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Combining means-end chain analysis and the Portrait Value Questionnaire to research the influence of personal values on food choice

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ABSTRACT

Personal values can be measured using quantitative or qualitative methods. This paper aims to investigate the attribute-consequence-value patterns collected from means-end chain analysis and to examine their relationship to personal value domains from Schwartz value theory measured through the use of the Portrait Value Questionnaire. The study was performed on two product categories, potato chips and orange juice, in which two value segments of opposing value domains were found, Conservatism and Openness to change clusters. There was consistency between means-end chain analysis results and the expected traits of the value domains. The Conservatism cluster embracing security, tradition, and conformity values sought financial security through saving money by paying more attention to price and selected familiar brands in order to avoid risks of spending extra money. The Openness to change cluster, which embraced hedonism and stimulation values, emphasized attaining pleasure and enjoyment in life through various consequences that branched out from a number of sensory product attributes. This study illustrates the compatibility between the two instruments. The use of means-end chain analysis confirmed Schwartz's definition of values as guiding behavior, and that values are ordered by relative importance.

1. Introduction

Values are guiding principles of life, which are more stable over time than attitudes (Rokeach, 1973; Schwartz, 1992). Values are connected to people's cognitive structures and can influence one's perception, evaluation, and attitudes towards objects, persons, or situations. It is assumed that values are universal and are recognized by different cultures around the world (Schwartz, 1992). Schwartz and Bilsky (1987) presented a conceptual definition of values as concepts or beliefs, that pertain to desirable motivational goals or behaviors that people strive to attain. Values transcend specific situations, guide selection or evaluation of behavior and events, and are ordered by relative importance. Personal values have been used in consumer segmentation and food-related research to study the influence of collective motivational goals on consumer behavior, consumption, and purchase intentions (Boecker, Hartl, & Nocella, 2008; Brunsø, Scholderer, & Grunert, 2004; de Boer, Hoogland, & Boersema, 2007; Dreezens, Martijn, Tenbült, Kok, & de Vries, 2005; Fotopoulos, Krystallis, & Ness, 2003), to name a few.

The Schwartz Value Survey (SVS) is one of the most well-known and intricate quantitative measures of human values. A list of 56 values representing ten value domains was developed and validated across different cultures. The characteristics of each value domain are illustrated in Table 1. These ten value domains are meant to encompass the core values recognized by all cultures. The list of values in the Schwartz Value Survey represents items that express an aspect of the motivational goal of the ten value domains. For instance, the item "exciting life" represents a stimulation value and the item "protecting the environment" represents a universalism value. Despite its recognition as a measure of personal values, items in the Schwartz Value Survey may appear to be more abstract. The Portrait Value Questionnaire was developed as an alternative to measure value priorities (Schwartz et al., 2001). The questionnaire is comprised of 40 verbal portraits or short verbal descriptions of a person's goals that relate to the values, which are more concrete and easier to understand than the Schwartz Value Survey. The verbal portraits describe each person in terms of what is important to him or her (Schwartz et al., 2001). For example, "She really wants to enjoy life. Having a good time is very important to her." represents the hedonism value and "She strongly believes that people should care for nature. Looking after

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Table 1
Characteristics of ten Schwartz's value domains.

Value domain	Value characteristics
Universalism	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent contact
Tradition	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony and stability of society, of relationships, and of self
Power	Social status and prestige, control or dominance over people and resources
Achievement	Personal success through demonstrating competence according to social standards
Hedonism	Pleasure and sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action-choosing, creating, exploring

the environment is important to her." represents the universalism value. These quantitative instruments could draw out people's knowledge about self and their food-related decisions when used in the study of food choice.

The connections between food choice and personal values can also be explored using qualitative techniques, such as means-end chain analysis. Means-end chain is a theory proposed by Gutman (1982) that seeks to understand the motives behind consumers' selection of products. The 'means' are product attributes while 'ends' refer to desirable motivational goals or personal values such as security, achievement, and pleasure. The theory postulates that consumers choose a product with attributes that can provide particular beneficial consequences that will satisfy personal values they associate with such benefits. Walker and Olson (1991) suggested that the lower level of the means-end hierarchy contains concrete and abstract product attributes and their functional consequences, representing the product-knowledge, while the higher levels are the psychological consequences and the values the consequences reinforce, representing self-knowledge. Laddering is a one-on-one interviewing technique that was developed to facilitate means-end chain analysis in order to understand how consumers translate product attributes into meaningful associations that are relevant to self (Reynolds & Guttman, 1988). With an aim of determining the linkages among attributes, consequences, and values, the interviewing process involves a series of "Why is it important to you?" questions. There are two types of laddering technique, soft and hard laddering. Soft laddering refers to a semi-structured interviewing technique that allows the natural flow of conversation without much restriction. In contrast, hard laddering requires respondents to produce ladders by utilizing *a priori* list of attributes-consequences-values in such a way that the answers reveal an increasing level of abstraction (Grunert & Grunert, 1995). Means-end chain has been used to understand the consumption and purchase motives for functional foods (Krystallis, Maglaras, & Mamalis, 2008); locally produced and imported extra virgin olive oil (Santosa & Guinard, 2011); vegetable-based food for children (Søndergaard & Edelenbos, 2007); French fair trade coffer purchases (de Ferran & Grunert, 2007); the differences between organic food buyers and non-buyers with respect to wines produced from organically grown grapes in Greece (Fotopoulos et al., 2003); cross-cultural preferences and purchase motives for vegetable oils in Denmark, England and France (Nielsen, Bech-Larsen, & Grunert, 1998); understanding beef consumers with regards to frequency of consumption (Barrena & Sánchez, 2009); meat choice (Le Page, Cox, Georgie Russell, & Leppard, 2005); consumer perceptions of foods involving genetic modification (Grunert et al., 2001); and consumer perception of technologies such as high pressure processing on chilled ready meals (Sorenson & Henchion, 2011), to name a few.

Value priority would influence the motivations behind food choices and how people make connections between product attributes (*A*), their consequences (*C*), and personal values (*V*). For instance, consumers with hedonism values would tend to direct their *A–C–V* linkages such that consequences that relate to pleasure and enjoyment of life would be more apparent than in consumers with other value domains. The aim of this study was two-fold. The first objective was to investigate the associations between product attributes, consequences, and personal values that drive the consumption and purchase of potato chips and orange juice. The second objective was to determine the consistency of the results from means-end chain analysis and the proposed characteristics of value priorities obtained from the Portrait Value Questionnaire. This study also enabled the observation of similarity and differences in the cognitive processes involved in food choice decision-making of consumers embracing distinct value priorities.

2. Materials and methods

2.1. Participants

Participants were selected based on the recruitment criteria of US citizenship and/or residency, product consumption, age 18–65 years, and involvement in decision making for grocery shopping. There were 40 participants in each study. Generally, the minimum sample size for means-end chain analysis is suggested to be 20 participants in order to obtain significant information about consumer choice (Reynolds & Guttman, 1988). The number of male and female participants was evenly distributed, and so was age, which was divided into two main groups, 30 years or younger and older than 30 years. Consumers were recruited from the Davis and Sacramento areas in Northern California.

2.2. Procedure

Participants were invited to the RMI Sensory Building, University of California Davis, for an individual interview session. The soft laddering technique was employed for the means-end chain method. The process began by informing the consumers about the objective of the experiment, followed by a brief explanation of the interview process. Subsequently, the interviewer proceeded by asking the consumers (in the case of orange juice) '*what kind of orange juice do you buy and why do you buy that/those?*' or '*what are the factors that influence your choice of orange juice?*' For all the reasons mentioned, consumers were asked to rank the factors in order of importance and to answer the question '*why is this flavor important to you?*' (if flavor was the most important factor to them). This led to a reason or consequence (e.g. enjoying the taste). Then, consumers were asked why that particular consequence was important to them: '*why is enjoying the taste important to you?*' Following that, consumers were asked a series of 'why' questions from