Question stability in brand image measurement: Comparing alternative answer formats and accounting for heterogeneity in descriptive models

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Abstract

High quality image data on how consumers perceive brands is essential to make good brand management decisions. Prior studies reveal that brand images are not very reliable, as they are typically measured in industry, which might be due to the answer format typically used (Rungie et al., 2005). The practical implication is that brand image data — as currently collected in consumer surveys — is not a valid source of market information. We challenge this implication.

Using three measures of stability we test whether the binary answer format produces image data less reliable than alternative formats. We investigate whether the aggregate descriptive model of brand image stability proposed by Rungie et al. can be improved by accounting for heterogeneity.

Results indicate that, compared to alternative formats, binary answer formats lead to equal stability levels, and most brand-attribute associations are stable. Unstable associations typically fail to describe adequately the brands under study.

Practical implications include that binary brand-attribute associations can be used safely to measure brand images. Also, practitioners can get guidance about required brand management measures by discriminating between stable and unstable brand-attribute associations. A model that helps managers classify brand-attribute associations into stable or unstable is proposed in the article.

Keywords: Brand image stability, Brand image stability, Answer formats, Questionnaire design, Finite mixture models, Unobserved heterogeneity

1. Introduction

Brand image is defined and measured as a "set of associations which a brand has acquired for an individual" (Joyce, 1963, p. 45) and as "brand associations in consumer memory" (Keller, 1993). Strategic marketing decisions, such as positioning and segmentation, are typically based on market information obtained through consumer surveys. Brand-based industries use key market information from brand image survey data to determine how consumers perceive their brands. Because strategic decisions, and consequently expensive marketing actions, are based on information contained in brand image data sets, these must be of the highest quality.

Several studies over the past decade have questioned the quality of brand image data resulting from typical brand image surveys. These mainly criticise brand image data for its instability — if respondents are asked repeatedly to state brand-attribute associations, they do not reproduce the results of the first measurement very well in the second measurement. For a brand-attribute association to be stable for one particular respondent, the respondent would have to express agreement with the association in all repeated measurements. For instance, if a respondent states that McDonalds is expensive when asked for the first time, stability means that he or she would also say that McDonald is expensive when resurveyed.

Castleberry et al. (1994) use response levels (RL) to indicate the proportion of respondents assigning an attribute to a brand, and repeat rates (RR) to indicate the proportion of respondents assigning an attribute to a

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brand multiple times out of those who initially made this brand-attribute association. While response levels are stable at the aggregate level, answers are very unstable at the individual level, averaging at repeat rates of about 50 per cent (Castleberry et al., 1994). "Error of measurement" (p. 161) may explain this low level of stability. Dall'Olmo Riley et al. (1997) provide additional empirical support for the findings of Castleberry et al., with average repeat rates ranging from 40 to 60 per cent. They propose a simple model, in which RR and RL are linearly related by a constant of 20, to describe the relationship between RL and RR at the aggregate level across all brands and attributes measured. The model notation states that the constant of 20 is a percentage because both RL and RR are percentage values by definition.

Model 1

$$RR = RL + 20\%$$

The practical interpretation of Model 1 is illustrated by discussing three kinds of brand-attribute associations along the linear function: (1) those held by a high proportion of consumers in a stable manner (see the top right-hand corner of Model 1 in Figure 1); (2) those held by a small proportion of consumers in an unstable manner (bottom left-hand corner); and (3) those held by a subset of consumers which are of medium stability (the middle area). Model 1 does not allow for a small subset of consumers which has stable beliefs about a brand-attribute association. It does not account for consumer heterogeneity, although targeting specific sub-groups of the marketplace, and thus harvesting knowledge about consumer heterogeneity, is fundamental to brand-based industry marketing.

Almost a decade after Castleberry et al. (1994), Rungie et al. (2005) reinvestigated brand image stability, and empirically demonstrated, over several data sets, the instability of brand images when measured in a binary way. This result throws the stability of binary answer formats into question, although the authors state explicitly that "a similar lack of reliability may exist for attitude questions in a Likert format" (Rungie et al., 2005, p. 317). "Reliability" is a broader term than "stability", because it includes both test–retest reliability and internal consistency. "Stability" is therefore preferred, because it refers to the relation of two repeat measurements of the same individual to each other, thus capturing only the test–retest reliability component. Rungie et al. (2005) propose an improved model that describes the aggregate relationship of RR and RL in which the coefficient c is referred to as "reliability":

Model 2

$$RR = c + (1 - c)\,RL$$

Figure 1: Graphical illustration of Models 1 and 2