A Cross Cultural Examination Of Consumer Behaviour & GM Food Products: Results From Australian And South Korean Female Consumers.

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Abstract

The call for the cross cultural examination and validation of commonly accepted relationships within consumer behaviour is strengthening. Consequently, this paper seeks to address this call by examining consumer risk perceptions, reliance on country of origin information and willingness to buy Genetically Modified (GM) food products on Australian and South Korean consumers. Findings indicate a number of cross cultural similarities and differences that have both theoretical and practical implications.

Introduction

While knowledge of consumer behaviour is continually advancing, much of its foundation has been derived from North America. Given this, researchers are increasingly calling for the examination of consumer behaviour concepts and theories from a cross-cultural perspective, in order to determine if our knowledge is externally valid or, rather "culture bound" (Alden, Hoyer and Wechasara, 1989; Doran, 2002; Patterson and Smith, 2004). As such, this study seeks to address this call by examining the relationship between consumer risk perceptions, reliance on country of origin and willingness to buy, in South Korea and Australia.

Within a wide variety of consumer behaviour areas and contexts, one variable that appears prominently is consumer risk perception. Defined as "*a consumer's subjective feeling that there is some probability that a choice may lead to an undesirable outcome*" (Cunningham, 1967, p37), consumer risk perception has been the subject of considerable attention by consumer researchers, and yet in terms of its cross-cultural validity much remains unknown. Given the lack of research in this area, it is clear that theoretical contributions may be made by examination of consumer risk perceptions from a cross cultural perspective (Mitchell, 1994, 1999), and of the small stream of research that has examined the impact of culture on risk perceptions, culture has been found to be valuable in explaining some differences in consumer risk perceptions. For example, in a study on meat products, Pennings, Wansink and Meulenberg (2002), found significant differences in consumer risk perceptions between consumers from The Netherlands, Germany and America, during the BSE (mad cow disease) crisis. Such findings substantiate earlier work by Verhage, Yavas and Green (1990) and Hoover, Green and Saegert, (1978) who also found cultural differences in food-related risk perceptions. Overall, such results collectively imply that culture may explain risk perception disparities, in that people from different countries have a propensity to either accept or reject uncertainty, which is itself, an element of risk. For the past two decades, the work of Hofstede (1980) has often been cited when broadly categorising cultural differences between nations. On this point, South Korea is commonly understood as a culture that is risk-adverse (Hofstede, 1980) and as such, it seems likely that Korean consumers may see high risk associated with GM food products. Thus;

H1: Risk Perceptions of GM food products will be significantly higher for South Korean women, than Australian women.

While it is important to examine consumer risk perceptions from a cross cultural perspective, it is equally important to examine related variables in a similar way, to determine if their roles are uniform across countries. Country of origin (COO) has long been the subject of considerable attention in the consumer research literature, to the extent that it has even been suggested as "*the fifth element of the marketing mix*" (Baker and Currie, 1993, p1). An extrinsic product cue, the country of origin effect is defined by Lampert and Jaffe (1998) as "*the impact [that] generalisations and perceptions about a country have on a person's evaluations of the country's products*" (p61). Importantly, some studies have found that country of origin is antecedent to consumer risk perceptions (Witt and Rao, 1992; Alden, 1993), in that different country-origins may signify higher or lower risk associated with the object. For instance, Witt and Rao (1992) found that American consumers see different levels of risk in products (microwave ovens and jeans) made in America, compared with those made in Taiwan and Mexico. Importantly, the study found when a particular country origin is perceived by consumers to be negative, that consumers infer higher risk in products made from that country, implying the country of origin cue is used by some consumers in their decision making to determine associated risk with the object.

Country of origin is viewed here as *reliance on country of origin information* and is seen as an individual difference variable that distinguishes between consumers who rely on country of origin information when choosing products and those consumers who do not. Consumers with this characteristic will in general use COO as a key decision-making criterion. They have a tendency to rely on such information to make product- category choices. Furthermore, it is suggested that consumers who rely on country of origin information, try to find out what country a product is from, and perceive product-origin to be important, will see risk in purchasing products, in general. In fact, it is argued that these consumers use country origins as a cue to determine the presence or absence of associated product-related risk. Consequently, in the context of food, it is argued such consumers are more likely to see higher risk in food, than consumers who do not rely on country of origin information. Thus,

> H2: Reliance on COO information will positively effect risk perceptions of GM food products in Australian and South Korean women.

While COO has been found to be an important information cue, evidence shows significant differences exist between consumers in distinctly different cultures. For instance, Japanese consumers have been found to favour domestic products over American products, regardless of product superiority, while American consumers have been found to evaluate domestic products more positively only when the product is superior to its Japanese alternative (Nagashima, 1970; Gurhan-Canli and Maheswaran, 2000). Furthermore, Hong and Yi (1992) found that South Koreans rely more heavily on country of origin information than their American counterparts. Overall, this signifies that culture explains, to an extent, country of origin differences between consumers in different countries. Therefore, as South Korea relies heavily on food imports, country of origin information is of greater importance to Korean consumers, than for Australian consumers, who produce much food consumed domestically. Thus,

> H3: South Korean women will rely on COO information more than Australian women.

Along with the theoretical network between risk and COO, risk perceptions are also relevant to consumers' willingness to buy specific products. Willingness to buy is an accepted consequence of risk perceptions, particularly in America, where students and consumers (eg: Klein, Ettenson and Morris, 1998; Shimp and Bearden, 1982) who have higher risk

perceptions have reduced purchase intentions (of the identified product). It seems likely that this relationship is not culture bound, but may rather reflect an acultural phenomenon, and consumer risk perceptions of GM food products may also reduce consumer willingness to buy such products. Thus,

H4: Risk perceptions of GM food products will negatively effect willingness to buy GM food products in Australian and South Korean women.

Given the above arguments in relation to differences in consumer risk perceptions and reliance on country of origin information based on culture, it is also argued here that the culture of a consumer will effect their willingness to buy. Specifically, one would expect that South Korean consumers are less willing to buy GM food products than Australian consumers, due primarily to the risk-adverse nature of the Korean culture when compared with Australia (Hofstede, 1980), in conjunction with South Korea's high reliance on food imports. Thus,

H5: South Korean women will be less willing to buy GM food products than Australian women.

Research Design

In order to tap the effect of cultural differences on consumer risk perceptions of GM food products, reliance on country of origin information and willingness to buy, a structured questionnaire was developed as part of a larger study. The Consumer Risk Perceptions of GM Food Products Scale was developed via two focus groups, one Australian and one Korean group. Utilising risk dimensions from Roselius (1971) and Jacoby and Kaplan (1972), the 15-item scale included items such as *My purchase of GM food products may be questioned by some people whose opinions I value*. The Reliance on Country of Origin Information Scale was also specifically developed for this study. The four-item scale included items such as *I try to find out what country a food product is from before I buy it*. The four-item Willingness to Buy GM Food Products Scale was adapted from Klein, Ettenson and Morris (1998) and included items such as *Whenever possible, I avoid buying GM food products*.

Due to the cross cultural nature of the research, two (calibration and translation) of three measurement equivalence issues were addressed during the design stage, as advocated by Malhotra, Agarwal and Peterson (1996). Achieving measurement equivalence involves examining issues such as calibration equivalence, translation and metric equivalence. Metric equivalence was examined in the preliminary analysis stage of the research. Calibration equivalence was addressed via all items being anchored by a 7-point Likert scale, familiar both to Australian (O'Cass, 2004) and Korean consumers (Lee and Green, 1991; Kim and Jin, 2002). Scale response wording of *Strongly Disagree* to *Strongly Agree* was adopted due to usage in similar food-related consumer studies (see: Subrahmanyan and Cheng, 2000; Bredahl, 2001), and is also a familiar format for Koreans (see: Hafstrom, Chae and Chung, 1992; Kim and Jin, 2001). To satisfy translation equivalence, the questionnaire was back-translated (Sin, Cheung and Lee, 1999; Gurhan-Canli and Maheswaran, 2000). Sample equivalence ensured that respondents were of the same type across the two countries (Bensaou, Coyne and Venkatraman, 1999) via a convenience sample administered by mall intercept in a large city in both countries. Non-probability procedures are often as efficient as probability sampling in cross-cultural research (Broderick and Mueller, 1999), with convenience sampling an accepted method to obtain cross-cultural sample equivalence (Sin, Cheung and Lee, 1999).

Results

The data collection produced 325 completed questionnaires (172 Australian and 153 Korean). Initially, the data were analysed via exploratory factor analysis (EFA) to address the remaining issue of measurement equivalence (metric equivalence) which ensures psychometric properties are structurally similar for both data sets (Bhalla and Lin; 1987; Malhotra, Agarwal and Peterson, 1996; Bensaou, Coyne and Venkatraman, 1999). In addition to ensuring for similar structures through factor invariance, reliability equivalence is often used to ensure for metric equivalence and is achieved when the internal consistency of scales across the samples are comparable (Sin, Cheung and Lee, 1999). While the willingness to buy and reliance on COO information scales were comparable (factor structure invariant and reliability) across both country data, modifications were necessary for the risk perception scale.

To address H1, H3 and H5, independent t-tests were conducted. The results shown in Table 1 do not support H1, showing no significant difference in the perceived risk for GM food products. The results do support both H3 and H5, showing significant differences in reliance on COO information and in their willingness to buy GM food products. Furthermore, the results show that Korean consumers rely more heavily on country of origin information than Australians, and that they are less willing to buy GM food products than Australian consumers. In order to address hypotheses 2 and 4 the data were subjected to regression analysis. The results support H2, indicating that reliance on country of origin information positively effects risk perceptions of GM food products with beta weight of .32 (t-value 5.99, sig <.001, R^2 .10) and H4, that risk perceptions of GM foods positively effects consumer willingness to buy GM food products with beta weight of -.44 (t-value of -8.86, sig <.001, R^2 .20).

Table 1: Results of Hypothesis Testing (H1, H3, H5) via Independent T-Tests

Hyp	Dependent Variable	T-Value	Mean		Sig.
			Aust.	Korea	
H1	Risk Perceptions	-1.06	4.74	4.86	ns
H3	COO	-3.79	5.10	5.75	.001
H5	WTB	3.44	3.42	2.92	.001

Discussion

The results provide theoretical and practical implications and of theoretical importance is the contribution of the cross cultural validation of the proposed relationships between perceived risk, reliance on country of origin information and willingness to buy GM food products, suggesting these relationships may describe the behaviour of consumers in different countries, rather than being culturally bound phenomena, addressing the calls to examine accepted relationships and theory in non-North American samples. This study shows reliance on country of origin information is an important individual difference variable in women from Australia and South Korea. Also, this study shows women who see greater risk associated with GM food products are less willing to purchase this product type. That this relationship held across both country groups is not surprising in that it confirms prior findings in the literature that have examined single country groups (eg: Klein, Ettenson and Morris, 1998) and provides empirical evidence for its cross cultural validity. In fact, based on this study's findings it appears there is no difference in the level of risk associated with GM food products

for both groups, which throws into contention our understanding that risk perceptions function differently in consumers from different countries. It also highlights an important practical issue about trying to minimise perceived risk associated with this type of product as a primary focus for marketers. Regarding willingness to buy, the results of this study also show cross cultural differences, with Koreans being less willing to buy GM food products than Australians. This may be a result of the risk adverse nature of the Korean culture, in addition to their history of heavy reliance on food imports and recent food scares in the Asian region (eg: avian flu). In addition, this study shows distinct cross cultural differences in consumers from Australia and South Korea. It appears that reliance on country of origin information is a particularly important consideration for Korean consumers, supporting prior work by Hong and Yi (1992). Also, the cross cultural difference found in this study supports the notion that country of origin functions differently in consumers from different countries. However, this is seen in the context of the usage of COO here. This study views reliance on COO as a consumer individual difference variable, which is not product category specific but a general tendency for a consumer to seek this information in buying decisions.

The findings of this study confirm the importance of country-product information for consumers today and suggest this is particularly important in the context of the food products in the Korean marketplace. As such, food product marketers may gain significantly by better understanding positive and negative country-images as perceived by Korean consumers who appears particularly sensitive to GM foods. Not only is there a perception of risk surrounding GM food products, but a greater unwillingness to buy such products than in Australia. Marketers of GM food products need to develop strategies aimed at alleviating consumer risk perceptions of GM foods. As perception of food safety risk influences the consumer (Yeung and Morris, 2001), it appears unlikely that GM food products will be accepted otherwise. For producers of GM food products, the current negative consumer climate is not promising. It is suggested that marketing strategies specifically communicate clear benefits. Alternatively, competitive advantage may be gained by emphasising the communication of the "non-GM" nature of your produce. In fact, "non-GM" combined with a positive food-related country image may have the potential to impact upon market share in Australia, but more specifically in South Korea.

The findings are couched in the context of certain limitations, in that the use of consumers refers to women only and as such, the views of men are not represented. However, in the context of food products women remain representative of an average food shopper (Broderick and Mueller, 1999). Further research would benefit from multi country consumer groups to test the cross cultural validity of similar issues and relationships. Other areas for future research include the need to examine reliance on country of origin information in light of domestic vs. foreign preference. Such research may benefit from examination with consumer ethnocentrism and the like, to determine if consumers are relying on country product information for the purposes of distinguishing domestic vs. foreign products, or positively perceived foreign country-origins vs. negatively perceived foreign country-origins. Importantly, bringing an emerging product type such as GM food together with solid theoretical underpinnings is one approach to cross-cultural consumer research that has the potential to strengthen theory. By exploring a wider array of product categories and theory our knowledge of consumer behaviour can only be advanced if we focus on multi country issues.

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