two, undergraduate marketing student]

**Consideration of marketing research as a career choice**

The majority of respondents indicated that very little consideration of a career in marketing research had occurred to date, and that this was unlikely to change once they graduated or in the future. However, while the majority of students would not actively seek a position in marketing research, some students suggested that they would contemplate the possibility if a ‘good offer’ were made or if a position was effectively marketed. A key finding from the research indicated that of all the respondents, it was the postgraduate psychology students who appeared the most interested in a career in marketing research. Some of these students had already seriously considered the option, and it seemed that the discussion itself opened up other students to consideration of the profession. Psychology students felt that many skills desired by the marketing research industry were integral to their studies, yet these respondents were under the impression that having a psychology background would limit them when seeking a career in business.

“I feel like if I applied [for a marketing research position] with a psychology background, I probably wouldn’t be recognised. All the career opportunities I hear of are through my psych network at uni and everyone seems to be going everywhere except marketing.” [Focus group one, postgraduate psychology student]

“There needs to be more bridges [between psychology and marketing]. We are perfect for researching things like consumer behaviour and yet we are never talked about [considered for these roles]. It’s also never talked about in our course at all. It is reinforced that marketing and psych are separate areas and you should stick to your own area.” [Focus group one, postgraduate psychology student]

“I also feel that the skills we have are very relevant [to marketing research roles] but they would be specifically wanting students with marketing qualifications.” [Focus group one, postgraduate psychology student]

**7.3 The influence of industry knowledge on perceptions of marketing research as a career choice**

According to Gaffner and Hazler (2002), a lack of information may prevent individuals from being prepared to make a career decision. Furthermore, unreliable information relating to occupations may be connected to the individual’s preferences, perceived capabilities, or occupational alternatives regarded as relevant. New occupational knowledge can introduce the possibility of new career self-concepts, and encourage individuals to revise their career self-concepts and their career direction (Bosley et al., 2009). The vast majority of respondents in this study had either very little knowledge of the marketing research industry, or a significant short-sightedness. However, most students found the industry a lot more interesting and appealing after being prompted with an accurate description of the profession; in particular when provided with information about the insights and decision making aspects of marketing research. Interestingly, this was the component of marketing research least discussed in the qualitative research conducted in this study. For some students the consultancy aspect was a revelation and a significant source of appeal.

“If marketing research was marketed more as a consultancy role, more people would be interested in a career as a market researcher.” [Female 28, MCom (Marketing) student]
"I can see how you would want a market research job though, it’s definitely not telemarketing.” (Male 22, MCom [Entrepreneurship/E-Marketing] student)

Several students thought the industry sounded more challenging and creative than they had previously believed; such qualities being desirable to the respondents. Baker et al. (2011) also found agriculture students’ perceptions were positive after hearing about the nature of agricultural work and available careers; with students expressing the need for more marketing and branding of the industry so that they would be aware of careers available in this field. Nonetheless, while a more accurate and complete understanding of the marketing research industry did foster more favourable perceptions of the profession, it could not modify the decision making and preferences of students already set on a career path.

8. CONCLUSIONS AND IMPLICATIONS

The findings of this study highlight a number of issues that require attention if the marketing research industry is to attract and retain high quality university graduates. The following discussion will focus on student perceptions of marketing research often being misinformed or limited, their narrow career view and general lack of awareness of the marketing research industry and opportunities, psychology graduates as a generally untapped source of potential hires, and the need for collaboration with academia. To appropriately address the aforementioned issues requires a coordinated approach from the industry body (AMSRS), individual marketing research organisations, and institutions and instructors involved in marketing research and related instruction.

Student perceptions of marketing research are often misinformed

Contrary to the literature, our research suggests students’ negative perceptions of working as a marketing researcher stem more from an association with number crunching and perceiving the profession to be predominantly about statistics, than associations with ‘telemarketing’ (cf. Blackadder, 2005). A possible explanation for this could be students’ age, with Generation Y using mobile telephones far more than fixed line, and thus not being as exposed to telemarketing and survey calls as other generations. It may also be due to our student sample being exposed to marketing and research units at university, which have perhaps had too great an emphasis on statistics, as previously identified by Freeman and Spanjaard (2012) who suggest that marketing research syllabi in various Australian universities have not adapted well to the needs and realities of the corporate world.

Student responses, regarding their understanding of marketing research, focused heavily on gathering and analysing data, with few highlighting creation of marketing insights, and improved understanding and decision making. This finding may reflect the observation that a typical marketing research textbook devotes about 100 pages to data collection, 200 pages to data analysis, limited coverage on the role and importance of marketing research in generating insights, improved understanding and decision making, a half page to problem definition, and nothing at all to idea generation, idea evaluation, or theory (Gibson, 2000).

Addressing common public misconceptions about marketing research and especially those of students perceiving a marketing research job to be ‘boring’ is required. When marketing research is an elective course, students may not take the course if they perceive it in such negative terms. The negative perceptions of marketing research also may undermine the quality of marketing research education, as students could tend to take a surface approach to study if they think the subject is just mechanical number crunching (cf., Liu et al., 2011). The industry and academic instructors need to paint a different picture of what a marketing researcher actually does, stressing the conceptual level and strategic side of marketing research roles, and lessen the emphasis on data and delivering surveys. The consultative elements of the role need to be made more obvious. Students often cited ‘surveys’ when asked about what a marketing researcher does, when in fact direct quantitative data collection is not normally part of a marketing researcher’s role, as fieldwork teams generally administer the surveys. Addressing these misconceptions at this grass roots level would also address the overarching issue that many students simply did not have much of an idea about the industry at all. The industry needs to present the diversity and potential of a career in marketing research, while offering advice to guide students through the process of obtaining a position in the profession.

Marketing research is not alone as an industry that suffers from an often poor reputation, negative press coverage and public perceptions. Nursing is another such example (Parish, 2004). An improved image, as well as increasing the perceived attractiveness of a career in the marketing research industry, also could boost current staff morale and enhance the work they are doing. Occupational perceptions influence the retention of new graduates (Dubinsky & O’Connor, 1983). It appears as well that there are widespread misperceptions of the value of marketing research in
Students have a limited career view

Students often are found to have a limited career world-view generally, with little understanding of how careers work, occupational knowledge, the work content or role routes to them (e.g., Bosley et al., 2009). Likewise, students in this study also often had no, narrow or negative perceptions and knowledge about marketing research. This suggests that as a result there may be limited active searching for further information on careers in marketing research. Baker et al. (2011) found the key reason for seeking information about a career was the passion students felt for the industry or subject. Unfortunately there does not appear to be a lot of love for marketing research at present.

A lack of information often heightens career indecisiveness (Gaffner & Hazler, 2002). Conversely, students with accurate perceptions may be more likely to find appropriate jobs; increasing the chance of a good job-person match (Rynes & Gerhart, 1991), reducing the incidence of accidental or reluctant researchers among new hires, and increasing retention rates. The importance of job stability is noted elsewhere as an important factor in student career choices (Baker et al., 2011). The marketing research industry needs also to counter perceptions that it is more unstable than other industries, for example, by highlighting ‘big data’ and social media, and the significant opportunities that lie there.

Participants indicated that work experience shaped their career choices; a finding repeatedly found in studies investigating the value of practical experience on perceptions of business careers (e.g., Bristow, Gulati & Amyx, 2006; Sojka, Gupta & Hartman, 2000). Occupational internships lead to greater understanding of task and social components (Spooner, Flowers, Lambert & Algozzine, 2008). The Graduate Traineeship Program offered by AMSRS could be better leveraged and offered to students directly, as it is unlikely students will seek this information without being prompted, due to the low profile experienced by the industry. At the time of writing, the authors believe the programme is currently only offered in Victoria.

Increasing the visibility of the marketing research industry

The limited visibility of the marketing research industry is a major issue. How can the marketing research industry gain students’ attention and more accurately convey job expectations? Participants in this study indicate that in respect of other industries, for example accountancy, they know exactly what type of company and specific names of companies they might work for when they have completed their degrees. Baker et al. (2011) highlight that students’ perceived barriers to entry could be overcome if the industry was more visible. Marketing research companies could market themselves directly to recruit students through a well-recognised brand. Relationships also could be developed with professional student organisations such as the International Association of Economics and Commerce Students (AIESEC) as a further channel to provide career specific information. Because marketing research has a negligible presence in the student recruitment space, students perceive that there are limited if any opportunities for graduate entry level positions. Students are unlikely to choose a career if they do not recognise a company or organisation in that field that they could work for post-graduation (Baker et al., 2011). Agencies and organisations need to stress their company culture in ‘work hard, play hard’ terms in order to assure students that they will not be worked into high stress levels. International students in our study also identified a desire to see the marketing research profession become part of a permanent residency scheme, as accounting is. This would greatly increase the attractiveness of a career in marketing research within this student cohort.

A key challenge for the marketing research industry is to ensure that students are receiving reliable information on which to base career choice decisions. The industry needs to increase its presence at career expos and also look to build a more relevant online presence. Career expos and online avenues are where many respondents gather their information on particular careers. Information can be disseminated through recruiters at job fairs. Generation Y has grown up with the Internet, mobile phones and social networks. Developing the online presence of the marketing research industry appears imperative. Active websites can provide job information and training tools to aid in the job search process. Social network sites are recognised as a source of news information among users 18-24 (Baumgartner & Morris, 2010), and along with exposure to other online materials are an important influence on attitudes and behaviour (Peter & Valkenburg, 2006; Zhang, Johnson, Seltzer & Bichard, 2010). The potential for
this medium to provide occupational information is enormous. It is important to build relationships with students and prospective industry employees in the place where they are most comfortable interacting [Provitera-McGlynn, 2005].

The untapped potential of psychology graduates
Swanson and Tokar [1991] suggest that a common barrier to applying for a job was questioning the applicability of one’s degree; with students being unsure what sort of jobs they could legitimately seek with their specific educational background. This method of thinking was certainly apparent in many study participants’ answers. Many students, most noticeably psychology majors, were not sure that they would be qualified to enter the industry. Bosley et al. (2009) found career aspirations are raised as a result of greater belief in people’s capacity to take on unfamiliar roles that often provide challenges to their former career self-concepts. Self-efficacy, which relates to a person’s perception of their ability to execute a target behaviour, is central to career intentions (Shapero & Sokol, 1982).

There is evidence that some marketing research firms believe that more appropriate skills for entry level positions are found in students from non-commerce disciplines, such as psychology [Sweeney, 2001]. In our study, psychology courses were noted as offering substantial depth and knowledge of research issues. The marketing research industry should communicate to psychology students that they possess a skillset strongly desired in the industry, as a key finding from the research indicated that out of all study participants, it was the postgraduate psychology students who seemed most interested in a marketing research career and the least confident of the relevance of their qualifications. Stronger links to psychology departments need to be forged and students should be encouraged to take electives in marketing research. Internships could be offered to top performing psychology students showing an interest in consumer behaviour and with strong research skills.

A need for greater industry-academic collaboration
There needs to be greater industry-academia collaboration to address the issues identified in this study. Yet, despite this recommendation being first made over a decade ago by Sweeney (2001), universities and industry still act relatively independently. There also are suggestions that major gaps may exist between how practitioners and academics think marketing research should be positioned in marketing courses (Stern & Tseng, 2002). Course coordinators and lecturers need to understand the types of activities that take place in business, and the skills needed and decisions students will be required to make in their business careers. Marketing educators must stay current with developments in the marketing research industry and be able to successfully select and infuse real world resources into their teaching programmes. Many marketing academics appear to have limited direct practitioner experience, or none at all [Cox, 2006]; with management education often seen as too academic and remote (Beamish & Calof, 1989). Collaboration with local marketing research practitioners allows for the development of tasks that marketing managers and marketing research consultants must perform, thus enriching the classroom.

It also is worth noting that the objectives of many marketing research courses may diverge from the needs of the marketing research industry. Undergraduate marketing research courses often have a primary goal of instructing students to be sophisticated consumers of research, as most have traditionally not become researchers themselves. However, this position also may require re-evaluation in light of developments in online tools, panels, user-friendly software and marketing analytics that is encouraging growth in internal marketing research. This continued evolution will likely result in a greater proportion of future graduates conducting marketing research within their organisation. Additionally, marketing research is generally offered as a required course over a single semester in the undergraduate marketing programme. This limited offering is unlikely to meet all the needs of industry, and greater communication between academics and practitioners can provide marketing research agencies and other organisations with more accurate expectations and the ability to provide enhanced preparatory programmes for their new recruits. Marketing research understanding also could be better integrated in general business and marketing courses. In the corporate environment insufficient attention is allocated to understanding how marketing research affects marketing decisions, with resulting business decisions often being suboptimal [Kalra & Soberman, 2010].

An opportunity for industry to influence marketing research pedagogy
It is frequently argued that there is a gap between what is taught in the classroom and what businesses feel they need from employees [e.g., Kolhede, Genin & Gomez-Arias, 2011]. Industry support through the provision of resources to enhance marketing research education provides an effective avenue to influence course content. Recently the Australian Competition and Consumer Commission (ACCC)
have developed a comprehensive library of teaching materials focusing on Australian competition and consumer protection laws. These resources, which are freely available to instructors and regularly updated, include online materials, cases, assessment quizzes, course materials, learning objectives, PowerPoint slides and discussion questions. An example of an industry/university collaboration can be found at the University of Auckland, where third year advanced marketing research students work with industry mentors on a real-life client project. This collaboration has resulted in much greater student engagement (as evidenced in student evaluations), a significant increase in the number of students wishing to take the elective course (a 90 percent increase in enrolments has been evidenced over the last three years since the introduction of this programme) and a number of graduate placement programmes provided by employers. AMSRS could look into a similar provision of resources to marketing research educators and wider business instructors; including many of the materials listed above and in addition research proposals, mentor schemes, industry/university projects, data sets and a list of industry guest speakers. This would be likely to be an excellent means of industry communication and an opportunity to shape marketing research education in Australia.

### 8.1 Study limitations and directions for further research

The discussion in this paper reflects the perceptions and experiences of our participants, not necessarily the full range of attitudes and behaviour. While the data were collected during only a single semester, there will most likely be a high degree of consistency in student attitudes and perceptions from semester to semester, as students in each successive semester are from the same general population of students. Although this is an exploratory study, the findings are broadly consistent with the limited number of studies that have explored similar issues (e.g., Boddy, 2010; Freeman & Spanjaard, 2012; Marshall, 2010; Piercy, 2006; Sweeney, 2001).

While this study highlights student perceptions of marketing research, limited understanding of the industry also appears widespread in the general community. Investigation of public understanding of the activities and practices of marketing research would be valuable, as public image and advice, information and recommendations from friends and family appear important in student career decision making. There is also a lack of research as to how individuals perceive the role of informal career helpers in shaping their careers (Bosley, Arnold & Cohen, 2009).

An investigation of Australian media representations of marketing research also would be valuable. Media is an influence on career opportunities both directly and indirectly through family and friends (Zhang, 2007). Similar research to that undertaken in this study could be done also with new entrants to the marketing research industry. The importance of such research and effective internal marketing is highlighted by findings that new entrants into the marketing research industry often arrive there more by accident than as a planned career path (Gibson, 2000; Mitten, 2000; Sweeney, 2001), and are ‘reluctant researchers’ who view their position as a stepping stone to another career (AMSRS, 2000; Sunderland, 2008).

Given the growth in internal marketing research it would be timely and valuable, from an industry and pedagogical perspective, to investigate the types of support that are provided in-house by firms’ marketing research and related activities. In an environment where firms increasingly have the ability to conduct significant stages of the marketing research process internally, another important issue requiring exploration is what marketing research clients want from their supplier.

Future research also is needed to determine how to develop effective strategic communication plans for repositioning the marketing research industry. It is important to improve communication at all levels when working to build a strong service brand (Brodie, Whittome & Brush, 2009). Limited research has so far examined the influence of job websites on student perceptions, and established which online materials and resources are more successful in promoting positive prospective applicant perceptions.
REFERENCES


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In this final edition of Market & Social Research, AMSRS decided that it would be helpful to members and to a wider audience if significant submissions to the third RICA Market Research Effectiveness Awards were published. As a consequence a number of authors were approached and invited to have their submissions included. Those that agreed are published in the following pages as “Invited Commentaries.” They illustrate the very best that the industry has to offer business, non-profits, government and the community generally.

David Bednall, Editor.
Winner – Business to Business

National Australia Bank Quarterly Business Survey
Sarah Wrigley, Gundabluey Research

THE BRIEF
NAB’s Quarterly Business Survey has been tracking Australian business conditions and confidence for almost 24 years. It is regarded as a leading indicator of economic conditions in Australia, and is used extensively by businesses, the Reserve Bank and Federal Government.

The Reserve Bank of Australia is a high user of the NAB’s Quarterly Business Survey. Results of the survey represent a significant part of the RBA’s analysis of the business sector in its Statement on Monetary Policy.

OBJECTIVES AND METHODOLOGY
The National Australia Bank Quarterly Business Survey has been conducted every quarter since September 1990, and is Australia’s leading indicator of business sentiment. Its key objective is to provide a reliable and timely measure of business confidence and business conditions well in advance of official data. It includes past three month performance and expected next quarter’s performance on a range of key indicators such as trading performance, profitability, sales margins, stock, etc, as well as current and expected changes in costs associated with running the business.

For the purposes of this research alone, a panel of businesses is maintained. This panel is approached each quarter to respond to the survey. In addition two smaller monthly surveys with around a third of the panel are conducted in the intervening months to capture changes on a more regular basis.

Respondents are generally sent a copy of the questionnaire via email (although some elect to receive just a link to the online survey or a copy by mail). Respondents then have the option of completing the survey online, or mailing, faxing or emailing their completed surveys back. The majority, however, still receive a telephone call from our interviewers (the interviewing is subcontracted to Fieldworks) and complete the survey over the phone.

Interviewing is conducted over a three week period. Respondents also receive a copy of the report (produced by the Economics Department in the National Australia Bank) as soon as it is released to the press.

The critical element of this project is maintaining the panel of respondents so that it is reflective of the Australian business environment (non-farm, non-Government sector) by State, Industry type and size of business. Smaller States are over-weighted to provide appropriate reporting sizes for each State, as are some Industry types (such as mining) due to their significance to the Australian economy. Larger organisations (200 + employees) are also over-weighted, again to reflect their significance to the Australian economy.

ABS data is used to calculate the proportions of businesses required across the three dimensions of location, industry and size, although sources of this data and changes to industry classifications and even grouping of company size has meant continual review and estimations being required.

In 1998, the quarterly survey was extended to include an additional 8 monthly surveys. Around 1300 respondents are divided across the additional two surveys conducted per quarter. These samples need to be matched to reflect the same characteristics of the total panel. A sample of just over 400 interviews is conducted in each of these surveys.

In 2006, the research was extended further to include a quarterly SME survey. An additional 1,200 panel members are maintained with turnover between $2 – 10 million to represent this important sector. Some of the “main”
quarterly survey respondents are also eligible for this survey, allowing us to achieve around 700 interviews per quarter in this segment.

In 2011, an ASX300 survey was added. There are around 150 panellists from this sector, and it is now beginning to gain some momentum in the market.

The panel now exceeds 2,700 businesses. Each quarter, new recruits are added to replace those that drop out (for a variety of reasons), but the replacement rate is currently around 6% per quarter.

Data is provided to NAB in SAS format for easy charting of their time series in their reports. Monthly reports to the press are often turned around within eight days of completing fieldwork, so that data for the monthly survey is available usually within 10 days of the end of the month.

CRITICAL SUCCESS FACTORS - ACCURACY IN PREDICTION ON BUSINESS CONDITIONS

Our check has always and will continue to be the ability for the research to continue to be a predictor of business conditions and economic performance. As shown in the chart overleaf, the survey continues to track well with GDP measures over time (with the exception of the strength of the impact of significant events such as the Queensland floods), and importantly, this data is usually available a full quarter before the official data.


The RBA measured the correlations between GDP and domestic demand against the various business surveys, and highlighted NAB’s Quarterly Business Survey as being significantly higher than the average of the other business surveys on a number of key issues:

"Notwithstanding the volatility in quarterly estimates of trend GDP growth, the correlation coefficients between survey-based measures of business conditions and GDP growth are generally positive at around 0.4 for the survey average since 1994, and around 0.5 for the NAB Quarterly Business Survey which commenced in 1989 [Table 2]. The correlation between business surveys and domestic demand growth tends to be noticeably higher at 0.7. This suggests that responses to questions about businesses’ sales, profitability and employment are more closely aligned to domestic spending than to domestic production as measured by GDP."

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Excerpt from the March 2014 NAB Monthly Business Survey report

Table 1: Characteristics of Selected Nationwide Business Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Frequency</th>
<th>Sample size (approx)</th>
<th>Coverage</th>
<th>Commenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCI Business Expectations Survey</td>
<td>Quarterly</td>
<td>2,000</td>
<td>All major sectors (includes farm and mining)</td>
<td>Nov 1994</td>
</tr>
<tr>
<td>ACCI-Westpac Survey of Industrial Trends</td>
<td>Quarterly</td>
<td>200–300</td>
<td>Manufacturing</td>
<td>Sep 1961</td>
</tr>
<tr>
<td>AIG-PwC Performance of Manufacturing Index</td>
<td>Quarterly/</td>
<td>900/200</td>
<td>Manufacturing</td>
<td>Sep 1993/</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td></td>
<td></td>
<td>May 2001</td>
</tr>
<tr>
<td>AIG-HIA Performance of Construction Index</td>
<td>Monthly</td>
<td>150</td>
<td>Construction</td>
<td>Sep 2005</td>
</tr>
<tr>
<td>AIG-CBA Performance of Services Index</td>
<td>Monthly</td>
<td>200</td>
<td>Services</td>
<td>Feb 2003</td>
</tr>
<tr>
<td>Dun &amp; Bradstreet National Business Expectations Survey</td>
<td>Monthly</td>
<td>1,200</td>
<td>Manufacturing, retail and wholesale</td>
<td>Dec 1987</td>
</tr>
<tr>
<td>NAB Quarterly Business Survey</td>
<td>Quarterly/</td>
<td>900/400–500</td>
<td>Non-farm sector</td>
<td>Sep 1989/ Mar 1997</td>
</tr>
<tr>
<td>NAB Monthly Business Survey</td>
<td>Monthly</td>
<td>400–500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensis Business Index</td>
<td>Quarterly</td>
<td>1,800</td>
<td>Small and medium firms in most major sectors (excludes farm and mining sectors)</td>
<td>Aug 1993</td>
</tr>
</tbody>
</table>

Sources: ACCI; AIG-PwC; Dun & Bradstreet; HIA; NAB; PwC; Sensis; Westpac

Table 2: Current Business Conditions and Output Growth

<table>
<thead>
<tr>
<th>Start of sample period</th>
<th>Survey average&lt;sup&gt;ab&lt;/sup&gt;</th>
<th>NAB Quarterly Business Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contemporaneous correlation between survey measure and quarterly growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trend real GDP</td>
<td>0.36</td>
<td>0.48</td>
</tr>
<tr>
<td>Trend real domestic demand</td>
<td>0.71</td>
<td>0.67</td>
</tr>
<tr>
<td>Trend nominal domestic demand</td>
<td>0.74</td>
<td>0.72</td>
</tr>
<tr>
<td>Explanatory power in an autoregressive model of quarterly growth (adjusted $R^2$)&lt;sup&gt;ab&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seasonally adjusted real GDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline model (lags of GDP growth)</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Including survey variable</td>
<td>0.04</td>
<td>0.09</td>
</tr>
<tr>
<td>Seasonally adjusted real domestic demand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline model (lags of domestic demand growth)</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Including survey variable</td>
<td>0.33</td>
<td>0.25</td>
</tr>
<tr>
<td>Seasonally adjusted nominal domestic demand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline model (lags of domestic demand growth)</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Including survey variable</td>
<td>0.36</td>
<td>0.34</td>
</tr>
</tbody>
</table>

<sup>ab</sup> The survey average is based on the first principal component of general business conditions from the ACCI Business Expectations Survey, the composite index of actual activity from the ACCI-Westpac Survey of Industrial Trends, the AIG-PwC Performance of Manufacturing Index, the average of actual sales, employees and profits from the Dun & Bradstreet National Business Expectations Survey, actual business conditions index from the NAB Quarterly Business Survey and the average of sales, profits and employment from the Sensis Business Index.

The RBA also reported on the correlations of the surveys to hiring intentions, and again highlighted the much higher correlations of the NAB Quarterly Business Survey:

“Several business surveys provide a timely source of information on firms’ hiring intentions, such as questions on whether firms expect employment levels to increase or decrease in the forthcoming quarter. As shown in Graph 3, survey measures of hiring intentions have generally been highly correlated with movements in employment growth, with correlation coefficients for hiring intentions and trend quarterly employment growth generally around 0.7 to 0.9 (Table 3). As for business confidence, these questions are forward-looking, and for most measures there is also a strong positive correlation with employment growth in the subsequent period. Survey measures of hiring intentions can also be used to inform forecasts of employment growth: adding survey variables to simple models of employment growth increases the explanatory power of these models considerably, both for the current quarter and the next quarter”.

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Similarly, the RBA also reported similar high levels of correlation to capital spending plans, and again highlighted the much higher correlations of the NAB Quarterly Business Survey:

“Several surveys also provide a timely source of information on whether firms are planning to increase or decrease their investment spending in the near term. For example, participants in the NAB, ACCI-Westpac and Sensis surveys are asked what they expect to happen to capital expenditure (capex) over the next 12 months, while the Sensis, Dun & Bradstreet and AIG surveys focus on firms’ capex at shorter horizons. Correlation coefficients for investment intentions and trend quarterly investment growth are generally positive and range from 0.7 to 0.8, indicating that there is a strong positive association between the two variables (Table 4; Graph 4). Statistical tests also indicate that these investment intentions provide some information about actual changes in investment: the explanatory power of simple autoregressive models of current and future investment growth increases significantly when survey variables are included. That said, survey measures do not weight the firms in the sample by the value of their investment, which means that large investment projects, which tend to be in the mining and transport sectors, are likely to be underweighted.”

**RESERVE BANK BULLETIN, DECEMBER 2011 PAGE 18**
A KEY TOOL IN ANALYSING THE PERFORMANCE OF THE AUSTRALIAN BUSINESS SECTOR

While the National Australia Bank obviously uses the information contained in the research significantly for its own price setting and strategy development, the impact of the report is much wider than just an internal document.

Both the Federal Government and Opposition, as well as State Governments regard the information contained in this research as a significant indicator of Australian business performance. They receive copies of the report each month to assist their understanding of the Australian economy.

The Reserve Bank of Australia is a high user of the NAB’s Quarterly Business Survey. For the last 10 years, results from the NAB’s Quarterly and Monthly Business Surveys have been utilised and reported within the RBA’s Statement on Monetary Policy as part of its analysis of its business sector (see Graph 3.19 of its February report: http://www.rba.gov.au/publications/smp/2014/feb/html/dom-eco-cond.html).

The RBAs chart pack on the Business sector available online also refers and quotes directly from the NAB Survey [see over]. **2/4/14: http://www.rba.gov.au/chart-pack/business-sector.html

Indeed, the NAB Business Survey is the only data source referred to in the charts of the Business sector outside of the ABS and RBA itself.
A MAJOR SOURCE OF PR EACH MONTH FOR THE NATIONAL AUSTRALIA BANK

Every month, most major papers and news sources around Australia report the key results of the research, often grabbing headline news when major changes in confidence or conditions highlight a significant change in Australia’s business fortunes.

Indicatively, a Google search of the phrase “National Australia Bank Quarterly Business Survey” returns “about 216,000 results”, while the phrase “National Australia Bank Monthly Business Survey” returns “about 329,000 results”. The National Australia Bank’s ASX 300 Business Survey receives “about 24,600” results in a Google search.

SUMMARY

The NAB’s Quarterly Business Survey has now been conducted 95 times, and with the exception of two waves, the principal of Gundabluey Research, Sarah Wrigley, has been the project manager for the survey. In addition, the Monthly Survey has now been completed a further 131 waves, the SME survey a total of 33 waves and the ASX300 survey 13 times. During this time, the research results have been late (by no more than one day) in less than a handful of instances.

The National Australia Bank Business Surveys must be one of the longest and largest Business Surveys running in Australia, and it is because of its accuracy and timeliness that the contract continues to be held.
Winner – Communication Strategy Effectiveness

“CommBank CAN” - Qualitative Research in Creative Development

Jem Wallis and Ainslie Williams (Vivid) with Monique Macleod (General Manager Consumer Marketing, CommBank) and Jo Rozario (Managing Partner, M&C Saatchi)

THE BRIEF

By 2011 CommBank had made some significant improvements in Customer Service but following a review it decided an additional impetus was required. It identified that ATL advertising needed to play a more prominent role.

M&C Saatchi was appointed as the advertising agency based on the premise of a new campaign idea called “CommBank CAN”.

The marketing team headed by Monique Macleod decided research should be integral to the campaign’s development. The Market Research department at the bank outlined the research need and worked closely with marketing to ensure the best ROI at every stage.

There have been 8 rounds of qualitative research on the campaign over 18 months (roughly one every 2 months). The research has been used at every key milestone to keep the campaign on track and to provide guidelines which have been written into the brand planning process.

1. FOUNDATION RESEARCH

a. Background

Vivid conducted the first piece of research on CAN in March 2012. The initial study was used to shape strategy, provide executional input and develop some important guidelines. It needed to identify which triggers and elements within the broad idea would be most effective in lifting Customer Satisfaction and driving stronger customer interest in consideration of CommBank as ‘my main financial institution’ (MFI).

Although loosely labelled ‘pre-testing’, the research was really to develop insights and guidance on how to roll out the creative idea in a way which would make it compelling and ensure it achieved its goals. The stakeholders knew what they wanted CAN to achieve but were unsure of the mechanics needed to deliver this highly emotional territory.

Although all the potential executions explored were under the CAN umbrella, there were wide variations in media channel and executional styles. Some of the variables were:

- Use of a launch TVC or ‘anthem’ versus no launch TVC
- The format a launch TVC should take [style, main messages, use of a high profile celebrity]
- Use of cartoon or animation or real-life
- The focus for product messages and how to integrate them into the more emotional, over-arching theme

b. Methodology

A traditional qualitative research sample of 10 x two hour focus groups divided Sydney, Melbourne, Tamworth and between CommBank Customers, Non-Customers, Consumers and Business.

This study broke many of the conventions held as sacrosanct in research. First, to minimise any effect the research stimulus material might have on the results all ideas put into research are usually compared using an equivalent
format and similar levels of production. But our stimulus contained a wide variety of different formats including stealomtics, key frames, narrative tapes, basic headlines and partially formed scripts which were read out in the groups.

This was done because the campaign was so embryonic there was considerable flexibility as to what the launch commercial should look like; what follow-up executions should focus on; and what style of content would be most effective.

It would be too costly and time-consuming to produce all the variations to the same standard simply for several to be ruled out. So the onus was on the research to explore all forms of material to determine what direction the campaign needed to take to maximise its potential.

Second, rather than ‘test’ the same material with all respondents the presentation of the material was modified: the order it was presented in and the content of individual executions varied as the fieldwork progressed. This was done as the stakeholders were still learning how the campaign elements would work. No-one knew how customers would react and if they were negative to one element there was no point pursuing it.

There was pressure on the research interpretation each night to determine what needed to change for the following night. The researchers led the discussion in the viewing room and ‘behind the mirror’. Account Managers, Creatives and marketing stakeholders were present to deliberate and determine what changes needed to be made but the researcher’s expertise in interpreting consumer responses and facilitating the discussions was central to the process. The qualitative team guided the discussion on how to amend and change the material as we analysed what was working, how it was working or why it wasn’t.

The researchers needed to be highly cognisant of whether any ‘off-strategy’ consumer inferences were due to the material; how it was delivered; the order it was seen in or something inherent in the creative idea itself. A misappropriation of a finding against any one of these would potentially send things on the wrong track.

Monique Macleod: “From a marketing perspective even though there was a passion for the idea and we were very clear on what the take-out needed to be, the research needed to shed light on how the communication would best reach its goals. We knew the intended message may not be delivered by the initial material and wanted to gain insight from customers through the research to understand what they took-out and how the structure of the campaign and its content could be optimised. From the outset we decided research would be a vital tool to learn about the mechanics of the campaign”.

Understandably the Creative team at M&C was nervous research was being trusted to ‘test’ its creative idea and provide guidance on how it should be executed, particularly because they had not worked with Vivid before. When the research found that none of the potential ideas for a launch TVC delivered against the objectives, relationships would normally be severely tested but, as Jo Rozario puts it, “because of the way the research was conducted, the techniques used and because the researchers so clearly understood and could distil the difference between responses to the advertising idea and executional issues, the team at M&C trusted them. The work was always constructive, strategically helpful and insightful. It enabled the Creative teams to improve the work and deliver stronger results for the client”.

c. Results

Whilst the detailed results are commercial in confidence we can demonstrate how the research affected and shaped the campaign. The CommBank marketing team and M&C Saatchi credit the research with some major recommendations and action points including:

- A launch TVC/anthem was required to achieve the emotional uplift
- The focus for the launch TVC needed to be more on the positive outcomes (CAN) than the negative (i.e. less emphasis on CAN’T)
- Despite 4 alternatives none of the launch executions tested delivered the emotional uplift or framed the big idea sufficiently
None of the celebrities were appropriate for the bank’s image or captured the positive sentiments inherent in CAN (Ode to CAN with Toni Collette was a very different commercial to the one intended prior to the research).

The launch TVC should set the emotional tone but credible, structured and relevant product messages or ‘proof points’ would need to be integrated so that the emotional claims did not seem hollow. When the proof points demonstrate the drive and relevance the bank has, permission to ‘help customers live their lives’ is granted.

Very specific executional guidance was provided, e.g. when to use “CAN your bank...” and when to use “CAN you...”

2. SUBSEQUENT ROUNDS OF RESEARCH (7 PIECES OF QUALITATIVE RESEARCH IN 18 MONTHS)

a. Background
The subsequent rounds of research looked at new executions for both over-arching brand messaging and specific product claims. We also investigated qualitatively how the campaign had been working in market and provided feedback on finished executions.

Monique Macleod: “Research was used at every key point to provide input into the structure, tone and content of CAN. The marketing team was very clear that research had a role to play but was equally clear research is abused and campaigns over-researched. So this was never a box-ticking exercise. We always wanted to use the research to learn and improve what we were doing. The research was used as a vital tool to provide important insights into new executions and how the message could be landed in an optimal way”.

b. Methodology
Each round of research had slight variations in the intended target market (Customer/non-Customer/demographics/ SES/specific product focus) but the basic approach to each piece was consistent.

Each time there were 6 -8 focus groups lasting 2 hours; a variety of material for different media channels (ATL and digital); specific executional questions about message take-out; and how the new execution would fit with CAN and the 4 pillars used by CommBank to guide its innovation process.

c. Results
The marketing team point to the contribution the research has made as being instrumental to where CAN is today. As Monique says, “Without research the campaign would not have achieved the success it has”.

Particular results she highlights from the research include:

- Product focus: research has weighed up an array of possible product messages and provided recommendations on those which would be most motivating to provide the hard proof needed to ground this emotional campaign
- Product benefits: the research has identified the most relevant and evocative customer benefits and provided insights into how these could be linked to the product
- Alternative Options: “The research analysis always provided us with a clear understanding of what would happen if each of the options on the table were to be pursued. The final decision was always ours but I never left the room after the research debrief without being crystal clear what the pros and cons of any decision would be.”

Fast forward 2 years and Vivid, M&C and CommBank are still all working closely on the campaign. So clear is everyone on the model and framework for the campaign when there was a need to develop a new ‘anthem’ execution in 2013 M&C produced two distinct ideas from two separate Creative teams which both proved to be highly effective. So the research lessons were well learnt and the brand guidelines clearly followed.

From this round of research the execution ‘Three Little Letters’ featuring Steve Clisby was launched and has maintained the success of CAN.
But perhaps the clearest proof of how effective the research process has been comes from how CAN has pushed CommBank forward on all the Brand Health metrics it uses to benchmark itself against the other big banks. Quantitative tracking has shown some impressive results:

And CAN has also helped the bank achieve its overall goal of becoming #1 on Customer Satisfaction:

So whilst the results of the campaign are clear for all to see thanks to these quantitative measures and whilst the marketing team has deservedly won awards for its success, this paper seeks to demonstrate it was the rigorous rounds of qualitative research which helped shape CAN and make it what it is today.
Winner - Consumer Insight

Reframing Help Seeking... from Girly to Ballsy

Dr Vicki Arbes, Hall & Partners | Open Mind and Tass Mousaferiadis, beyond blue

Men are notoriously poor at seeking help for health problems. Over 70% of men with a mental disorder do not seek out services, yet men account for around 80% of deaths by suicide in Australia. Men's reluctance to seek help is considered globally to be a very major public health issue. As part of a raft of initiatives, beyond blue devised a multi-platform campaign and called for research to come up with enabling strategies to encourage men to seek help. Hall & Partners Open Mind devised a non-directive qualitative approach to look for practical ways to challenge current thinking, and promote change in behaviour amongst men.

LISTENING CAREFULLY ...

We adopted a broad, multi phased qualitative approach consisting of stakeholder interviews to set the broader context; discussion groups, case studies and online bulletin boards across six states and territories to really listen to what people have to say about depression, anxiety and seeking help. Our sample covered eleven segments across age (18 to 60+ years); life stage (pre-family, family and retirees); location (metro, urban-growth corridors, regional and rural); cultural background (general population mix, CALD and Indigenous groups) and men from the GBTI community. We talked to men who have experienced or are currently experiencing depression and/or anxiety. We added a small sample of women who had a partner or close family member who had sought help for depression and/or anxiety and we also spoke with a health, mental health and welfare professionals who work with men as part of their practice.

Our approach was to be as non-directive as possible, ensuring we didn’t introduce any new language or terms into the discussions.

TALKING TO MEN ON THEIR TERMS...

As a community, we now talk much more openly about depression and anxiety and men, like women, recognise and see this as refreshing and positive. However, understanding remains vague: both men and women struggle to differentiate between ‘feeling depressed’, ‘being depressed’ and having ‘clinical depression’. But where women are comfortable with the blurry edges, men are not. The way resources and services talk about these conditions puts men off. Often their first course of action will be to look for answers in private - online. But what they find (certainly at the time) wasn’t fulfilling their need for clear, practical definitions, steps and outcomes. So their response was a tendency to turn away, and ‘just ignore it’.

Right across the health sector, the pervasive expectation is that people should ‘talk to someone’ when they have a problem. This makes sense to women, but is not a natural inclination for a lot of men. When men go looking for information about health issues, and especially depression and anxiety, they want to find a practical course of action – clear steps to take – to solve a problem. Instead they feel what is there is vague and non-directive. Depression and anxiety seem to them to be ill-defined (even ‘subjective’, which reinforces that ‘no-one really knows ... so there is nothing to be done’), and few appreciate that it can be effectively treated and managed, so there is little real incentive and few concrete steps laid before them to deal with it. Men see little sense in ‘chin wagging’ about problems unless there is a clear, practical outcome in sight. ‘Talking about it’ is more how women deal with things – but can feel pointless to a lot of men. So when wives, daughters, mothers and sisters suggest men should ‘talk to someone about their depression or anxiety’, this can actually irritate and turn them off rather than prompt them into action. Yet this was very much the language in use across the sector.

Not being able to define, recognise and know what course of action to take is a major barrier for men to seek help: as is the highly feminised language that surrounds the topic. Websites [at the time of the study] were overloaded with detail (‘like researching a thesis’), and replete with the language of surrender – seeking help, talking to someone, suffering or living with depression. While men were hearing more about depression and anxiety, this was often couched in terms of a lifelong condition, having to give up jobs/careers and lives ’to focus
on the ‘illness’. All of which made owning the label of depression or anxiety very challenging. Men are a lot more understanding about others who have a mental illness then they once were, but they continue to be very harsh in judging themselves. In essence the label of depression to many men is *emasculating*; they don’t really feel that they can have depression or anxiety, and also be dependable, capable and in control of their world... That is, be the sort of man they think they should be.

Asking them to ‘seek help’ contributes to the sense that admitting to depression or anxiety, is about surrendering, giving in, passing control to someone else because they have failed to manage for themselves.

**TRANSFORMING IDEAS INTO ACTIONS...**

*The research has shown for years that men do not deal with health issues in the same way that women do.* Yet in many ways the health sector, including with respect to mental health, was not making the changes that this insight implies. The study used a framing model as a key part of the analysis. How issues are framed in the community is central to how they are thought of, communicated and acted on. The study showed that a number of frames are widely employed by men with respect to mental health and help seeking:

![Current framing vs. New frame](image)

The breadth of the study enabled us to design separate communications frameworks for key audiences, including in particular younger men, family men and older men, as well as indigenous Australians.
LOOKING AHEAD
The study pointed to the need to address men directly, building language that better reflects a masculine sensitivity, and talking to them on their terms. For example, an implication of seeing depression and anxiety as a weakness is that ‘help seeking’ can become an indication of failure to ‘handle the problem’ as an individual. Reframing the activity of help seeking in a more empowering way, such as ‘taking action’ or ‘taking control’ resonates with the ideals for many men of being strong, and strong enough to be a protector of others. A tone of voice that normalises, and adopts language that is concrete and active. For instance, communicating ‘the signs’, ‘the actions to take’ and ‘the treatment options’ reframes the vague and ill-defined into tangible, achievable tasks.

The study pointed to the need to

• Focus online to give men a private, easy way to inform themselves... adopt the right language and tone and provide clear next steps
• Focus on the tangible and actionable, i.e.: the signs of depression and anxiety; the actions or steps they can take (for instance, contact beyondblue) and the treatment options available. This approach challenges men to be informed. It avoids the ‘soft’ or ill defined’ and allows them to roll up their selves and be true to themselves
• Communications can challenge the current frames without referencing them. We are not seeking to change opinions immediately, but rather to change behaviour by removing barriers and facilitating ways in.
• Strike a tone that is factual yet positive... taking action is normal (‘this is what we do now’)

That is, demystify the woolly ‘black dog’ and challenge all men to know the signs, the actions they can take and treatment paths (via beyondblue). The development and subsequent launch of the Man Therapy website addressed many of the recommendations of the study.

The client Tass Mousaferiadis, Men’s Program Leader at beyond blue was responsible for commissioning the Men’s Help Seeking Study and says:

“The outcomes of the beyondblue commissioned research undertaken by HPOM on men and mental health and help seeking in 2012 has had a substantial impact on the development and design of mental health programs targeted at men.

In particular, the Men’s program at beyondblue is now far more conscious of messaging with men and we consequently use more empowering and active language supported with concrete solutions. We no longer talk about ‘seeking help’. We also learned from the research to have a better understanding of how and where men seek health information and their strong preference for online sources because these are discreet and available anytime and from anywhere.

Some examples of the application of the research findings include:

• affirmation that digital environments can be an effective platform to engage with men resulting in the investment in a major online campaigns targeted at non-inner metropolitan men under the age of 55
• contributed to the development of our Man Therapy campaign and website
• the use of more active language associated with the promotion of the beyondblue telephone service
• contributing to the shaping of communication strategies targeted at men about new support services.

The research outcomes have been reported at conferences across Australia, and shared with key sector stakeholders, state and federal governments. Many of our stakeholders have reported to us they are reflecting the findings in their work.

The research was a key input into our Man Therapy campaign. In the first 10 months of the campaign’s independent evaluation has identified that 43% of Australian men aged 18 years and over are aware of Man Therapy. There have been over 500,000 visits to the Man Therapy website over the 40 weeks since its launch, assisting Australian men to further understand anxiety and depression, know the range of treatment options and develop an action plan.”

https://www.mantherapy.org.au/ Man Therapy is designed to get blokes to take practical action to take charge of depression and/or anxiety, and to combat suicidal thoughts.
Winner – Innovation in Methodology

The introduction of dual-frame telephone surveys to Australia
Darren Pennay, The Social Research Centre

THE BRIEF

One of the emerging issues facing survey researchers in Australia, and elsewhere, is the increasing proportion of households without a landline telephone connection. Recent data from the Australian Communications Media Authority (ACMA, 2013) reveals that the proportion of adults without a landline telephone connection is now 21%. The overwhelming proportion of these adults (96%) (ACMA, Oct., 2011) are contactable via a mobile phone and comprise the so-called mobile-only population. Figure 1 plots the growth in the mobile-only population in Australia, compared with the U.S.A., over the last decade.

![Figure 1: The proportion of Australian and U.S. adults without a landline telephone service, 2003 to 2013.](image)

Australian data (ACMA, 2011) also shows that the move away from having a landline telephone connection is not uniform across the population. In particular, over a third of 18 to 34 year olds (36-37%) are now mobile-only (see Figure 2).

One of the methodological responses to this growing ‘gap’ in the coverage of traditional landline sample frames is the emergence of dual-frame telephone surveys, that is, surveys which combine randomly generated samples of landline telephone numbers and randomly generated samples of mobile phone numbers. By the mid-2000s the emergence of this sizeable gap in the coverage of landline telephone surveys was a concern for US researchers. In 2008, when the cell-phone only rates in the U.S. were 15%, the main population health surveillance survey in the U.S. (the Behavioural Risk Factor Surveillance System) decided to include mobile phone numbers in their sampling frames as “biases resulting from exclusion of adults with cell phones only from the landline-based survey were found for 9 out of the 16 health indicators” (Hu et al 2011).
Despite the above, and despite the fact that US researchers started investigating the impact that excluding the cell-only population was having on telephone survey estimates as far back in 2003 (Cell Phone Sampling Summit 1), there was no substantive work in this area undertaken in Australia until the Social Research Centre’s Dual-frame Demonstration Survey in September, 2010.1

THE DUAL-FRAME SURVEY METHOD
Dual-frame surveys require interviews to be undertaken across two independent sampling frames – a randomly generated sampling frame of landline telephone numbers and a randomly generated sampling frame of mobile phone numbers. Both frames are available from commercial sample providers. There are two methods – the non-overlapping method and the overlapping method. The non-overlapping method requires in-field screening of the mobile phone frame such that only mobile-only persons are selected for interview. The overlapping dual-frame method, which is now the preferred approach amongst the survey research community (see Boyle et al., 2010), involves interviewing via both frames to a pre-determined proportion and adjusting for the overlapping chance of selection via weighting. The basic concept is illustrated in Figure 3 which shows the distribution of the population by telephone status. A fairly typical overlapping design in Australia is for approximately 50-60 per cent of achieved interviews to be undertaken via the landline frame and the remainder to be undertaken via the mobile frame.

1. The survey was part funded by the Institute for Social Science Research, University of Queensland.
THE ROLE OF THE SOCIAL RESEARCH CENTRE IN INTRODUCING DUAL-FRAME TELEPHONE SURVEYS TO AUSTRALIA

Our interest in dual-frame telephone surveys was piqued by the work of researchers such as Battaglia, Brick, Keeter, Kennedy, Link and Lavrakas throughout the early to mid-2000s. Our awareness of the growing mobile-only phenomenon prompted researchers at the Social Research Centre to conduct a survey exploring the mobile phone-only population via a nonprobability online panel [see Pennay and Bishop, May, 2009] and to attend the American Association of Public Opinion Research (AAPOR) Conference in Chicago in May 2010. The AAPOR conference had several sessions and several workshops devoted to various aspects of the dual-frame method.

Since attending the AAPOR conference and coming back with new knowledge about the development of dual-frame surveys in the U.S., and in particular with an enhanced appreciation of the methods used to weight dual-frame data, the Social Research Centre’s contribution to this field includes but is not limited to the following:

CONFERENCES, WORKSHOPS AND ADVOCACY WORK

- September, 2010. Conducted the first Dual-frame Demonstration Survey. The results of which were presented at the Australian Consortium of Social and Political Research Incorporated (ACSPRI) Social Science Methodology Conference, Sydney, December, 2010.
- March, 2011. The Social Research Centre (with some financial and administrative support from the University of Queensland) convened the Telephone Surveys and the Mobile Phone Only Population Workshop. This free 1½ day workshop, held in Melbourne, was attended by approximately 80 researchers from across Australia with representatives from the government, academic and not-for-profit sectors. The workshop featured a keynote address and other sessions from one of the leading U.S survey methodologists in this field – Dr Paul Lavrakas (Past President of the American Association of Public Opinion Research).
- Following the success of this first workshop the Social Research Centre began conducting commercial dual-frame surveys for the Australian health and social science research community and also conducted its first dual-frame omnibus survey, supported by nine subscribers.
- July, 2012. A second free workshop exploring “Advances in Telephone Surveys and the Mobile Phone Only Population” was convened. This again attracted approximately 80 researchers from across Australia.
- December, 2012. Made a submission [and subsequent representations] to the Department of Broadband, Communications and the Digital Economy in relation the review of the Integrated Public Number Database. One aspect of the Social Research Centre’s submission, which has resulted in a draft recommendation to Government, was to enable geographic markers to be appended to mobile phone numbers used for approved research purposes.
- May, 2013 - Assisted Tourism Research Australia with a submission to the Australian Bureau of Statistics to collect telephone status information as part of the 2016 census and to collect such information on a more regular basis, perhaps as part of the labour force supplementary survey series.
- September, 2013. Presented the paper ‘Using Dual-frame telephone surveys to include the mobile phone-only population’ at the AMSRS Conference in Sydney, 5–6 September, 2013.
- February, 2014- Invited speaker to the Prevention and Community Health Committee of the National Health and Medical Research Council regarding dual-frame surveys [amongst other things]. This provided an opportunity to support RICA’s position regarding researcher access to the Integrated Public Number Database and to push for the Australian Bureau of Statistics to collect telephone status information (for weighting purposes) as part of the Census of Population and Housing and as part of the an annual survey program.
PUBLICATIONS

Michael Livingston, Paul M Dietze, Jason Ferris, Darren Pennay, Linda Hayes and Simon Lenton. Surveying alcohol and other drug use through telephone sampling: a comparison of landline and mobile phone samples [Approved for publication], BMC Medical Research Methodology


GRANTS
LP130100744 ARC Linkage Project: Enhancing Social Research in Australia using Dual-Frame Telephone Surveys. The University of Queensland and the Social Research Centre.

COMMERCIAL PROJECTS
The Social Research Centre has also undertaken over 20 commercial projects using the dual-frame method.

THE IMPACT OF INTRODUCING DUAL-FRAME SURVEYS TO AUSTRALIA
The results from our first Dual-frame Demonstration Survey showed that relative to landline respondents mobile-only respondents are typically younger, more likely to be male, be of lower socioeconomic status, have higher levels of participation in education, be more geographically mobile and more likely to be overseas born. Mobile-only persons also reported higher levels of anxiety and depression, binge and heavy drinking, smoking, legal and illicit drug use, problem gambling and financial hardship, and had fewer social supports. This initial Australian research produced similar findings to those seen overseas. However, the first Dual-Frame Demonstration Survey was a relatively small undertaking with a total sample of 700 comprised of 400 interviews from the landline frame and 300 interviews from the mobile phone frame. As such, the results needed to be replicated in larger studies. With that end in mind the Social Research Centre subsequently conducted two dual-frame omnibus surveys which reinforced the findings from our original work and allowed the US scholar Paul Lavrakas to conclude that “exclusion of the mobile-frame would lead to non-ignorable bias.”

To date, our portfolio of dual-frame surveys has resulted in less biased survey estimated being generated in the following areas:

- **Youth mental health** – relative to dual-frame surveys landline surveys led to “a slight (statistically significant) underestimate of psychological distress in young people”. “Non-trivial differences [were also observed] with respect to accurately measuring mental health literacy amongst young people and the extent to which poor recognition, negative beliefs about standard psychological treatments and overly positive perceptions about self-help are barriers to help seeking for mental or substance use disorders” (Pennay et al., 2012)

- **Tobacco consumption** - Alexander et al. (2012) concluded that “These dual-frame estimates are considered to be the most accurate available estimates of smoking prevalence in Victoria ... as they better represent males, younger adults and employed persons compared to the traditional landline sample.” [p.20]. Livingston et al. (2013) also noted that “landline telephone surveys in Australia are likely to substantially underestimate the prevalence of tobacco smoking by excluding potential respondents who live in mobile-only households.”

- **Measures of problem gambling** - In relation to problem gambling severity Jackson et al. (2013) noted that “our research supports previous findings that reliance on a traditional landline telephone sampling approach effectively excludes distinct subgroups of the population from being represented in research findings. Consequently, we suggest that research best practice necessitates the use of a dual-frame sampling methodology (and that) “this approach needs to become the norm in gambling survey research.”

- **Alcohol consumption** – Jackson et al. (2012) also found higher levels of hazardous drinking being detected via a dual-frame methodology using the AUDIT – C (Bush et al., 1998), a 3-item screening tool for hazardous
drinking, and higher levels of anxiety and depression based on two modified questions from the EQ-5D (EuroQol, 1990).

- **Sexual health** – the research findings from Babcock, et al. (pending publication) support the conclusion that telephone status is associated with participation bias in sexuality research.

**CONCLUDING REMARKS**
In addition to the above, the dual-frame method has also been used to produce less biased survey estimates in support of the evaluation of Plain Packaging of Tobacco Products (Cancer Council Victoria), tobacco consumption in NSW and Victoria (Cancer Institute NSW / Cancer Council Victoria), attitudes to race-based discrimination (VicHealth), measures of social cohesion and tolerance of diversity (Scanlon Foundation / Monash University), community attitudes to violence against women (Department of Social Security), road safety attitudes and behaviours (Australian Transport Safety Bureau and the Transport Accident Commission) and workplace health and wellbeing (University of Melbourne).

The Social Research Centre’s body of work in this area includes contracted research, free seminars, AMSRS workshops, AMSRS conference papers (runner up best paper at the 2013 conference), other conference papers and white papers, academic papers, ARC linkage grants, articles in Research News and advocacy work. Our research has been extensively cited. As such the Social Research Centre introduced and also helped to popularise this method by placing in the public domain a great deal of additional methodological research and by advocating for improved conditions for dual-frame surveys in Australia.

The introduction of dual-frame survey methods to Australia is the biggest change to telephone survey methods since the widespread adoption of RDD sampling in the mid-2000s.

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research using a dual-frame survey of landline and mobile phone numbers. Journal of Gambling Studies, Online first DOI: 10.1007/s10899-012-9353-6


Winner – Social Research/Public Policy Award

Listening to community – research and evaluation for the National Indigenous Ear Health Campaign

Anne Redman and Mary Raftos: The Cultural and Indigenous Research Centre Australia and Dr Helen Price and Nick Connelly: Market Research Unit, Department of Health

THE BRIEF

The incidence of ear disease and hearing loss among Aboriginal and/or Torres Strait Islander people(s) is significantly higher than among the general Australian population, particularly among children and young adults. Overall, the occurrence of middle ear disease is almost three times more common among Aboriginal and/or Torres Strait Islander people(s) than among the non-Indigenous population. Further, middle ear disease is the most common cause of hearing loss among Aboriginal and/or Torres Strait Islander people(s).

The impact of middle ear disease on Aboriginal and Torres Strait Islander communities has negative effects across all ages. Middle ear disease is associated with impaired hearing, which can have serious implications for early childhood development, education and language and speech development. As part of the Australian Government’s commitment to closing the gap in Indigenous disadvantage, $58.3 million was allocated over four years (2009 to 2013) to improving eye and ear health services for Aboriginal and/or Torres Strait Islander people(s), and part of this funding was allocated to the National Indigenous Ear Health Campaign. The campaign, branded as Care for Kids’ Ears, was launched in 2011 and is the first national campaign to address ear health in Aboriginal and Torres Strait Islander communities. The overarching goal of the campaign was to increase awareness of ear disease and highlight the importance of seeking and following treatment to prevent hearing loss in Aboriginal and Torres Strait Islander communities.

The Cultural and Indigenous Research Centre Australia (CIRCA) worked with the then Department of Health and Ageing from 2010 to 2013 to conduct developmental research, several rounds of concept testing, and an evaluation, which all provided valuable insights that shaped the development, implementation, and ultimately the effectiveness of the National Indigenous Ear Health Campaign.

KEY RESEARCH ACHIEVEMENTS

Across the research, over 1000 Aboriginal and/or Torres Strait Islander parents and carers, health professionals, teachers and early childhood educators were consulted. Our considerable expertise and knowledge in working with Aboriginal and Torres Strait Islander communities was critical in achieving such a large sample, and delivering insights that directly shaped the campaign. The team included skilled Aboriginal and Torres Strait Islander researchers, and involved travelling to a diverse range of communities, including some remote communities that were six hours drive from the nearest airport, and we utilised every form of transport you can imagine. It required a high level of flexibility in order to juggle the need to work with and respect community priorities and community time, and meet the tight timeframes of the project. The success also depended on our extensive networks with many Aboriginal and Torres Strait Islander communities across Australia, in order to engage so many community members in the research, as well as our practical, solutions-focused response to working in communities and responding to the challenges this sometimes presents.

Most importantly, the success of the approach hinged on the skills of our research team in consulting sensitively and openly with Aboriginal and/or Torres Strait Islander parents and carers about what for many is a very sensitive issue, and the willingness and generosity of research participants to share their stories, insights and hopes with us. Sitting with a group of women (and we sat with many groups of women and men), surrounded by gorgeous and energetic children tucking into the food in the centre of the circle, and hearing their stories about how poor ear health has affected their family and the community more broadly, and listening to the challenges they face...
and the resilience they demonstrate was a privilege, and something that the research team and the Department valued and respected. In the end, the success boils down to the fact that the Department and the research team “listened hard” to what the community had to say, and were able to translate this into actionable insights that led to the development of an innovative and successful campaign.

THE DEVELOPMENTAL RESEARCH

The developmental research provided strategic advice for the development of the campaign. The research included a literature review, case studies identifying previously successful ear health promotion in Aboriginal and Torres Strait Islander communities, and consultations with Aboriginal and Torres Strait Islander communities and the health sector in 14 urban, regional and remote locations across Australia. The qualitative component included 28 group discussions with Aboriginal and/or Torres Strait Islander mothers and carers, 6 groups with fathers and 26 in-depth interviews with grandparents and Elders, as well as consultations with 65 intermediaries, including health workers, specialists, teachers and childcare workers, and 15 state, territory and federal ear health policy stakeholders.

RESEARCH IMPLICATIONS

The developmental research identified a number of serious issues in regard to ear health in Aboriginal and Torres Strait Islander communities, including widespread lack of information (and misinformation), low capacity of carers to act, and low service capacity to address these issues. However, the research indicated there was a strong desire among research participants to receive information about ear health issues, particularly if the information was correctly targeted and culturally appropriate.

In particular, a number of key insights were critical in guiding the development of the campaign:

1. SEGMENTING THE TARGET AUDIENCE

The developmental research identified the importance of tailoring the campaign to the various segments among Aboriginal and Torres Strait Islander parents and carers. This was the first time that a segmentation approach had been applied to research with Aboriginal and Torres Strait Islander communities by the Department, and provided an innovative and new approach to developing a national campaign for this audience.

Two main factors were identified that influenced the capacity of Aboriginal and Torres Strait Islander parents and carers to act with regard to promoting the ear health of their children. These are:

The capacity of the parent or carer to make health decisions based on:

- the level of family support they receive
- their awareness and knowledge of health issues
- their family circumstances
- the capacity of services in the geographical area to adequately support parents and carers

The research identified a number of priority segments more likely to respond positively to directly targeted ear health promotion messages, given their greater personal capacity and significant information needs. The research also recommended that a more effective way of targeting those segments with lower levels of personal capacity would be through supported ear health promotion through intermediaries, and in conjunction with health checks and other service delivery. The research identified priority messages to be included in ear health promotion and how these should be tailored for the different segments.

2. TARGETING HEALTH WORKERS AND TEACHERS

The developmental research highlighted that health workers and teachers play a crucial role in providing information to parents and children, but that knowledge gaps limit their ability to act effectively as a conduit for conveying important ear health messages.

The research identified that health workers should be targeted through formal training and the provision of comprehensive resources to increase their awareness of ear health and the impact of hearing loss. For teachers, the main messages should be about identifying ear problems and teaching prevention techniques. Induction
training for recently employed teachers could be effective. The research indicated that, in both cases, workforce issues [such as low staff retention] should also be addressed as part of a holistic approach to ear health.

3. THE NEED FOR LOCALISED STRATEGIES
The research identified that the campaign should include strategies that enable materials, messages and/or promotion to be localised to enhance effectiveness.

THE OUTCOME
The developmental research findings in relation to the segmentation of the primary audience, the importance of intermediaries in providing supported information to parents and carers, the information needs of these intermediaries, and the need for locally targeted messages influenced the development of the two-pronged communications strategy, which focused on:

- The national distribution of Care for Kids’ Ears resources, including resources for parents and carers; resource kits for teachers and teachers’ aides, early childhood and community groups and health professionals; and the Care for Kids’ Ears campaign website.

- A media partnership approach where 35 community media and broadcast organisations delivered a diverse range of locally developed ear health social marketing initiatives and grassroots communications, such as radio broadcasts, media production and community engagement events, in English and a range of local Indigenous languages. The media partnership projects were conducted across Australia, covering a significant broadcast area with a large Aboriginal and/or Torres Strait Islander audience. The partnership projects were developed locally, with a range of support from local health service providers, ear health experts, schools, community groups and community members, and often involved community development strategies. The majority of the media partnership projects were undertaken by Aboriginal and/or Torres Strait Islander community controlled organisations.

In developing the materials, four rounds of concept testing were conducted. This included two rounds of concept testing with parents, with 16 group discussions conducted in total, and in-depth interviews/paired in-depth interviews with 20 health professionals and 16 teachers and early childhood educators in urban, regional and remote locations.
The concept testing results helped refine the strategy, and in particular, led to a number of key decisions:

- For the parent resources, the concepts utilised photographs that reflected the diversity among Aboriginal and/or Torres Strait Islander people(s) from across Australia, to enhance levels of engagement and relevance in urban, regional and remote settings.
- A strong focus was given to utilising visual imagery to deliver key messages.
- Two parent resources were developed to accommodate the needs of the different priority segments, and to take into account varying levels in literacy more broadly and health literacy in particular. One resource, the photobook, relied primarily on visual images to communicate the key messages. The second resource also relied on visual imagery to deliver the key messages, but included more detailed information on signs and symptoms, prevention and treatment.
- The development of resources and a story book that teachers and early childhood educators could use with students in the teaching environment.
- The development of resources for health workers including a consultation tool that can be used with clients.

THE END RESULT

In 2013 CIRCA evaluated the campaign on behalf of the Department by conducting a baseline and follow-up survey with Aboriginal and/or Torres Strait Islander mothers and carers (n=200 face-to-face interviews were conducted in each round in 10 urban, regional and remote locations), 32 qualitative consultations with teachers, early childhood educators and staff working with Aboriginal and/or Torres Strait Islander children, 22 in-depth interviews with health professionals, and a review of feedback provided in an online survey completed by health professionals, teachers and early childhood educators who ordered resources via the website (n=121). The evaluation also included ten individual case studies that examined the approaches taken by the media partnership projects to deliver ear health messages and information at a community level and included focus groups with 29 parents and interviews with 70 project staff.

Overall, the evaluation findings indicate that the campaign has had a positive impact on awareness of ear disease among Aboriginal and/or Torres Strait Islander communities. The quantitative research, undertaken with mothers and female carers, found that campaign exposure was linked to increased knowledge of symptoms and prevention and to increased help-seeking behaviours. Around four in 10 mothers and carers in the follow-up survey had been exposed to at least one element of the campaign. This is a positive result given that the campaign did not use traditional paid advertising through mass media and was based on the distribution of national resources and a community-based approach through media partnerships, with localised delivery and broadcasting.

The quantitative research suggests the campaign has been successful in achieving improved understanding of modifiable behaviours (such as regular ear examination/surveillance and treating early infections to completion) among those who had been exposed to the resources compared to those who have not been exposed to them. Results from the follow-up survey indicate that those exposed to the campaign were more likely to:

- Say they knew a lot about keeping ears healthy (32% compared to 16%)
- Identify at least one prevention action unprompted (74% compared to 51%)
- Identify regular ear checks as a preventative action unprompted (49% compared to 26%)

The Care for Kids’ Ears resources received consistently positive feedback in the qualitative research. Participants expressed enthusiasm and appreciation for the resources. The resources were consistently identified as credible, comprehensive, clear, professional, useful, attractive and culturally relevant.

“What a fantastic resource! I have been utilising these resources in my communities ... I have been getting great feedback from playgroups, clinics and schools.”

“It’s hard to find resources with Indigenous families and kids that look contemporary, not just traditional or tokenistic, it’s real life, it’s a very good resource, user friendly.”

“The little ones love Kathy and Ernie and they aren’t scared anymore. I even reckon that some of them like going to the doctor from reading the book.”
Winner – Technology Effectiveness

Capturing the Commuters- Redefining Large Scale Intercept Studies

Jason Whatley and Jacqui Norton, Sweeney Research

THE BRIEF

One of the most crucial data sets collected by State Governments relates to Transport Infrastructure. The modelling of this data alongside other sources [e.g. ABS data] has a profound long term impact on a wide range of socio-economic factors – most importantly the ‘liveability’ of cities as well as on the level of investment required by the government.

This type of data has traditionally been collected using paper based questionnaires through intercept interviews. While time-honoured, paper surveys have a number of inherent design, logistical and process limitations. In the CAPI approach, clever survey design and the effective use of tablet features have reduced or overcome these challenges.

The thinking on the approach and the design was first developed by Sweeney Research for TfNSW (Transport for NSW) in 2012 and has since been embraced by Public Transport Victoria (PTV), along with a coterie of clients from other industries.

The approach involves using tablets and custom programmed software to conduct large scale intercept research (100,000+interviews in the past 18 months) in a way that delivers outstanding outcomes in terms of:

- Time efficiency – it significantly condensed study durations;
- Cost effectiveness - larger samples, minimal ‘cleaning’ of data; and
- The ability to conduct some studies not previously considered feasible in an intercept environment [e.g. full factorial choice modelling].

The strength of the approach in the transport field is that it addresses key challenges faced by clients around accelerating the research process, reducing interviewer error within the survey, minimising the level of handling of the data and enabling the inclusion of more complicated questionnaire design. All of this has been addressed in a way that:

- has not compromised the ability of compare the data with historical trends
- stands up to academic statistical scrutiny
- can be used with confidence to inform decision-making that involves high profile and large-scale infrastructure investment

OBJECTIVES

The key objectives were to capture key metrics relating to the travel/transport behaviour and needs of NSW residents and to do it in a way that utilises technology to expand that capability in more cost effective and time efficient manner.

Specifically, the custom designed CAPI approach needed to:

- Ensure the integrity of the studies were maintained to allow for comparability – critical to Infrastructure decision-making
- Deliver the data in a more timely fashion [as close to real time as possible] - to allow better decisions to be made during fieldwork on sampling and traveller responses.
- Enable a broader range of face to face studies to be conducted in a ‘transit’ intercept environment, including the implementation of studies that couldn’t previously be conducted.
- Improve the experience for respondents and interviewers.
THE APPROACH

Latest generation tablets and cutting edge software are not in themselves differentiators. Rather, they are the tools that enabled the team of digital specialists, CAPI survey designers, field management and research consultants to create an approach that is:

- **Flexible** - Can be adapted to suit the specific needs of a large scale, fast turnaround intercept study
- **Accessible** - Can be deployed at short notice across a geographically disperse area

While no single study is the same, a typical study structure can be defined as follows...

### A Typical Approach

<table>
<thead>
<tr>
<th>Understand</th>
<th>Design</th>
<th>Engage</th>
<th>Pilot</th>
<th>Implement</th>
<th>Deliver</th>
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<tbody>
<tr>
<td>Investigate the specific information needs and how the modelling teams will use the data to inform the design of the research</td>
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<td>Design and develop effective CAPI surveys for customers</td>
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<td>Work with TNSW, specific operators and other relevant stakeholders (e.g. modelling teams) to ensure the project runs smoothly and will deliver against the objectives</td>
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<tr>
<td>‘Stress test’ the CAPI approach to ensure control of bias and quality</td>
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<td>Deploy teams of interviewers (using up to 40 CAPI tablets) on the transport network</td>
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<td>Have a head office ‘ground control’ team to monitor progress and data collection as it happens</td>
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<tr>
<td>Conduct coding, cleaning and editing of the data set to be supplied complete with a methodological report, pilot and fieldwork reports</td>
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<td>Deliver this in a reduced timeframe</td>
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EFFECTIVE INNOVATION IN RESEARCH

The main reason that this approach is innovative is because it is understood that no other company in Australia in the transport research field has been able to deliver a workable solution using CAPI for this type of intensive research. What set this approach apart were a number of factors:

- **Creative Thinking in Design** - Studies were custom-designed to maximise the potential offered by the latest Samsung tablets integrated with surveys designed in-house that were then conducted in a fast paced transport environment. The IP lies in the way the surveys are constructed – distilling all of the required complexity into a seamless and dynamic interface. Some choice modelling surveys would run to 60+ pages in paper format, would be impossible to conduct with customers and would be vulnerable to interviewer error. This was overcome in the new approach.
• **Clever use of Tablet Features** - Technology was leveraged to minimise post fieldwork coding and data processing. For example, GPS co-ordinates were used to identify exact origin/destination data. This was considered a major leap forward as it minimised the amount of work required at the conclusion of the fieldwork and ensured a greater level of data integrity.

• **Flexibility through Expertise** - With all design and programming managed in-house, surveys or quotas could be adapted on the move to reflect the way the study was unfolding.

• **Immediate Updates** – Using a ‘base station’ approach to the studies where a central team in the CBD office monitors interviewer progress and checks the data. This enabled daily client daily updates which built enormous confidence in the integrity of the data as the study unfolded.

**DEMONSTRATING THE EFFECTIVENESS**

There are a range of inter-related factors that demonstrate the effective use of technology in the research environment. Some succinct case studies follow, but it essentially comes down to five factors:

• **Time Efficient** - The process designed and implemented, compressed the amount of time required to conduct the large scale research with NSW customers. In the case of origin¬destination studies, often up to around 8,000 interviews, the time required has been close to halved.

• **Value** - Larger sample sizes can be achieved compared with a paper based approach; and they are achieved in a significantly shorter time frame. The team regularly delivered well beyond the minimum sample set down by the modelling teams. Beyond this, the quality of the data, which minimised the need for checking, delivered significant ‘indirect’ benefits to the client across the teams using the results.

• **Design Effective** - It has opened up the possibilities in conducting effective choice modelling in a transport/central location environment. As foreshadowed, what once was a 60 page paper based survey can be deployed in an easy to use tablet interface.

• **Quality Assurance** – There is minimal ‘handling’ of the data. There are better controls and checks throughout the fieldwork, no interviewer discretion (e.g. automated rotating options).

• **Better Experience** - A faster and more dynamic survey approach that delivers a better experience for respondents and interviewers.

The best testament to the success of the approach to using CAPI for transport related research is reflected in the enthusiastic reaction of the TfNSW client and the level of repeat commissioning:

“2012 was a phenomenal year for BTS (part of TfNSW)... We delivered on two very significant modelling projects... and have undertaken a range of large and small surveys in support of them. At the same time we have pioneered new survey techniques in transport by using electronic tablets to collect data.”

(Matthew Jones, BTS News, Jan 2013)

Overlaid on this, Public Transport Victoria (PTV) has now embraced this approach and is using it across a range of studies.

Below are three examples of TfNSW projects where the scale, scope and impact of the new methodology are evident:

1. **ORIGIN – DESTINATION STUDY**

**Purpose:** To provide data on travel patterns within a specific region of Sydney to help inform the demand forecasting program being developed by the Bureau of Transport Statistics (BTS)

• 9,272 intercept interviews were conducted on the Sydney Transport Network using tablets and a custom designed survey interface
• Key to the success of the study was the integration of Google maps into the survey to allow for exact GPS pinpointing of customers' origin and destination
• The research took 7 weeks to conduct – 1 week set-up, 4 weeks for fieldwork and two weeks for reporting
• These studies have typically taken TfNSW around 3 months to turnaround in the past

2. STATION ACCESS STUDY
Purpose: To obtain key data on customer mode access to five train stations

• 5,028 intercept interviews were conducted at 5 stations along with 12,164 observations.
• The survey was designed to maintain consistency with historical studies, while at the same time was able to be completed more quickly.
• TfNSW was updated on the results within hours of the survey coming out of field and a final data set was delivered 5 days after fieldwork was completed.

3. STATED PREFERENCE SURVEY
Purpose: To conduct stated preference surveys to understand the disutility associated with public transport interchanges:

• 740 intercept interviews were conducted over 7 days using 5 interviewers.
• A full factorial choice model was designed and implemented in central location via tablets.
• This type of study could not previously be conducted using a paper based approach
• Every possible choice combination could be included and the options could be completely randomised (no interviewer discretion possible).
Highly Commended - Public Policy/Social Research Award

Community Engagement Police Officers (CEPOs): Improving community safety and making a difference in remote Aboriginal and Torres Strait Islander communities

John Young, David Spicer, Desleigh Dunnett, Colmar Brunton Social Research and Judy Putt, University of Tasmania

THE BRIEF
Policing in rural and regional areas has its own distinct character. However, in Australia, there is very little research and evaluation on what constitutes effective policing, especially in relation to preventing crime and improving perceptions of community safety.

Police community engagement is critical in remote Aboriginal and Torres Strait Islander communities where in the past there may have been troubled relations with the police and / or there is ongoing family feuding or conflict within the community. With the large increase of police stationed in remote communities in the past five years, most notably in the Northern Territory, more attention has been paid to how to improve community policing in such locations.

The core elements of community engagement – effective communication, building trust and respect, and fostering a partnership – contribute to a mode of policing that is with and for the community. Although Australian police services have a long history of employing community liaison officers or community police to assist with their work in certain places and with certain groups, these schemes have attracted considerable criticism over the years. The crucial distinction between these schemes and the CEPOs is that the latter are sworn police officers.

Given the current over-representation of Indigenous people in the criminal justice system [they make up 82% of prisoners in Northern Territory (NT) Correctional Centres and 73% of offenders under the supervision of Community Corrections (based on a daily average)], yet only make up 30% of the total NT population, new and innovative approaches to policing are required in the Territory.

In November 2012 the Australian Government Attorney-General’s Department (AGD) commissioned Colmar Brunton to undertake a research evaluation of the Sworn Officer Community Engagement Police Officer (CEPO) Trial in the Northern Territory. The trial ran for two years, with the evaluation undertaken in the first half of 2013. Since then, the initiative has continued, in a modified form based on the evaluation’s findings. In addition, the evaluation has informed a jurisdiction-wide approach to community policing and crime prevention.

METHODOLOGY
The evaluation’s aim was to assess the overall effectiveness of the trial in meeting its objectives as set out in the Closing the Gap in the Northern Territory National Partnership Agreement. As per the Agreement, the CEPOs were expected to engage with their hosted communities to develop a shared understanding of prominent community safety issues, and to build stronger relationships between police and the communities in which they are based.

2 ABS 1362.7 - Regional Statistics, Northern Territory, Mar 2011.
The evaluation used a mixed methods participatory action research approach which included:

- 18 interviews with key stakeholders and a desktop review of documents, police incident data and video footage supplied by the AGD and the Northern Territory Police; and

- Fieldwork involving visits to nine remote communities across the Northern Territory. Eight of these communities hosted a CEPO, including: Wadeye, Yuendumu, Maningrida, Grote Eylandt (Angurugu/Umbakumba), Lajamanu, Ali Curung, Papunya, and Hermannsburg (Ntaria). The ninth community, Galiwinku, did not host a CEPO and was included as a comparison community to see if community relations with the police were any different. The fieldwork involved administering a quantitative report card (Impact Survey) and a follow up qualitative discussion guide to assess the effectiveness of the CEPO trial. During the fieldwork stage a total of 473 interviews were conducted: 323 with community members and 150 with service providers.

The approach employed is in line with best practice ethical approaches to remote Indigenous research and ensured the communities involved were at the centre of the evaluation process. The approach involved: seeking the communities consent for the research to take place via gaining written permission from clan leaders; involving the community in the design of the evaluation methodology and data collection instruments; employing and training local researchers to collect the data; sharing and asking for feedback on the initial results of the research; and presenting back the results of the research upon the completion of the project via the Night Patrol network. This approach meets with ethical standards as outlined by the Australian Institute of Aboriginal and Torres Strait Island Studies and the National Health and Medical Research Council.

RESULTS

The research found that the CEPOs have made a significant difference in community satisfaction with police and contributed to improved perceptions of community safety. These are both key performance indicators for the Northern Territory Police Force. The CEPOs have also contributed to increased satisfaction with police and perceptions of police integrity, both of which are measures of police effectiveness employed by the Productivity Commission at a national level. In particular, community members and service providers felt that the CEPOs were helping improve relationships and trust in the police, facilitating better service coordination at the community level, improving safe behaviours (particularly around school attendance), helping people feel safer, improving the flow of information on crime and crime prevention to the police as well as inspiring community members, service providers and the police to work better together to prevent crime.

The supporting qualitative research, key stakeholder interviews and desktop review found many examples of these benefits happening ‘on the ground’ providing further support for these positive community and service provider perceptions. For example, the School Counsellor at the Maningrida School reported she had a case load of around 300 children and young people. She estimated that the CEPO had helped her to support and mentor around 150 of these clients, some of whom had been exhibiting serious sexualised behaviour, were involved in break-ins, substance abuse and/or bullying. Similarly in Wadeye, it was reported that the female CEPO had helped many young women escape violence and that in at least one case, she had prevented a suicide. In Yuendumu it was reported that the CEPO was helping calm the community, reducing the incidence of violence between warring families and helping people feel safer as a result. Again, in Maningrida the Child Safety and Wellbeing service provider felt that the loss of the CEPO had been devastating in terms of reducing their ability to engage with the police and implement early intervention activities. It is hard to quantify the benefits that the CEPOs provided to communities and service providers in this way - but if they prevented just one case of murder, suicide, rape or child abuse then the trial has already paid for itself.
The CEPO above dancing at the Arnhem Land Sports festival in Maningrida was one of the most successful CEPOs in this evaluation. Based in Maningrida, he epitomised the essential qualities of a CEPO – committed, passionate, respectful of culture, open, friendly, empathetic with a strength-based problem solving philosophy. Even more important, he was said to “love the kids” (community member). In summary, he built trust through respecting culture and explaining police actions. He developed effective partnerships with all key stakeholders including traditional lawmen the ‘Bunawarra’ Maningrida Tribal Council, who accepted him as one of their own and became a visible consistent presence, which was accepted as part of community life. Through partnerships with key stakeholders he was also able to target and effectively deal with problems like low school attendance, behavioural problems at the school and grog/gunja running during ceremony.

As illustrated in the diagram above, the elements common to the most successful CEPOs included:

- Being highly visible. - CEPOs were often seen in community, walking around, engaging with people, sitting with elders under a tree or attending community meetings. In this way the CEPOs helped to take up the community engagement ‘slack’ caused by busy general duties officers and Officers In Charge.
- Visiting the families of people who had been arrested and explained what had happened to their loved ones in a caring and respectful way. CEPOs spend a lot of time explaining the law to community members which leads to a better understanding of why the police act as they do, the consequences of criminal behaviour, and how to stay out of trouble.
- Being positive role models and mentors to young people, unbiased mediators resolving interfamily conflict and drivers of positive change towards safer communities.
- Developing partnerships with all key stakeholders. Focusing efforts on youth, the school and empowering existing community leadership groups such as tribal elders and Local Reference Groups.
- They helped to build local capacity using local knowledge to problem solve and proactively prevent crime. These CEPOs did not have their own agendas; they listened and helped communities pursue their own community safety goals.

3 Traditional religious rituals often related to men’s and women’s business that are considered sacred.
• Providing a consistent uniformed police presence at agency and interagency meetings. This was highly valued, helped coordinate service provider efforts, and facilitated improved communication and relationships with the police, other service providers, community groups and the community in general.
• The personalities involved epitomised the archetypal CEPO, such as the personality of Csaba described above.

The evaluation demonstrated the value that Aboriginal and Torres Strait Islander community members and service providers place on community policing in terms of enhancing police legitimacy and community safety. The research also provided an evidence base that helped strengthen the model and inform jurisdiction-wide approach to community policing and crime prevention across the Territory. Most of the evaluation’s 39 recommendations have been implemented by the NT Police either completely, to some extent or are planned to be implemented subject to funding in the next financial year. In particular community policing has become an essential part of general duties policing rather than a peripheral activity that police just do when they have time.

For example:

• The evaluation supported the case for continued funding of the CEPO program beyond the two year trial.
• CEPOs now service 54 communities across the Northern Territory and their primary task is to guide, facilitate and mentor general duties police officers in undertaking community policing and engagement activities.
• Community policing has become the responsibility of the Officers in Charge (OICs) at every remote police station to implement via Community Safety Action Plans developed in close partnership with community Elders, leaders and service providers. 54 of these Plans have been developed over the last 6 months.
• In some cases CEPOs, rather than the Tactical Response Group, have been sent in to calm communities during potential times of crisis in communities like Wadeye, Ti Tree, Willowra and Ali Curung. So rather than sending in police who are experts at using force to quell violence, they are sending in police who are experts in community engagement.
• The new Regional Remote Policing Model makes extensive use of community mapping to capture the lessons learnt from the CEPO trial and ensure relationships with community members and service providers are maintained when personnel change.
• The evaluation has also informed community police training as described by the NT police officer below.

Senior Constable Marcus Tilbrook was seconded from the Police College to develop the training for the initial CEPO program and subsequently became the CEPO stationed at Lajamanu. Having retained the responsibility for in-field training of replacement CEPOs, he is currently developing a four-week training package for future CEPOs and says that he is:

“... using the points made in the Colmar Brunton Review to target our future training, to correct where we have been off-course and to reinforce our actions where the Review has demonstrated that we have been effective. The lessons from the Review have strongly influenced the design of our latest Phase of the Program and will help guide where we go from here. We have found the entire review process to have been conducted very comprehensively - combining information that we knew with a considerable amount that we did not. The correlations drawn and the ‘external viewer’ perspective brought to it have been invaluable in determining the future of the Program and - more widely - a number of elements of how we police in the more remote areas of the Northern Territory. We have been very impressed by the ability of the team to obtain and interpret information from the communities and other agencies in ways that directly target the outcomes agreed between us and the AGD.”
Highly Commended – Consumer Insight

State Trustees uses Integrated research and insights to launch an online Will Kit and become the market leader

Carmen Gould, State Trustees

THE BRIEF
State Trustees is Victoria’s Public Trustee, offering a range of financial and legal service to Victorians since 1939. One of its core mandates is to assist Victorians with preparation of their Wills.

Like the other state Public Trustees, State Trustees has only ever had a single product offering for Will preparation, providing a high-quality consultative service to a core customer base within the aged 50+ demographic.

Since 2009, State Trustees had commissioned Newspoll to conduct an annual phone-based survey to measure the penetration of Wills in Victoria. A significant trend had emerged that low-cost Will Kits were eroding overall consultative Will sales, which in 2013 comprised 11% of all Wills purchased. The majority of the emerging Will Kit market segment was however represented by consumers aged under 50.

It was clear that launching a Will Kit product would assist in broadening the State Trustees customer base. Further, demographic analyses of both consultative Wills and Will Kit customers indicated that the majority of Wills Kits were replaced with a consultative Will later in life, indicating a significant opportunity to establish relationships that could be nurtured and deepened over time via cross sell and up sell opportunities.

It was also imperative that any State Trustees Will Kit product and marketing campaign did not cannibalise its consultative Will product or reduce opportunities in the core aged 50+ market.

The Solution: Conduct research to support an insights-led product proposition

Following the initial market sizing and segment profiling study, State Trustees conducted further research to better understand the Will Kit consumer path-to-purchase, and the optimal brand proposition.

In the first instance, focus groups were conducted by the State Trustees Client Insights team with the target under 50 demographic in order to qualitatively explore the motivations and circumstances leading to Will preparation. Laddering techniques uncovered both triggers and barriers to Will Kit purchase, and the State Trustees brand was further explored through the use of projective techniques incorporating role-laying.

In addition, a quantitative, online survey of the same demographic was undertaken utilising representative sample provided by E2E Research of consumers with and without a consultative Will or Will Kit product. Both the brand and product purchase factors were explored and various Will Kit product solutions were offered to respondents in order to estimate demand and identify optimal pricing.

THE STRATEGY: DEVELOP A HIGHLY TARGETED GO-TO-MARKET SOLUTION
The product and marketing strategy for the State Trustees Legal Will Kit drew principally from the market research findings; and in particular the life events that triggered Will Kit purchase. Four key segments were identified within the aged 30-50 market:

- Newly Weds
- New Parents
- First Home Buyers
- Overseas Travellers
The strategic communication framework for the marketing campaign was directly informed by the research findings. Given the fears uncovered amongst some consumers that Will Kits may not be legally valid, it was important that State Trustees trusted brand positioning was fully leveraged. To that extent, the following brand messages were used:

- **Expertise**: more Victorians trust State Trustees to prepare their Wills than any other organisation.
- **Reliability**: Trusted by Victorians for over 70 years.

In addition, the product proposition was led by the principal rational purchase factors discovered in the research:

- **Convenience & simplicity**: Easy to understand and can be completed in your own time
- **Good value**: An affordable way to give you peace of mind.
- **Legally sound**: Legally sound/valid throughout Australia

Finally, segment-specific messaging was developed which reflected the emotional purchase drivers indicated by the research:

- **Newly Weds**: Be prepared so your loved ones are too
- **New Parents**: Security for your family’s future
- **First Home Buyers**: Secure your assets and protect your biggest investment.
- **Overseas Travellers**: Safety check before your adventure

Finally, an attractive and simple product solution was developed and tested by a sample of consumers within the target demographics.

**THE OUTCOME: STATE TRUSTEES BECAME THE FIRST PUBLIC TRUSTEE IN AUSTRALIA TO LAUNCH A WILL KIT PRODUCT**

In April 2013, the State Trustees Legal Will Kit was launched. Developed as a purely online offering, the Will Kit reflected consumer need for a convenient Will preparation solution. Priced at $29.95, the product was differentiated from competitors through the inclusion of a comprehensive but simple to understand Will Planning guide.

Since it would be aimed at a new demographic for State Trustees, a unique microsite was developed to house the State Trustees Will Kit offering. In this way the Will Kit would not compete with the consultative Will product, but also provide the opportunity to create an easy-to-use ecommerce site with a fresh, simple and modern design for the younger demographic, with a link back to State Trustees branding through font and colour palette. The branding reference would leverage the benefits of the State Trustees proposition of expertise, longevity and trust. Moreover the domain iwillkit.com.au was used to dually reference the online nature of the Will Kit, and also assist in promoting a positive campaign sentiment (e.g. “I Will when I say I do”).

The guiding principle of the campaign was to create a seamless branded experience for the new product from advertisement through to microsite through to purchase, that was importantly targeted to each segment. The microsite (which formed the hub of information for the product), was therefore built to be ‘versioned’ by targeted audience segment, incorporating differentiated imagery and dynamic information and content relevant to the four key segments. For example, if a user clicked on a Facebook advert targeted at new parents, they would click through to the New Parents version of the site, which along with emotive imagery and messaging, explained everything that new parents needed to take into consideration when making a Will. If a user landed on the site through a generic search term or advertisement, the landing page they viewed was a generic version, with the option that they could self-identify via a “Who are you?” call to action. Modern, simple, yet emotive iconography was used in the design, incorporating the segment–specific key messaging.

The marketing campaign principally consisted of digital advertising and communications to drive website visitation and conversion. In addition, media outreach was conducted amongst the channels and media relevant to the key segments, including the influential blogger space. Fresh visual design, engaging online content and the use of the Will market research drew out strong and interesting news angles for each target segment.
THE RESULT: AFTER JUST FOUR WEEKS, STATE TRUSTEES LEGAL WILL KIT OCCUPIES THE NO.1 SPOT

Within the first hour of launch, State Trustees had made its first Will Kit sale, and within four weeks of the launch the campaign had produced impressive results. Not only were sales tracking at 130% to target, Experian Hitwise digital insights indicated that www.iwillkit.com.au was number one on market share for website visitation amongst direct competitors.

After almost one year in market, online Will Kit sales have exceeded expectations, and State Trustees continues to occupy the number one position in the Australian online Will Kit market.

Other measures of success have included:

- A uniquely high 16% conversion (click–through rate from advertising) has been achieved. The conclusion can be made that the targeted and integrated design of both the advertising and the site working extremely well.
- No drop in consultative Will sales has been observed since the inception of the Will Kit campaign, indicating that cannibalisation of the existing State Trustees customer base has not occurred. Demographic analysis shows that the majority of Will Kit customers are also within the targeted segment.

The success of the State Trustees Legal Will Kit is undoubtedly due to the use of insights to understand our target customers and their needs. Our approach to acquisition required a seamless customer experience for each segment, from advertising creative to the information, imagery and messaging used in the www.iwillkit.com.au microsite.

Moreover, the new product look and feel, and position of the State Trustees brand in a simple, modern, fresh way has resulted in extremely positive market and customer perceptions. This has been evidenced by a significant lift in brand awareness amongst Victorians aged under 50 since the launch of the Will Kit; a key objective of the campaign.

In short the success of the campaign can be summarised by the quantity of profitable sales, which has surpassed forecast (120%). In the long term, the success will result from having established relationships that can be nurtured and deepened over time in order to leverage cross sell and up sell opportunities, and retain the customers for their entire product lifecycle with State Trustees.

A post-purchase survey of Will Kit clients conducted by the State Trustees Client Insights team also reveals that 82% would recommend the State Trustees Will Kit, with an extremely positive Net Promoter Score of +77%. And encouragingly, after just one year, the number of Will Kit clients who have subsequently purchased a consultative Will has exceeded expectations.
CAMPAIGN CREATIVE  www.iwillkit.com.au

Targeted landing pages: Newlyweds

I Will when I say I do
Developed by State Trustees, will writing experts for over 70 years, the Legal Will Kit is a convenient, quick and easy way to complete your legal Will for just $29.99.

Targeted landing pages: Homebuyers

I Will protect my castle
Developed by State Trustees, will writing experts for over 70 years, the Legal Will Kit is a convenient, quick and easy way to complete your legal Will for just $29.99.

Targeted landing pages: New parents

I Will protect my most important treasure
Developed by State Trustees, will writing experts for over 70 years, the Legal Will Kit is a convenient, quick and easy way to complete your legal Will for just $29.99.
Targeted landing pages: Overseas travellers

Legal Will Kit

I Will before I jet away

Developed by State Trustees, Will-writing experts for over 70 years, the Legal Will Kit is a convenient, quick and easy way to complete your legal Will for just $29.99.

Online Banner ads

Facebook ads

State Trustees Legal Will Kit: Product Design
Highly commended - Consumer Insight

Shifting Gears & Driving Business Change by Engaging Dealers
Loretta Law, Hannah Roy, Carlie Sidey – Toyota Motor Company Australia
Ante Grabovac, Ben Sullivan, Horst Feldhaeuser – Potentiate Ltd

THE BRIEF
Toyota Motor Company Australia (TMCA) is the largest car company in Australia with over 200 dealerships on over 300 sites across the country. TMCA has a stated goal of being the car company with the highest levels of customer satisfaction with both the sales and service experience by 2015. To help achieve this goal, they acknowledged that they needed to change the CS ‘culture’ both within the organisation and throughout the dealer network. TMCA recognised that its existing survey program and systems were not sufficient to support this goal. A further complication was dealing with the politics of the TMCA/dealer network relationship and the different needs of both parties.

Consultation with both Senior and mid-level TMCA staff and also dealership representatives highlighted concerns around existing survey length (customer impact), invitation and hence reporting lag (CS not ‘real’), and also the ‘usability’ of existing reporting – it was not meeting both the macro and the micro level reporting needs of the organisation and its dealerships. The combined impact of the aforementioned issues resulted in a lack of engagement with Customer Experience measures and activities throughout the organisation making it difficult to drive improvements.

THE SOLUTION:
TMCA commissioned Potentiate to redesign the Customer Experience program to meet these objectives.

Detailed consultation around the challenges and needs of both the dealer network and National and regional offices led to a design that met all customer experience reporting needs in one place.

The surveys were redesigned to gather only data that is required to improve experience - ‘diagnostics’ only asked of ‘unhappy’ customers. A census sampling approach and multimodal data collection systems deliver a personalized survey to all customers shortly after the sales or service event. The electronically collected survey data is immediately visible to both Dealers & TMCA allowing customers identified as being unhappy (via emailed hot alerts) to have their concerns addressed immediately.

The data is delivered to dealerships and TMCA in an engaging and intuitive online CE Portal that is live 24/7. The portal was designed as both measurement and management Tool – measure performance and assist management to improve at all levels.
The portal provides macro and micro level access and reporting. TMCA staff can see aggregated data from national overview down to individual salespeople or customers in a few clicks and easily see trends over time and between regions, dealership size, and vehicle type. Potentiate is supporting TMCA with additional ad-hoc insights analysis and reporting.

Dealerships have immediate and easy access to individual surveys and easy to use and understand site and staff diagnostics - what needs to be done to improve process performance at the individual level and general processes.

More complex reports - for both dealers and dealerships - are available at the press of a button and also delivered via email at scheduled times.

Since launch, a number of related tools and services have been developed that further enhance the dealerships toolkit. A customer experience smartphone app means that dealership staff and TMCA can access results anywhere, anytime.

Email addresses that were incorrect can now be updated by dealership staff and invitations to complete the surveys are resent resulting in more feedback and improved accuracy of Toyota’s CRM databases.

Now in its 2nd iteration after being recently upgraded to HTML5, the portal includes additional industry comparisons from the Automotive Retail Manufacturer Syndicate (ARMS) as well as customer leads generated off the Toyota website and distributed to the right dealership in real-time – leads can be followed up within an hour of submission.

**STAFF ENGAGEMENT:**
The major success factor for an effective Customer Experience program is the continuous engagement of the users. Moving the LIVE reporting platform to mobile devices and HTML5 as well as adding additional information and services as detailed above, has set the platform for this program.

To further enhance the usage and engagement with the program, TMCA and Potentiate have regular fly-arounds throughout the country, visiting local dealerships to discuss their needs and challenges, and help them utilise the program as effectively as possible. TMCA also has annual dealership staff competitions and conferences to showcase best-practice in customer service.

In 2012, Toyota introduced not only a minimum set target but a 3-Star, 4-Star and 5-Star targeting system, whereby dealers that were performing above targets had higher aspirations to work towards. The aim is to progress the dealers from below target to above the minimum three star target, those at 3-star to above 4 and those at 4 to be above 5. What we have found is that 5-star dealers are associated with customers stating “their expectations of their experience have been exceeded” and that is precisely what Toyota is working towards. The targets for dealers have remained consistent in order to incentivise dealers to move up each tier.

Toyota has now introduced the prestigious 5-Star Dealer Award giving dealers who perform above 5-Star in both Sales and Service the right to promote themselves and be promoted by Toyota as a 5-Star Dealer.
THE IMPACT:
This CE program & portal has changed the way TMCA & dealerships view LIVE customer experience with increased focus on customer experience both within TMCA and across the network. Customer experience has gone from a ‘monthly’ to a ‘daily’ activity – it is just more real - and seeing the feedback from 120,000 customers each year is extremely powerful. Consequently, usage of the portal has increased by over 200% to over 35,000 logins per month – the voice of the customer really does matter and is being listened too.

The program and associated activities has also resulted in improved customer data quality and enrichment, improved response rates (a ‘truer’ picture of the customer experience landscape), and also improved relationship between TMCA and Dealerships.

In turn, TMCA have seen improved customer satisfaction levels in both sales and service, with both scores increasing by around 5% a rating of 94 and 90 out of 100 respectively.

Word of mouth (NPS score) has seen even more dramatic change with increases of 22% (sales) and 27% (service).

Underpinning these overall improvements are a reduction of mistakes and an increasing number of customers who see their expectations exceeded.

BUSINESS OUTCOMES:
As a result of lifting the dealers’ engagement and subsequent customer experience, TMCA saw a number of tangible improvements on their business results.

Loyalty towards Toyota vehicles, a measure of re-purchase amongst existing customers, increased from 49% to 55% from launch of the program in 2011 to December 2013.

During the same period, Toyota’s market share of new vehicles in the customer segment targeted by the program improved from 17% to 21% confirming its #1 position in the Australian Automotive market - not a small achievement in this ever increasing competitive space.

Our data also shows that dealers performing above target continuously improved over the past three years for both Sales and Service.
At an individual dealer level, those dealers who moved up the Star rating ladder reported increased revenues of up to $100,000 per dealer.

**COMMENTS FROM THE DEALERS:**

TMCA and Potentiate just recently upgraded the LIVE portal to the latest software technology (HTML5). Here’s what some of the dealers said:

"I want to thank you guys for the fabulous portal. It provides us with real time evidence of how our customers feel about us and data to share with each other to support our need for improvement. It also allows us to compare ourselves to other dealers which ensures we don’t become complacent. There’s always someone ahead of us and always something to strive for".

"The portal directs us to how and where we need to improve and encourages us to do well. It provides constant motivation and inspiration to be The Best (which is of course a highly movable target)".

"Thanks heaps, you guys make CE fun!"

**COMMENT FROM TMCA:**

"TMCA has long had the stated objective of being the number 1 customer focused organisation. For many years we have measured our dealerships’ performance in the area of customer satisfaction and yet the focus was on the score, more so than the Insight behind it. The Customer Experience portal developed by Potentiate and the program put in place around it to support our dealerships’ development in the area of customer experience has enabled greater focus to be put on the “why” and the “how”. Why was this individual customer’s expectations not met? How can my dealership put in place a process to ensure this doesn’t happen again? Our Customer Experience Managers are empowered to tackle the roadblocks within their dealership that are holding back exceptional customer service with the data that is now at their fingertips in a real time environment. This has resulted in engaged dealership staff and a higher level of customer satisfaction – a win win."

Hannah Roy, Manager Insights, TMCA

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<th>Sales</th>
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<th>2012</th>
<th>2013</th>
</tr>
</thead>
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<tr>
<td>Dealers above 3-Star targets</td>
<td>65.4%</td>
<td>81%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Dealers above 4-Star targets</td>
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<td>47.2%</td>
</tr>
</tbody>
</table>

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<table>
<thead>
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<th>Service</th>
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<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
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<td>64.2%</td>
<td>72.2%</td>
<td>74.0%</td>
</tr>
<tr>
<td>Dealers above 4-Star targets</td>
<td>N/A</td>
<td>51.7%</td>
<td>57.2%</td>
</tr>
<tr>
<td>Dealers above 5-Star targets</td>
<td>N/A</td>
<td>36.8%</td>
<td>39.9%</td>
</tr>
</tbody>
</table>
COMMENT FROM POTENTIATE:
“The Toyota CS program has proved to be an extremely successful tool for all users to obtain 24x7 live feedback on how Toyota is performing. The program is enhanced by the addition of immediate actioning of surveys that are deemed to be issues, Leads Management being made visible and actionable on the portal and the ability of dealers to correct customer contact information for the survey to be sent to the correct customer. The SmartPhone app complements the portal and provides a summary of KPIs for the out of office user to be able to view their scores at anytime, anywhere. Experiencing how this program truly changed Toyota’s business is exciting.”

Ante Grabovac, Toyota Account Lead

WHERE TO FROM HERE:
Toyota and Potentiate are continuously looking to expand the program further with additional questionnaires based on the satisfaction of other areas of the business, like used vehicle sales, company fleet, lost sales studies, repair feedback, and follow up on Hot Alert resolution.

The introduction of advanced text analytics to the portal will help analyse and visualise open-ended customer verbatims.

Again in the words of a dealer the continuous improvement of the program is best summed up as per below...

“After all what is “The Best” ....? I think David Campese [Union Player] summed it up at an airport interview years ago when the Wallabies were flying out to play England, he said “it’s kinda like they were the best, then we were the best, now they’re the best and we want to be the best, I reckon we’ll win - no idea what the best really is but it kind sums up the Portal to me.””
SHORT & SWEET
MAINTAIN THE RIGOUR, REAP THE REWARDS

The quest to improve the respondent experience whilst enhancing data quality and maintaining analytical integrity through a markedly shorter survey.

Authors:
Stewart Warren
Rohan Raghavan
Ken Roberts
Executive summary

Reducing survey length presents a critical challenge for the research industry. The modern consumer is time-poor and becoming increasingly mobile. There is a pressing need to provide a better survey experience for respondents and to increase completion rates without compromising data quality or insight for clients.

Forethought Research has developed a methodology that we refer to as the Partial Design that produces reliable tracking metrics and robust multivariate regression models with significantly reduced survey lengths. The Partial Design specifically targets the large, repetitive sets of questions critical for brand tracking and customer experience studies by allocating respondents random partial sets of questions. This is in contrast to the modular approach that discretely allocates respondents to entire sets of questions within this section of the survey. Using simulations to represent the missing data we are able to replicate the hierarchy of model parameter estimates across a data set with 10 independent variables with as much as 50% of respondent data missing. The Partial Design was also superior to the modular design in replicating tracking metrics.

The Partial Design solution developed by Forethought Research meets the challenge of maintaining the structure and rigour of traditional surveys while simultaneously providing the modern consumer a better and shorter survey experience. Importantly, the Partial Design achieves this while also providing clients with consistent tracking metrics and robust replicable modelling.
The current state of play

Has any researcher ever seriously entertained the idea that a 30-minute questionnaire could prove attractive for a respondent? Forego here the need for sophisticated research; the answer would be a resounding “no”.

Yet the lengthy questionnaire continues to be the favoured tool of the researcher, attempting to maximise insights from a minimum set of respondents. However, this outdated design is less convincing as the ideal approach for capturing data, given the time scarcity of the modern consumer and the rise of respondent mobility.

Completing a quick three-minute survey as the respondent steps off a flight, while he or she is commuting to work, or just sitting at a café — these in-the-moment surveys are increasingly shaping the direction of the industry.

Google figures indicate that on average, we have just 26 minutes a day free. It also cited a prediction that 87% of connected devices will be via smartphones and tablet devices by 2017 (Google, 2014). It is no surprise then that the increasingly mobile respondent will have less time to trudge through endless surveys.

Lengthy questionnaires have increased dropout rates (Cape, 2010) and are plagued by respondent fatigue. This has significant implications for data quality (de Jong, Fan and Yan, 2010; Galesic and Bosnjak, 2009; Yan, Conrad, Tourangeau, and Couper, 2010). Lengthy questionnaires are also known to represent an accessibility barrier to difficult-to-target segments, affecting completion rates in populations such as the youth demographic. The quality and fatigue factors associated with longer surveys are also compounded by considerable field-house costs.

In contrast, shorter surveys provide better survey experiences for respondents, yield greater completion rates and richer data quality for the researcher. This is an unspoken agreement.
The challenges of a shortened questionnaire

The current reality, however, is that in the absence of real solutions the researcher has acquiesced to continue using longer questionnaires. While the speed at which the industry adapts to the need for shortened questionnaires has intensified, much of the industry has remained in a state of hesitation; the customary belief being “losing” data through shortened surveys is perceived as less insightful.

But with the right survey design and some innovation, equivalent or comparable insights can be found without resorting to a lengthy survey. The industry question is how the researcher will gain the same insights from shorter, bite-sized questionnaires.

The challenge is to maintain the framework and rigour of traditional surveys whilst also attempting to reduce length. Shortening the questionnaire while maintaining consistency across metrics, and ensuring stable, robust results from modelling, is a priority.

The recommended upper limit of a questionnaire is 20 minutes (Frede, 2010). This is too long. The major contributors to study timings are large, often repetitive sets of questions. While tedious, these questions are critical to brand tracking and customer experience studies (see Figure I below).

Typically, these questions conform to a hypothetical structure, as shown in Figure I.

The hypothetical structure aims to channel respondents’ thought from the transactionals, through to the sub-dependent and onto the intended dependent. (Rust and Zahorik, 1993). This ensures the consideration set of all service or brand aspects are carefully factored into the responses at the sub-dependent and dependent questions via the continual prompting of micro-attributes.

Each rated question forms the basis for the ever-crucial objective of tracking performance over time, providing important metrics which may feed into KPIs for business teams.

The other core objective achieved through this assault of questions — one that is more strategic — is the generation of multivariate linear regression models. These reveal the hierarchy of importance of overall satisfaction or retention drivers at customer-experience touch points. Or, in the case of the Customer Value Analysis (CVA) framework, reveal the importance and assessments (or choice) of brands within a market.

These models allow clients to prioritise and action initiatives to ensure maximum impact on the intended outcome; be they operational (improving customer experiences) or strategic (improving brand positioning).

Given the obvious research benefits provided by this hypothetical structure, the industry is loath to compromise KPI or modelling with shortened questionnaires.

Figure I

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Alternate research designs

To investigate the trackability of these KPI-metrics with this cumbersome section of questions, two designs were considered:

Modular design for metric tracking

The Modular design (see Figure II) randomly “chunks” respondents into micro, bite-sized surveys. This is a practice which has been tested by several researchers around the world with varying degrees of success (Kelly, Johnson and Stevens, 2013).

The Modular design works in the following manner: respondents rate all sub-dependents and are randomly allocated a set of transactional banks; in our example, 3 out of the 7 transactional banks. This reduces the number of questions asked from 78 to 38. The remaining 4 sub-dependents are allocated to the respondent with dot points as prompts.

Forethought Research incorporated similar design logic in a recent study, where the Modular survey achieved a reduction of 58% in timings for the section of interest.

However, despite controlling for sample composition and point-in-time of data collection, a noticeable change was observed in the ratings scores in the sub-dependents. Figure III (below) shows that an average drop of 5.6% was observed between the results obtained for those who were prompted by the transactional and those who were prompted with dot points. From a metric-tracking perspective, this design falls short of providing reliable results.

The results mentioned were from an Experience study of approximately n = 2,500. A similar drop effect had also been observed in a different study, which utilised the CVA framework.

Figure II

Figure III

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The Partial design for metric tracking

In contrast to the Modular design, the Partial design (Figure II) allocates respondents a set proportion of sub-dependent questions, and a set proportion of transactionals within the corresponding banks. Forethought uses the term “Partial”, as the researcher is partially collecting banks of questions, not “chunking” blocks of questions, whilst also partially prompting the respondent.

With this approach each respondent can be rightly said to have a unique study experience. Over a healthy sample size, the effect of just partially prompting the sub-dependent provides a more complete patchwork.

In the example of a Partial design shown in Figure IV, the respondent is only exposed to approximately 60% of the sub-dependents, and only 60% of the corresponding transactional banks. This partial structure would reduce the number of questions from 78 to 29, besting the Modular design.

We now present the results from a case study Forethought conducted which reviewed the effects of a Partial design on metric tracking, where two sets of sub-dependents were partially prompted with 60% of transactionals and compared to a complete study, which was run in parallel.

As observed, when compared with the results from the Modular study explained above, metric consistency vastly improved across the results for the sub-dependents, and maintained the transactionals under them.

In this case the average difference across the results from the two studies was less than 0.1%.

The results from this Forethought study have shown that this approach to Partial design is able to provide reliable metric tracking while achieving section length reduction by 33% and 44% respectively.

Figure IV

Figure V

SHORT AND SWEET: MAINTAIN THE RIGOUR, REAP THE REWARDS
Modelling with Partial data

Having shown how the Partial design copes with providing metric tracking stability, we now focus our attention on running multivariate regression models with such partial data sets—an exercise which is quite challenging with traditional methods.

Basic imputation techniques which are quite commonly used to pad out the missing data, such as random and mean imputation, are acceptable alternatives when the proportion of missing data is under 10%. When imputing missing data in the volumes that we are dealing with in partial data sets, i.e. up to 50%, such techniques flatten the model’s parameter estimates, reducing the level of, and likely changing, the derived insight.

Smarter imputation paradigms like Gibbs sampling have proven to be worthy methodologies when it comes to missing data. However, they are computationally intensive and when used to impute missing data on the scales we are dealing with, tend to increase multicollinearity between variables. This dramatically impacts the reliability of parameter estimates from the model.

Data fusion is another approach that has been a candidate for breaking down large surveys into smaller ones, with the goal then being to re-aggregate them in the data processing stage. However, to fit our purpose, hook or link questions are needed to recreate a complete data set (single customer view) to provide coverage across the broad range of questions surveyed. Again, this can be time intensive and needs assumptions to be made in matching respondent cohorts, which is not ideal.

The Partial design affords us the rarity of essentially a MCAR (missing completely at random) state; an ideal condition which lends itself to a novel regression modelling approach which we outline in the next section sets.
**Pair-wise: an algebraic approach**

To derive beta parameters we rely on an approach that utilises pair-wise correlations:

\[
\beta = R^{-1}r
\]

Where \( R \) is the pair-wise correlation matrix \( XX \), and \( r \) is the correlations of \( XY \). Utilising the MCAR state, we assume the limits \( R \to \rho_{XX} \) and \( r \to \rho_{XY} \) as \( n \) becomes large.

This \( \beta = R^{-1}r \) can be proven algebraically equivalent to the least squares \( (XX')^{-1}X'Y \). Assuming all rated X variables and Y follow normality and understanding the mentioned limits, when you standardize all the X variables and Y one gets,

\[
R = E[XX] = \frac{XX}{n-1}
\]

and

\[
r = E[XY] = \frac{XY}{n-1}
\]

hence,

\[
\beta = (X'X)^{-1}X'Y = (n - 1)(X'X)^{-1} \frac{X'Y}{n-1} = \left( \frac{X'X}{n-1} \right)^{-1} r = R^{-1}r
\]

Figure VI (Page 9.) shows how the modelling approach copes with missing data of varying degrees. Each model has been constructed via bootstrapped models using data acquired through simulations.

**SHORT AND SWEET: MAINTAIN THE RIGOUR, REAP THE REWARDS**
As observed in Figure VI, across a data set with 10 independent variables, the hierarchy of parameter estimates is maintained even with up to 50% of the data missing at random from each respondent’s entries. The timings to conduct the mentioned approach is minimal, no more computation power required than running the common linear approaches available. Further, there is no requirement to impute the missing data. This expands the effectiveness and rigour of the approach as it further reduces the complexity and timings involved.

The Spearman’s rank and Pearson’s correlation coefficients show each of the above Partial models were highly correlated with the Full model.

As observed in Figure VII, the Pearson’s correlations degrade as the proportion of missing data increases. While this is no surprise, the fact that the correlations are this high despite a removal of 50% of the data is remarkable. Model estimates with partial data sets can be improved by balancing the amount of missing data with the sample size. As shown in the Figure VIII below, an increase in sample size alone can render more accurate parameter estimates.

**Figure VI**
Parameter Estimates Across Varying Degrees of Missing Data
Note: Simulated outcomes were used to conclusively compare parameter estimates from the partial data sets with the known parameter values.

**Figure VII**
Proportion of Questions Removed

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<tr>
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<td>0.99</td>
</tr>
<tr>
<td>50%</td>
<td>0.96</td>
</tr>
</tbody>
</table>

**Figure VIII**
With additional sample the pair-wise modelling approach, with varying degrees of data removed, converges to the full model’s parameter estimates.

Note: This empirical evidence agrees with the limits established earlier, $R \rightarrow r_{12}$ and $r \rightarrow r_{12}$ as $n$ becomes large.

**SHORT AND SWEET: MAINTAIN THE RIGOUR, REAP THE REWARDS**
In the rare instance the $R$ is non-invertible, we simply bootstrap and find an array of the invertible $R$ and take the average of the found $R^{-1}$. This still provides a robust estimate. The errors associated with each model are shown to be quite palatable. The 25th and 75th interquartile ranges of the bootstrapped “50% removed” models, with $n = 4,000$ are shown below.

This signifies the stability and hence the robustness of the modelling approach. Pair-wise techniques provide access to sample reductions beyond the capability of its imputation cousin; the opportunities to develop further in this area are vast.

**Figure IX**
The 25th and 75th interquartile ranges of the parameter estimates when 50% of data is removed.
To close

Forethought Research has sought to develop a solution to the problems of lengthy questionnaires in an increasingly mobile consumer market.

The Partial Design approach developed by Forethought ensures greater survey engagement, and accessibility for respondents while providing researchers with a simple, effective approach to data sampling and modelling.

This new method has shown that comparable insights can be achieved while simultaneously providing better costs, reach and improved data quality and maintaining analytical integrity.

SHORT AND SWEET: MAINTAIN THE RIGOUR, REAP THE REWARDS
Acknowledgment and thanks to Dr. Karen Hansen and Matthew Ho at Forethought Research for their contribution to this award submission.

References


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- **CONTEMPORARY** – and up to date with current ethical, legislative and privacy regulations that affect the industry; they are required to undertake yearly updates

- **EXPERIENCED AND KNOWLEDGEABLE** – with a minimum of 5 years in the industry and able to meet the due diligence requirements for the ISO standards – ISO 20252 and ISO 26326

- **COMMITTED** – to the market and social research industry and to individual professional development and learning

- **COURAGEOUS** – to acknowledge a world of constant change and to ensure they are keeping up to date with industry developments

- **CURIOUS** – about the world in general and research in particular to bring the best information possible to the client

- **ENGAGED** - with the changes occurring in the world of research

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