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Comparing two image research instruments: The Q-sort method versus the Likert attitude questionnaire

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ABSTRACT

Despite the attention for corporate, brand and product images, only few studies focus on methodological comparisons of image research methods. This article presents a comparison of two current instruments: the Q-sort method and a Likert attitude questionnaire. The study applies both methods to measure the image of beef, using the same assertions in similar samples of consumers. The two methods produce consistent results, but differ in the possibilities of data analysis and interpretation. An advantage of the Q-sort method is that it offers straightforward insights in the underlying structure of image within audience segments. On the other hand, the Q-sort method does not give overall indications of an image, and limits occur for analyzing the relationships between image and other variables.

1. Introduction

With the rise of image as an object of communication and marketing research, many different instruments have been developed to measure corporate, brand and product image among stakeholder groups. Most of these instruments stem from psychological research traditions. The diversity of research approaches available reflects the ambiguity of the image concept itself, which has been defined in many different ways (Christensen & Askegaard, 2001; DeFleur & Westie, 1963; Poiesz, 1989). There is no universally accepted image definition, and the more recent introduction of the equally intangible and strongly related concept of reputation only seems to add to the confusion.

Poiesz (1989) categorizes the various image definitions by placing them on a consumer elaboration continuum. He thus distinguished three views on image, which can be easily connected with possible research approaches. In the case of *high elaboration*, an image represents a complex network of meanings stored in memory. This implies that the measurement of an image must aim at revealing and exploring associations people have with the image object, which calls for qualitative and open methods like the Kelly repertory grid or laddering. In the case of *medium elaboration*, an image is a theoretical and operational equivalent of an attitude: it is the overall evaluation of an artifact based on salient beliefs held by consumers. Consequently, the measurement of image resembles attitude scales, involving the evaluation and weighting of beliefs. In the case of *low elaboration*, an image is merely a holistic impression of the relative position of an object among its perceived competitors. Measurement must then focus on differences and similarities between image objects, using multi-dimensional scaling.

This classification offers a fruitful basis for comparing image research instruments. Within each particular image definition, researchers have several methods at their disposal to measure image. A relevant research question is whether or not competing research methods are equally suitable for measuring image and whether they produce similar results. So far, only few researchers respond to this challenge (Van Riel, Stroeker, & Maathuis, 1998).

This article focuses on the measurement of image in the case of medium elaboration. Image is supposed to be the equivalent of an attitude: image is an overall evaluation that is a consequence of a series of beliefs and importance weightings. Two competing methods that are potentially useful in this context are Likert attitude questionnaires and the Q-sort method. Both methods can be used to measure attitudes and both present the respondents with a predetermined set of items (beliefs), which must be judged on an *x*-point scale, so that respondents must make trade-offs between scale positions.

Our study investigates the suitability of the two methods for product image research. First, the rationale of the two methods is discussed. After that, the possibilities of the methods are analyzed

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in an empirical study into the image of beef. Finally, the article addresses the strengths and weaknesses of both methods for image research.

2. The Q-sort method

The Q-sort method is rooted in Q-methodology, an inverted technique of factor analysis. Developed by Stephenson (1953) as an alternative measurement technique to existing scales and tests in psychology, the method can be used in any situation in which subjectivity is at issue, including attitude measurement (Stephenson, 1965, 1968). Mainly due to the work of Brown (1980) and McKeown and Thomas (1988), who further developed the principles and procedures of Q-sorting, the Q-sort method has more recently found its way to a wide variety of research areas.

Today, Q-methodology has become a popular method of investigating attitudes (Cross, 2005). Particularly within medical and nursing research, the Q-sort method is often used to measure patients' or professionals' attitudes toward health-related issues, such as chronic pain (Risdon, Eccleston, Crombez, & McCracken, 2003), the adoption of information technology (Valenta & Wigger, 1997), and patients' needs and concerns (Staley-Gane, Flynn, Neitzel, Cronister, & Hagerman, 1996). The method has also become quite common as a research approach for public opinion (Webler, Tuler, & Krueger, 2001), communication (Carlson & Trichtinger, 2001), policy analysis (Durning, 1999), landscape planning and rural research (Swaffield & Fairweather, 1996; Previte, Pini, & Haslam-McKenzie, 2007), environmental issues (Barry & Proops, 1999), and education (Lecouteur & Delfabbro, 2001).

Surprisingly, the academic business and marketing literature has so far paid little attention to the Q-sort method. The potential value of the Q-sort method in public relation, advertising, and image research was already demonstrated by Stephenson (1963, 1969, 1979) and confirmed by Schlinger (1969) and current marketing handbooks suggest Q-sorting as a suitable technique for corporate image research (e.g., Smith & Albaum, 2004). However, its use in academic image studies is limited to a small number of studies into the relationship between self-image and brand or product image (e.g., Hamm & Cundiff, 1969; Martin & Reynolds, 1976; Sommers, 1963). Despite the promising results of these studies, the method has been rarely used in this context since then.

2.1. Design

The Q-sort method typically involves the rank-ordering of a set of statements in a near-normal distribution, ranging from agree to disagree (see Fig. 1). Through the years, however, researchers apply the method in a much broader sense. Any set of items that can be meaningfully evaluated may be used (Schlinger, 1969). Respondents may, for example, be asked to sort photographs (Fairweather & Swaffield, 2002), product names (Fyock et al., 2001) or colored papers (Gelineau, 1981). The corresponding distribution scales may range from like to dislike, from best label to worst label, or between opposite mood adjectives.

The Q-sort method is a forced-choice research approach: all items must be ranked and each position can only be used once. An important difference between the Q-sort method and more conventional attitude research approaches involves the data analysis: the data matrix is inverted, so that the respondents are the variables and the items are the cases. Respondents are correlated, instead of items.

When designing a Q-sort study, researchers must decide on the number of items and the shape of the (forced) distribution. The number of items corresponds with the complexity of the research topic (Amin, 2000). All possible aspects of the research topic must

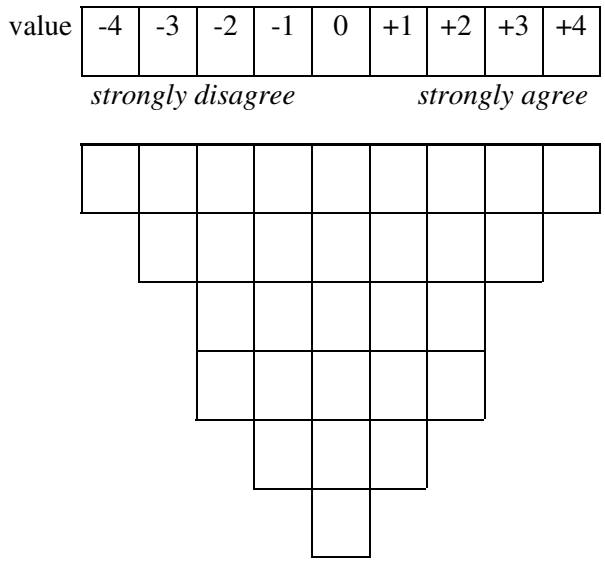

Fig. 1. Q-sort distribution.

be represented. In practice, samples of 60 items or more are seldom necessary (Dennis, 1988). Although considerable research has examined the properties of different distribution shapes (e.g., Brown, 1971), no specific guidelines in this respect are available. Both the range and the distribution shape are usually arbitrarily designed to accommodate the number of items used in the study (Addams, 2000). Q-samples typically consist of 20–50 statements, which must be ranked using 7–11 piles (Mrtek, Tafesse, & Wigger, 1996). The number of items per pile varies, but usually assumes a near-normal distribution, with one or two items in the extremes, gradually increasing to four to nine items in the middle pile(s).

2.2. Procedure

The Q-sort procedure consists of four steps. The first step is the collection of relevant ideas, beliefs and opinions concerning the research object. Such a collection is referred to as the *concourse*, and can be based on various sources, such as interviews, content analysis or previous research. The second step involves the selection and formulation of a set of meaningful statements, which results in the *Q-sample*. If the items are statements about a product or brand, the final selection ideally consists of an equal number of positive and negative statements (Schlinger, 1969). Up to here, the procedure resembles the development of attitude questionnaire items (Stainton Rogers, 1995). The resulting statements are randomly numbered and printed on separate cards. In the third step, respondents have to express their views on the research topic by placing all cards in the pre-structured Q-sort distribution. A completed sorting task is called a *Q-sort*.

The fourth step is the *data analysis*. A correlation matrix is made of all Q-sorts, indicating the degree of correspondence between respondents. The correlation matrix is submitted to a by-person factor analysis to explore attitudinal groupings. Factor scores are computed for each of the items in the resulting clusters of respondents, which leads to one representative Q-sort per group. Also, confounding respondents (loading significantly on more than one factor) and non-significant respondents (not loading on any of the factors) are identified. The final task is to interpret and explain similarities and differences among the factors. Two established computer software packages are available that standardize and automate data analysis and thus enhance the method's feasibility