Assessing the validity of brand equity constructs

Con Menictas *, Paul Z. Wang, Jordan J. Louviere

Marketing Discipline Group, University of Technology, Sydney, Australia
Centre for the Study of Choice (CenSoC), University of Technology, Sydney, Australia

ARTICLE INFO

ABSTRACT

This paper tests both the internal and external validity of the Erdem and Swait (1998) brand equity framework using two measurement modelling approaches, namely the relatively new Best-Worst scaling (BWS) method (Finn and Louviere, 1992; Marley and Louviere, 2005) and the more traditional confirmatory factor analysis (CFA) method. Data were collected from the Australian banking and mobile services sectors. We find the measurement models derived from BWS outperformed the models based on CFA of the rating data in predicting both stated and real brand choices. The findings have implications for both academics and practitioners in brand equity measurement and management.

© 2011 Australian and New Zealand Marketing Academy. Published by Elsevier Ltd. All rights reserved.

1. Introduction

A review of brand equity literature indicates that there are three fundamental frameworks for understanding and measuring brand equity. They include (1) Aaker's (1991) framework, which is a managerial view of brand equity; (2) Keller's (1993) psychological, memory-based view of brand equity; and (3) Erdem and Swait's (1998) brand equity framework based on information economics and signalling theory. There are other brand equity frameworks that are built upon the above three frameworks. For example, Yoo et al. (2000) extended Aaker's (1991) framework by specifying the dimensions of brand equity and also the antecedents of brand equity. Krishnan (1996) used Keller's (1993) memory-based view of brand equity to identify various associations underlying consumer based brand equity. Netemeyer et al. (2004) enriched Keller's (1993) view of brand equity by developing and validating measures of the facets of customer based brand equity (CBBE). Park and Shrinivasan (1994) integrated both Aaker's and Keller's concepts of brand equity and developed a survey based method for measuring and understanding brand equity.

In this paper we adopt the Erdem and Swait (1998) brand equity framework for the following three main reasons. First, the framework is based on a formal theory about consumer decision processes that provides a comprehensive and dynamic view of brand equity, which explains how various brand equity constructs are interrelated to create brand utility and then brand choice. Second, the framework has been repeatedly tested empirically (e.g., Erdem et al., 2006; Wang et al., 2007). Third, the framework can

be integrated with random utility theory (McFadden, 1974; Thurstone, 1927) to develop a practical way to model and measure brand equity.

In order to assess the validity of the Erdem and Swait (1998) brand equity constructs, we need an analysis procedure that takes into account measurement errors. It is well known that any observed variable contains measurement error which will bias parameter estimates (Bollen, 1989; Nunally and Bernstein, 1994). To examine the extent of measurement error, it is necessary that each construct be measured with multiple indicators (Churchill, 1979; Peter, 1979). Confirmatory factor analysis (CFA) makes it possible to identify errors and investigate how well the multiple indicators capture the construct of interest (Fornell and Larcker, 1981; Gerbing and Anderson, 1988).

CFA has been historically associated with the assessment of dimensionality, reliability and internal validity of measurement models (e.g. Akaike, 1987; Gerbing and Anderson, 1988; Hayduk, 1987; Jöreskog, 1971; Jöreskog and Sörbom, 1982). Typically CFA is conducted after exploratory factor analysis (EFA) and reliability analysis via Cronbach's (1951) coefficient alpha to ensure that the measurement items are internally consistent (Peter, 1979). The main purpose of CFA is to assess the psychometric properties of a multi-item measurement scale (Gerbing and Anderson, 1988; Nunally and Bernstein, 1994). However, measurement models formulated via this approach may not predict both stated and real brand choices in real markets (Louviere et al., 2000). It is important to evaluate both the internal and external validity of any proposed brand equity framework before it can be generally accepted. Surprisingly, very little empirical research has been conducted to assess the predictive validities of various brand equity frameworks.

Louviere and his associates (Finn and Louviere, 1992; Marley and Louviere, 2005) have developed a different measurement item

---

* Corresponding author. Address: Newcastle Business School, Faculty of Business and Law, The University of Newcastle, Australia. Tel.: +61 425 339 790.
E-mail address: con.menictas@newcastle.edu.au (C. Menictas).

selection approach to CFA, known as Best-Worst scaling (BWS), also known as Maximum difference (Max-Diff) scaling (Almquist and Lee, 2009). It uses experimental designs to manipulate the presence or absence of items in a choice task. As such, we use BWS to select measurement items to represent various constructs in the Erdem and Swait (1998) brand equity framework. We then compare this new BWS approach to that of traditional CFA, for predicting both stated and real brand choices in real markets. To the best of our knowledge, this form of comparison has yet to be conducted. We believe this comparison deserves empirical investigation, as it has the potential to advance our knowledge in the brand equity scale development literature.

The remainder of this paper is organized as follows: we first introduce the Erdem and Swait (1998) brand equity framework. Second, we describe the two research methods used in this study, namely the CFA and BWS approaches. We also report the data collection process and the testing method for internal and external validity. Third, we present the conditional logit model results to examine the internal and external validity of our two methods. Finally, we discuss this study's implications and directions for further research.

2. The Erdem and Swait (1998) brand equity framework

Drawing upon Spence's (1974) signalling and information economics theory, Erdem and Swait (1998) developed a brand equity framework for markets characterized by imperfect and asymmetric information (Stigler, 1961). When a firm knows more about its product(s) than its customers, an information asymmetry will occur (Erdem and Swait, 1998). This causes a lack of complete information on the part of its customers regarding the product offerings, a phenomenon known as imperfect information (Nelson, 1970).

The Erdem and Swait (1998) brand equity framework consists of seven constructs, namely, (i) Brand investments; (ii) Consistency; (iii) Clarity; (iv) Credibility; (v) Perceived quality; (vi) Perceived risk; and (vii) Information costs saved, leading to the latent dependent variable of expected utility, as depicted in Fig. 1.

According to the Erdem and Swait (1998) brand equity framework, the clarity and credibility of brands as signals of product positions increase perceived quality, decrease consumer perceived risk and information costs, and hence increase consumer expected utility. Fig. 1 suggests that imperfect and asymmetric information leads to uncertainty, which in turn influences customers' perceptions of brand attributes. Uncertainty about product quality also suggests that customer beliefs may vary from person to person

on the aspect of quality. This creates perceived risk on the part of the customer, which is something customers try to avoid. Risk-averse customers are not comfortable with ambiguous and uncertain product quality assessments. When quality is uncertain, customers are likely to search for more information. Erdem and Swait (1998) argue that customers use brands as a signal for quality. Brand credibility is hypothesized to be the key antecedent or mediator to brand quality, brand perceived risks and brand information costs.

The Erdem and Swait (1998) signalling perspective on brand equity explicitly considers imperfect and asymmetric information in real markets, unlike Keller's (1993) cognitive psychological view of brand equity. Firms can use brands as signals to inform customers about product positions when its customers are uncertain about product attributes.

The Erdem and Swait (1998) brand equity framework has been successfully applied to a number of research settings, including the study of the impact of brand credibility on consumer price sensitivity (Erdem et al., 2002) and the role of brand credibility on brand consideration, consumer learning and choice (Erdem et al., 1999; Erdem and Swait, 2004). Kim et al. (2008) assessed antecedents of brand loyalty including brand credibility. Brodie et al. (2002) drew upon the Erdem and Swait (1998) framework to develop a theory of marketplace equity. Washburn et al. (2004) examined how customer-based brand equity of partner brands affects consumer evaluations of the search, experience, and credence attribute performance of the alliance brand. Wang et al. (2007) investigated the external validity of the Erdem and Swait (1998) framework using both structural equation modelling and discrete choice modelling approaches.

The original Erdem and Swait (1998) brand equity framework's structural model shown in Fig. 1 contains a clarity construct. The clarity construct is excluded from Erdem and Swait's later work (e.g., see Erdem and Swait, 2002, 2004; Erdem et al., 2002, 2006). We followed the Erdem and Swait precedent of excluding the clarity construct for two main reasons. First, the clarity construct is the least important variable amongst the antecedents of brand investments and consistency to the credibility construct. Second, this study was part of a larger study and involved lengthy discrete choice experiments and therefore for practical reasons of reducing respondent cognitive burden, we decided to exclude the less important clarity construct.

3. Two methods for selecting construct items

Traditionally, the method used for the selection of items to measure a latent variable or construct has been confirmatory factor analysis (CFA). In this paper we introduce a new alternative method for the selection of construct items known as Best-Worst scaling (BWS).

3.1. Confirmatory factor analysis (CFA): the traditional approach

The traditional approach for selecting construct items started with exploratory factor analysis (EFA) and reliability analysis, to purify multi-item rating scales (Churchill, 1979; Cronbach, 1951; Peter, 1979). This is then followed by confirmatory factor analysis (CFA) to further assess the psychometric properties of the multi-item measurement scale (Gerbing and Anderson, 1988; Nunally and Bernstein, 1994).

3.2. Best-Worst scaling (BWS): an alternative approach

Typically, a BWS task asks respondents to choose the *best* and the *worst* option from a set of alternatives. The measurement item
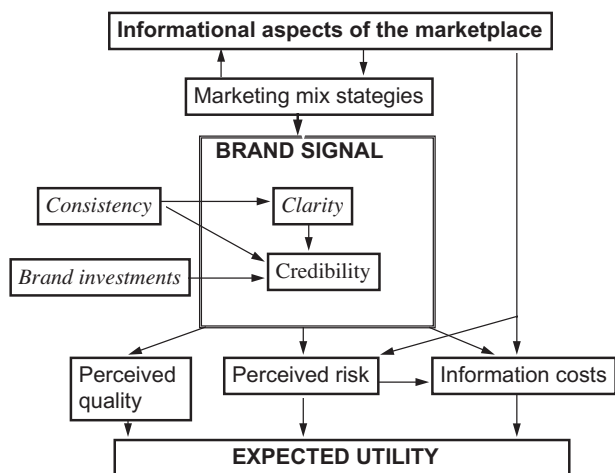

Fig. 1. The conceptual model of the Erdem and Swait (1998) brand equity framework.