

Front of Package Nutritional Icons and their Influence on Adolescent Consumers' Attitude towards and Purchase Intentions of Packaged Food

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Abstract

Consumers of packaged foods in Australia and worldwide are faced with an array of Front of Package (FOP) nutritional icons that attempt to influence consumers' decision making at the point of sale. As obesity becomes an increasingly important health issue for the nation, steps must be taken to reduce the ambiguity of nutritional information so that consumers can make more informed decisions. Following a recent US study by Andrews, Burton and Kees (2010), this paper explores the role that FOP nutritional icons play as signals in the formation of attitudes and purchase intentions in adolescent consumers. In addition, the role of subjective knowledge and motivation will also be explored.

Introduction

Obesity and consequential health issues are important matters not only in Australia but across the globe (Brown and Siahpush, 2007). The prevalence of obesity in adolescents is particularly disturbing. In a world where consumers are increasingly time poor, and food consumed outside the home is at all time high (Rexha, Mizerski, and Mizerski, 2010), there is a need for nutritional information to be easier to understand so that consumers are capable of making informed choices with regard to food purchases.

Front of Package (FOP) nutritional icons are intended to aid consumers in their decision making by reducing the ambiguity of identifying healthier foods (Sebolt, 2008). Many forms of FOP nutritional icons and symbols are currently in use in the Australian marketplace. These include The Heart Foundation 'Tick', traffic light symbols showing percentages of nutrients based on recommended daily amounts and claims such as "Low fat" or "Reduced fat". In the USA, the introduction of the 'Smart Choices' icon caused great controversy given it was deemed Froot Loops cereal met the criteria to be awarded this icon (Ruiz, 2009). The sugar content in Froot Loops accounts for 40 percent of the products weight. This is just one example of how consumers may be confused or mislead about the healthfulness of a product that utilises a FOP nutritional icon.

Given that nutritional information may be difficult for many to interpret and use in consumption of food, the development and use of FOP nutritional icons has enormous potential for consumers. If FOP nutritional icons can aid better nutritional choices by reducing the ambiguity of identifying the healthfulness of certain products, this can be seen as a positive step in countering obesity. This research is a replicate of a recent US study by Andrews, Burton, and Kees (2010) in an Australian setting, using an adolescent sample.

This paper is structured as follows. A summary of literature on how labelling influences consumers', particularly the elaboration likelihood model and signal theory is given while highlighting gaps that require future research. From the gaps identified, a conceptual model is proposed; propositions are developed and the paper will conclude with implications and anticipated contributions.

Literature Review

Two theories developed in the marketing literature can be used to explain how nutritional icons used on packaging may influence consumer decisions. The Elaboration Likelihood Model (ELM) and Signal Theory both conceptualise ways in which consumers are informed and persuaded by marketing messages. Each of these theories will be discussed briefly in relation to FOP nutritional icons.

The Elaboration Likelihood Model

Developed by Cacioppo and Petty (1984), the ELM was an extension on the theory of message involvement in the role of persuasion and attitude formation. ELM provides a “framework for understanding attitude formation and change with regard to products and services” (Bitner and Obermiller, 1985, p. 420). Motivation and ability are the two factors determining how a consumer will attend to and consider a message (Cacioppo and Petty, 1984).

Two routes of information processing are proposed in ELM including the central and the peripheral route. It is through either of these routes that persuasion will occur (Bitner and Obermiller, 1985). Elaboration likelihood is high if conditions promote increased motivation to attend to a message and ability to develop relevant thoughts are present (Petty and Cacioppo, 1984). A high level of elaboration indicates that consumers will critically analyse the message and subsequently develop an attitude regarding the stimulus (Cacioppo and Petty, 1984). Attitudes formed through this route are considered to be enduring and strong (Rucker and Petty, 2006). In conditions in which elaboration likelihood is low, the peripheral route of processing is utilised and proper consideration is absent from thought processes. The resulting attitudes are formed by cues derived from the stimulus (Bitner and Obermiller, 1985). Despite the use of cues rather than carefully constructed thought processes in attending to the message, attitudes formed through the peripheral route are still predictive of resulting behaviour in the short term (Rucker and Petty, 2006).

A recurring methodological approach to testing the validity of the ELM involves an experimental design that manipulates conditions fostering motivation and ability to process the messages presented and the dependent variables measured in ELM research typically include attitude toward the message and subsequent purchase intentions (Cole *et al.*, 1990; Petty and Cacioppo, 1984; Te'eni-Harari, Lampert, and Lehman-Wilzig, 2007). Using various forms of FOP nutritional icons may in fact foster varying levels of motivation and ability which will be a key finding as it could provide ways in which FOP nutritional icons can be used most effectively for adolescent consumers in snack food purchases.

The ELM assumes that there are two routes in which information is processed by consumers. Although studies such as Cole *et al.* (1990) have not disputed this assumption, there has been conjecture on whether extrinsic cues will be processed centrally or peripherally. Findings from Cole *et al.* (1990) demonstrate that when messages with limited cues for central processing are available, a peripheral cue may take its place. Consequently there is disagreement as to how a cue is classified using the ELM. Given that FOP nutritional icons may be considered as either cues or as information to be interpreted cognitively, testing how

various forms of FOP nutritional icons are interpreted will be a useful contribution to the ELM's use in literature thus far.

Signal Theory

Signal theory is originally derived from economic literature that proposes consumers use tools such as warranties to assess product quality (Priest, 1981). Signals and cues aid in attitude formation when the peripheral route of information processing is utilised, as stipulated by the ELM (Bitner and Obermiller, 1985). The majority of purchase decisions of simple consumer retail products (such as snack foods) are made at the point of purchase, thus extrinsic cues or signals play a fundamental role in consumer decision making (East, Eftchiadou, and Williamson, 2003).

Consumers are often faced with tradeoffs when products in a category which appear to be homogeneous (Erevelles, Roy, and Yip, 2001). This uncertainty about a purchase decision increases the perceived risk involved in a purchase (Shimp and Bearden, 1982). In order to reduce risk, consumers use cues and signals in determining product quality and subsequently make purchase decisions (Shimp and Bearden, 1982).

Packaging can enhance a brand and reinforce marketing communications of a product, thus creating value to the consumer and enhancing purchase intentions (Kees *et al.*, 2006). Labels on packaging serve many purposes such as educating consumers, attempting to influence attitude formation, purchase intent and resulting behaviour (Kees *et al.*, 2006). Although perception of quality will also be influenced by factors such as price, previous experiences and personal health values, visual aspects of packaging are significant influences on initial perceptions of product quality (Imram 1999). This initial observation may induce a halo effect resulting in attitude formation for those consumers under low involvement, as specified by the ELM (Imram 1999).

As stipulated by the ELM, consumers utilise various levels of cognitive engagement in purchase situations depending on issues such as level of involvement or ability (Bava, Jaeger, and Dawson, 2009). Hence, cues or signals will be attended to and used differently by every consumer. Impulse purchases, such as snack foods have been found to be heavily influenced by simple cues (Bava *et al.*, 2009). FOP nutritional icons can be considered a signal of product quality and healthfulness, thus research into this aspect of packaging will be an important contribution to current literature.

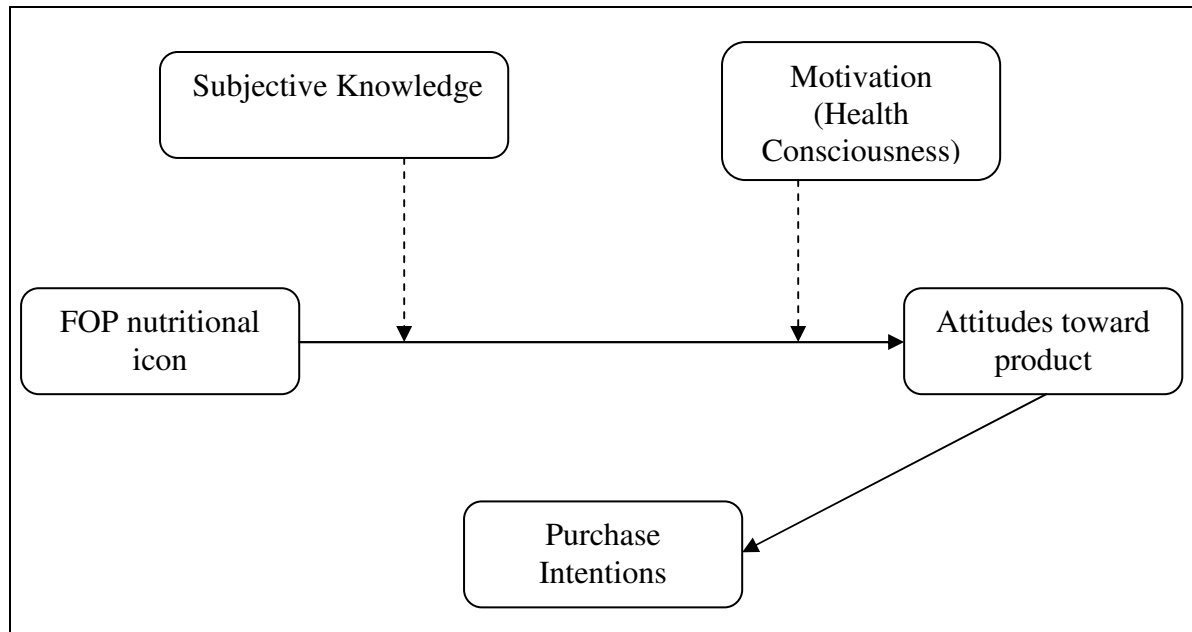
Conceptual Model

The use of FOP nutritional icons by an adolescent sample is an important area of research given the increases in obesity rates of this demographic in Australia. We believe this research will lead to a greater understanding of how FOP nutritional icons impact adolescent consumers' attitudes toward a product and subsequent purchase intentions.

Upon reviewing relevant literature, the following conceptual model seen in Figure 1 was developed. This model shows the effect of Front of Package (FOP) nutritional icons as a signal of healthfulness on resulting attitude formation toward a product and resulting purchase intentions. Subjective Knowledge of nutrition and motivation to process nutritional information are two potential moderating variables in the relationship between FOP

nutritional icons and attitudes which is consistent with the Elaboration Likelihood Model (ELM), which considers motivation and ability as the two factors affecting elaboration.

Figure 1: Conceptual Model



Upon development of the conceptual model, the following hypotheses were derived:

H1: The presence of a FOP nutritional icon will affect perceptions of overall healthfulness of the product. Signals which reduce uncertainty in decision situations have been found to produce favourable effects with regard to food in previous research (Erevelles *et al.*, 2001; Kelley, 1988). The effect of various icons (simple versus more complex) will be an important contribution to literature in determining how each form affects perceptions of healthfulness.

H2: The presence of FOP nutritional icons will affect attitudes toward the product and subsequent purchase intentions. We predict that perceptions of healthfulness will extend to attitudes toward the product and purchase intentions in line with past research (Burton *et al.*, 2006; Kozup, Creyer, and Burton, 2003). Further, we predict that simpler icons will produce more favourable attitudes and purchase intentions.

H3: Consumers who are more health conscious will be more accurate in assessing product healthfulness. Consumers who are more nutrition conscious are more likely to produce greater cognitions and have greater knowledge when processing nutritional information for a product (Kemp *et al.*, 2007). Thus we predict that this greater knowledge will correlate to more accurate evaluations of assessing healthfulness.

H4: Attitudes of consumers with greater subjective knowledge of nutrition will be less influenced by FOP nutritional icons than those with lower nutritional knowledge.

Previous research by Keller *et al.* (1997) suggests that consumers are often sceptical towards nutritional claims on packaging. While consumers of all education levels can generally use a nutritional facts panel in assessing true healthfulness of a product (Ford *et al.*, 1996; Mitra *et al.*, 1999), we predict that consumers with lower nutritional knowledge will be less motivated

to assess the nutritional facts panel than those with higher knowledge. Thus, those with lower knowledge will rely on and be more influenced by a FOP nutritional icon.

Research Methodology and Preliminary Findings

The research will be comprised of two stages. In stage one, exploratory focus groups were conducted to determine an appropriate stimulus to be manipulated in stage two of the research and to establish the attitudes of the sample towards nutrition and nutritional information on food. Three focus groups were conducted, comprising of a sample of year 10, 11 and 12 students at one high school in South Australia. The information elicited from stage one was used to design the experiment for stage two of the research.

Stage two will employ a three cell experimental design. Using a fictionally branded muesli bar (to control brand familiarity), one cell will act as a control using no form of nutritional icon while the remaining two cells will employ a heart foundation tick and a traffic light summary icon of nutritional information respectively. The experiment will be conducted online using a sample of three high schools in South Australia.

Preliminary Findings from Stage One. The findings from the focus groups indicated that respondents found foods utilising the heart foundation tick as more trustworthy, better for your heart and more credible given it has been tested independently and generally felt better about buying foods with this icon visible. The traffic light system of nutrition was widely acknowledged as a positive symbol which would reduce the ambiguity of nutritional facts panels and greatly reduce search time when comparing the nutritional information between products.

It was evident from the three focus groups that respondents perceived their own nutritional knowledge to be fairly low. This low level of subjective knowledge may lead to the use of a more simplified piece of information such as the heart foundation tick to avoid confrontation of having to assess information. Despite the perceived lack of knowledge, respondents did indicate they would like to know more about nutrition as it was an important part of living a healthy life as well as promoting aesthetic benefits with regard to personal appearance.

Implications and Anticipated Contributions

An important contribution this research endeavours to make to academic literature is the use of an adolescent sample which extends the original study to a more specific demographic. Given that obesity rates in youths are rising (O'Dea, 2008), we see this segment as an important starting point in minimising obesity. Determining how adolescent consumers can be influenced by FOP nutritional icons is an important step in understanding how to communicate nutritional information to this segment more effectively.

Aside from the importance this type of research may hold for the good of public health, manufacturers may also benefit from stricter regulations on FOP nutritional icons. If competitors in a product range were all forced to use a regulated form of FOP icons, this could create opportunities for manufacturers to differentiate by altering the healthfulness of their product attributes and thus creating healthier alternatives for consumers. In addition manufacturers may be able to boost the credibility of their products by providing nutritional

attributes which are positive and negative, consistent with effects of two sided advertising (Kamins and Assael, 1987). Each of these scenarios could have positive effects for manufacturers in that they may be perceived to have higher credibility and a greater sense of social responsibility in countering obesity.

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