

**Pack Membership: A Study of Canada's Competitive  
Position in International Food Markets**

by

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## **Abstract**

The cornerstone of this dissertation is the notion that people tend to categorize objects and constructs around them according to perceptual and cognitive processes. Following the general principles of categorization, it is assumed that categorization is a hierarchical process which results in different categorization schemes depending on the level of cognition. It is also recognized that an object may be classified in multiple categories at the same time (Ross and Murphy, 1999). The stronger the association between stimulus objects, the stronger the generalization effect within the category to which they belong (Tversky, 1977).

Categorization in the case of this research begins with the premise that people make assumptions about the performance of an individual country's food system based on their perceptions of the food systems of one or more countries that are perceived as belonging to the same category or pack. At the most inclusive (abstract) level of classification, people may make inferences about an individual food system based on a simplistic dichotomous categorization: the food system is either placed within the category or pack of economically developed countries or among those that do not enjoy economic prosperity. At a more detailed level of abstraction in the categorization system, the food systems of some pack members may be perceived as more closely compatible based on similarities between these countries across a wide range of characteristics from technological development and environment to politics and general levels of regulation. Consequently, two or more countries that are more closely associated in the eyes of consumers than other developed countries are regarded in this study as sub-pack

members. In summary, the categorization outcomes at the country level give rise to what is referred to in this study as the pack membership cue, which is used by consumers to evaluate the food systems of pack or sub-pack members. Along the line of reasoning followed by Lee and Ganesh (1999), inferences based on the pack membership cue (assumed to be made at a lower level of cognition) may supersede those based on the country of origin cue.

This research, conducted in four international markets (i.e., Germany, Great Britain, Japan, and the U.S.), provides strong support for the existence of a perceptual categorization process whereby consumers evaluate food systems from different countries. It was found that, following this categorization tendency, consumers associated Canada with each of its competitors (i.e., the U.S., Australia, the Netherlands, and France) across tested markets. While the effectiveness of this cognitive scheme was influenced by consumers' familiarity with Canadian products, consumers both familiar and unfamiliar with Canadian products tended to rely on the pack membership cue to a larger extent than on the country-of-origin image cue in their evaluative judgments of the Canadian food industry. The predominance of schema evaluation was affected only when consumers perceived a particular country as unique or distinctive in the international food markets.

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## **1. INTRODUCTION**

Over the last decade, the competitiveness of the food sector in the international arena has prompted various studies by scholars, governments, and food associations alike. Until recently, agribusiness was the most closely protected sector of many national economies, but presently, as the last casualty of the forces of globalization, the agri-sectors of many countries have witnessed new international entries—and strong reactive domestic complaints (Agrawal and Kamakura, 1999; Askegaard and Kjeldgaard, 2007; Baker and Ballington, 2002; Beverland and Lindgreen, 2002; Clemens and Babcock, 2004; Gould, 1997; Van der Ploeg, 2009). At the same time, in response to local and international food-related scares, the food industry in many countries has seen government interventions and the enacting of stringent new regulations. These new safeguards and policies regarding issues such as product traceability or labeling practices have led to the rejuvenation of country-of-origin research in the agri-food context.

Country-of-origin (COO) is considered a factor in consumer buying behaviour in both foreign (Peterson and Jolibert, 1995) and domestic markets (Baker and Ballington, 2002) by consumer and industrial buyers alike (Bilkey and Nes, 1982). Moreover, COO conveyed by the “made-in” label has been recognized as an important source of product differentiation (Johansson, 1989; Echtner and Ritchie, 1993; Walker and Kent, 2000). It has been argued that, in the current global economy characterized by the coexistence of domestic and foreign products competing on the basis of intrinsic and extrinsic cues (Kaynak and Kara, 2002), companies cannot afford to ignore the COO effect in their efforts to establish a sustainable competitive advantage (Baker and Ballington, 2002;

Thode and Maskulka, 1998). However, in “a political landscape where classical notions such as sovereignty, power-politics, and even the ‘national interest’ are losing their traditional centrality” (van Ham, 2001, p. 1), the cultural and economic uniqueness conveyed by COO may be diluted. In the process of economic unification triggered by global trade and free trade agreements (e.g., NAFTA and EU), most industries participating in the global economy are bound by international standards governing their operations and offerings. Product flow, skills transfer, and international teams are characteristics of the global economy that promotes a view of the world as a global marketplace. Consequently, the question arises as to whether unification of standards and culture (Potter, 2002) has resulted in changes to the way consumers evaluate foreign industries and their products.

According to Ger, Askegaard, and Christensen (1999) “[f]uture studies of country-of-origin have to consider the experience with products from other countries in a broader context and the multiple experiential meanings of a place” (p.168). In a similar vein, Phau and Prendergast (2000) assert that “as the borders between countries become blurred, a new product evaluation tool is needed” (p. 160). This study will respond to the call for new research avenues as suggested by these scholars. It is argued in this dissertation that the image of an individual country and its effect on the perception of an industry based in that country cannot be properly evaluated in isolation from the images of that country’s industry competitors in a given market. The impact of a positive country image, which is enjoyed by most western countries, on a country’s competitive position may be seriously overestimated when a country is facing competitors from countries with

a similar level of development that share competitive benefits associated with their belonging to a group of countries referred to by van Ham (2001) as an “elite club.” It is further proposed that, within this club, members are subjected to a categorization process based on the level of association among them according to other country characteristics, such as size of economy, sociocultural endowments, environmental factors (proximity or geographical similarities), international presence (either in business or political arenas), and key industries. Consequently, attitudes towards products from a sector of the economy of a particular country may be more contingent on the perceptions of products from an equivalent sector in an economically, socially, and culturally similar country than on the general image of the country of interest. The phenomenon of cross-country sector influences is referred to in this dissertation as the “pack membership” effect. The pack membership effect is hypothesized to be particularly strong when certain unique characteristics of a country’s image that differentiate that country from the other members of the pack are of low relevance in the evaluation of a specific product category. By the same token, the effect may be fairly strong when the unique aspects of a country’s image, though relevant, have not been adequately leveraged by the industry. In contrast, the pack membership effect is postulated to be considerably weaker in a situation where a country has a very strong leadership position in the industry or, at least, the country image is compatible with the product offerings being considered. Furthermore, the pack membership effect is expected to be less pronounced in situations where consumers make assumptions about the performance of an industry based on their familiarity with products associated with the same or another industry in an evaluated country.

## 2. LITERATURE REVIEW

Over 40 years of research on the country-of-origin effect has generated a wealth of empirical evidence and a number of theoretical frameworks in support of the importance of COO. Although there is overwhelming agreement that positive country image is an asset in domestic and export markets (Baker and Ballington, 2002; Papadopoulos and Heslop, 1993), the relative importance of COO in comparison to other cues has been the subject of some controversy (Paterson and Jolibert, 1995; Phau and Chao, 2008). Moreover, some scholars (Ohmae, 1989; Liefeld, 2004) claim that in the contemporary global market, the majority of consumers pay little attention to the “made in” label at the checkout counter.

While the debate on the COO effect on purchasing behaviour has been inconclusive (Bilkey and Nes, 1982; Cheron and Propeck, 1997; Ozsomer and Cavusgil, 1991; Peterson and Jolibert, 1995), it has generally been agreed that “certain countries have a better reputation than others for delivering goods of high technical standards and low risk of variability in attributes” (Knight, et al., 2007, p. 119). However, opinions as to the mechanisms by which consumer attitudes towards products of a specific country are influenced by its national reputation vary widely (Lee and Ganesh, 1999; Roth and Romeo, 1992; Verlegh and Steenkamp, 1999). Some scholars (Beverland and Lindgreen, 2002) hold the view that the strength of a country’s general profile determines its competitive position in a given market. Others argue that the reputational capital associated with a specific product category “will influence choice more than a nation’s overall attractiveness” (O’Shaughnessy and O’Shaughnessy, 2000, p. 56). Finally, some

scholars speculate that the “impact of country of origin may be considerably more complex than is typically assumed” (Johansson, Douglas, and Nonaka, 1985, p. 395).

For years following the inception of COO research, studies within this domain focused on durable goods industries, while the food sector, as a producer of perishable goods, was relatively neglected (Knight and Gao, 2005). Recently, many studies have confirmed the applicability of COO theory in relation to food products (Camgoz and Ertem, 2008; Felzensztein and Dinnie, 2006; Thode and Maskulka, 1998). Moreover, in Australia’s experience, domestic campaigns highlighting COO were more effective in terms of domestic food preference than for any other products (Sweeney, 1999). Scholars have acknowledged, however, that the characteristics of food products, consumers’ consumption goals, and specific practices within the agri-food industry (e.g., food supply chains and distribution channels) may have an impact on accessibility or sensitivity to the COO cue.

Cognitive theories have long been employed in cross-disciplinary studies to explain various phenomena under investigation. Since people tend to rely on pre-existing associations to organize the flow of information (Lachman, Lachman, and Butterfield, 1979), categorization processes constitute an essential building block of a theory of cognition (Fiske and Pavelchak, 1986; Lamberts, 2000). Schemata or cognitive structures that guide cognitive processing have been used by psychologists to explain shortcomings in human judgment (Turk and Salovey, 1985). The human propensity to categorize stimuli around such schema has been applied in social studies to account for stereotyping,

political attitudes, and group decision making. Within an information processing framework, the principles of categorization have been applied to theories of consumer choice (Bettman, 1979), brand image transfer (Mittal and Tsiros, 1995), brand complementarities (Lange, 2005), and brand extension (Shen, Bei, and Chu, 2011). In sharp contrast to traditional cognitive research, the current theoretical effort in the field integrates the affect and cognition components of human cognition (Fiske and Pavelchak, 1986; Sujan and Bettman, 1989).

Despite the belief that the cognitive aspect of consumers' attitudes surrounding country image may hold the key to better accuracy in predicting their behaviour (Shimp et al., 1993), the application of consumer cognitive structures (i.e., categorization) in COO studies is rare (Mittal and Tsiros, 1995). A notable exception is the study conducted by Shimp et al. (1993) on consumers' cognitive categorization of countries based on their mental representations of those countries and their products. According to the study, similar product profiles (e.g., low/high quality or low/high price) trigger an association among countries, which results in clustering of those countries. Though Shimp et al.'s (1993) study used product attributes rather than country attributes to classify countries into cognitive clusters, the processes behind the cluster formation and the role these groupings play in explaining responses to products associated with clustered countries resemble those explaining the pack membership phenomenon.

This literature review section is organized as follows. Section 2.1 provides an overview of the current state of knowledge in the country-of-origin literature. Careful attention is given to the theoretical and empirical complexity inherent in studies of the COO effects,

which may pose a challenge in reconciling various research findings. Section 2.2 describes the nature and characteristics of food products and developments in the food industry from the country-of-origin perspective. Section 2.3 highlights the main concepts associated with the principles of categorization that are relevant to the pack membership phenomenon. It also presents the possible levels of categorization of countries in the international arena. Examples of categorization in the business literature and more specifically in the COO literature are illustrated.

## **2.1 COUNTRY-OF-ORIGIN (COO)**

The effect of country of origin has been tested across many product categories, specific brands, and various ethnic groups and cultures (Badri, Davis, and Davis, 1995; Meng, Nasco, and Clark, 2007). Academic efforts to present new evidence in support of the complexity of the area of inquiry have not resulted in consensus among scholars on the importance (Verlegh and Steenkamp, 1999), effect (Peterson and Jolibert, 1995), and contribution of individual elements of the COO models. On the one hand, the appearance of national icons, for instance the Eiffel tower, the Roman Colosseum, or the Taj Mahal on a wide range of products implies the existence of the COO effect. Companies established in well-reputed countries often incorporate the country's name or visual symbols associated with the country in the corporate name or logo. Companies lacking the competitive advantage provided by a positive image of their hosting country (especially in certain product categories) may try to link themselves with an alternative country (Dowling, 2001). On the other hand, the wide acceptance by North American consumers of products from countries having a poor image (Faltermayer, 1990; Liefeld, 2004) coupled with weak discrimination among products of various origins (Balabanis

and Diamantopoulos, 2004; Knight and Gao, 2005; Samiee, Shimp, and Sharma, 2005) may suggest limited reliance on the country of origin cue by a significant segment of the population, at least with regards to certain types of products or products in certain use contexts (Pharr, 2005).

The controversy surrounding the actual importance of COO is difficult to settle; indeed, the literature offers a great deal of theoretical and empirical evidence to support and contradict both sides of the debate. Though some conditions provide favourable grounds for asserting the importance of COO, the country-of-origin effect tends to be contextually driven (Beverland and Lindgreen, 2002; Eroglu and Machleit, 1989; Josiassen et al., 2008; Laroche et al., 2005). The role of COO varies across product categories (Niss, 1996; Roth and Romeo, 1992), countries (Heslop, Papadopoulos, and Bourk, 1998; Shimp and Sharma 1987; Schuiling and Lambin, 2003), and consumer segments (McCutcheon et al., 2009; Wang and Lamb, 1980). A number of scholars have identified product familiarity and experience as key variables in the relationship between COO and product evaluation (Baker and Ballington, 2002; Samiee, 1994; Samiee, Shimp, and Sharma, 2005). According to Peterson and Jolibert (1995), the magnitude of the country-of-origin effect varies depending on the number of cues examined, the sample size, and the dependent variable used in the study. Cheron and Propeck (1997) point to differences in sampling procedures to explain some of the inconsistencies in findings.

While many studies focus on conditions favoring reliance on the COO cue in the consumer evaluation process, a parallel stream of research investigates conditions that

have been observed to considerably weaken the effectiveness of the country image cue. Domestic bias in a target market is the most commonly identified threat to the acceptance of foreign products, regardless of the strength of the country image. Although country image is considered “a kind of national insurance policy” (Anholt, 2005) that protects against undesirable political and economic developments, animosity is often mentioned as a source of adverse influence on country image (Heslop et al., 2008; Klein et al., 1998; Klein, 2002; Rice and Wongtada, 2007). Furthermore, some scholars argue that globalization may diminish the role played by the COO cue on the international stage (Phau and Prendergast, 1998, 2000).

### **2.1.1. Contextually-Dependent Findings**

#### **2.1.1.1. Product Category-Industry Image**

Many researchers (Cheron and Propeck, 1997; Cordell, 1992; Roth and Romeo, 1992) suggest that country-of-origin preferences may be driven by product category: “While consumers may prefer automobiles from Japan and Germany, they would rather buy crystal from Ireland and leather shoes from Italy” (Roth and Romeo, 1992, p. 493). Consumers definitely value Afghan rugs more than they value Afghan televisions (Han, 1989). The international recognition enjoyed by some countries in specific product categories is beyond question (Kotler and Gertner, 2002). Australian wool, French wine, Italian sports cars, Japanese consumer electronics, and Swiss watches are well-known examples. The fame built on specific expertise or areas of strength enjoyed by some countries can also be transferable across industries (Dowling, 2001). Thus, the reputation of French products as stylish, chic, and tasteful facilitates the sale of French products

such as clothes, perfumes and food that call for these traits. Germany's renown in the area of engineering is an asset for the car and appliance industries. America's image, closely linked with Hollywood, appeals to consumers around the world aspiring to enjoy the American way of life. Still, despite the strong international image of their homeland, some companies originally established in very prosperous economies attempt to further maximize their chances of success by triggering association with another country that, in consumers' minds, holds a dominant position in a specific product category. For example, the German company Montblanc makes an effort to establish the most favourable country association depending on the product category. While its pen line is linked with its German origin, its watch line is promoted using the Swiss tradition in watchmaking. The claim to Swiss precision was possible because of the takeover of a local watch maker in Zurich (Montblanc website). An American cosmetic company, Estée Lauder, actually named after co-founder Esther Lauter (Lauder, 1997), took on the French version of the name to promote association with French beauty products. Interestingly, the rented identity seems to be profitable for companies residing in countries with a strong country image, even in cases where its products are deliberately linked with a country whose image is less favourable in the Western hemisphere. Thus, the British company Diageo fought a number of lawsuits to maintain the right to sell its vodka under the Smirnoff brand, the trade name of a Moscow-based vodka distillery. Finally, a joint venture with the Russian Смирновъ (Smirnoff) resulted in the British company's penetration of the European and North American markets (Smirnoff, Wikipedia).

In some cases, the image associated with the COO, though positive, is not in agreement with the image promoted by a particular industry or company. It has been documented in the literature that some companies make a conscious attempt to downplay the COO association in order to establish the image that is most beneficial in a certain product category. For example, Jaguar, the British car maker, tried to distance itself from the British stereotype to enhance high-tech associations with its products (Barrett, 1996); and fashion designers Hugo Boss and Jill Sander downplayed their German origin, which projects an image of technical competency and rationality (Anholt, 2003) – an association not congruent with the requirements of the fashion industry. In the words of Ger, Askegaard, and Christensen (1999, p. 165), “The experiential PCI<sup>1</sup> tells us a story. Basically a story about the place of origin of something. But the product itself also tells its own story according to its classification in the specific market context, including such dimensions as perceived competing products and brands, distribution, etc.”

The COO literature provides many examples of countries enjoying positive consumer attitudes toward some of their industries but considered as relatively uncompetitive in product classes not traditionally associated with their core competencies. Dornoff (1974) found that respondents were neutral toward France with respect to its electrical and mechanical products at a time when Japan and Germany were considered the respective leaders in those product categories. Interestingly, some research provides evidence that positive country image is most effectively used by industries that define or reinforce the image of their home country (Dowling, 2001). For example, the top rankings received by

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<sup>1</sup> PCI stands for product-country image, a term coined by Papadopoulos and Heslop (1993).

Australia for admiration of its people, landscape, lifestyle, and working environment were not mirrored in the scores given to Australian products or exports; they were, however, relevant in the evaluation of the tourist industry, foreign investment, immigration, and governance (Anholt, 2005).

Dornoff et al. (1974) are considered to have laid the groundwork for inquiry on the interaction effect of product classes and country image perception (Dinnie, 2004). Eventually this stream of research led to the development of the product-country image construct introduced by Papadopoulos and Heslop (1993). In subsequent research, Askegaard and Ger (1998) advanced the idea of “contextualized product-place image” (CPPI), postulating that the impact of product-country image was context-specific. Finally, Roth and Romeo (1992) proposed that a product-country match along the product and country image dimensions seems to determine consumer willingness to buy products of a particular country. A favourable match takes place when the perceived strengths of the country correspond to the important features of the product. An unfavourable match occurs when the image dimension is important for a particular product category but is not associated with the image of the evaluated country. Where there is a favourable match, the communications strategy should focus on county-of-origin information; otherwise, the country dimension should not be used to promote the product’s benefits.

### **2.1.1.2. Product Familiarity**

Among a set of antecedent conditions for COO as a cue in purchasing behaviour, Samiee (1994) placed product familiarity and experience as the main determinants of COO sensitivity at the consumer level. Van Raaij (1977) considered prior product knowledge or product familiarity as the main determinant of consumer information processing. Many scholars (Eroglu and Machleit, 1989; Maheswaran, 1994) suggest that familiarity with a country's products moderates the impact of COO on product evaluation. Consumers not familiar with a product tend to use country image as an indicator of product performance. In general, COO is more likely to play a significant role in the evaluation of lesser known products, especially products that are not widely available on the market (Parameswarana and Yaprak, 1987), and products at the introductory stage of their life cycle (Ness, 1996). Maheswaran (1994) claimed that novices or customers who lack expertise in the area necessary for product evaluation tend to rely on COO in assessing a product, paying little attention to product attributes. In contrast, experts depend on COO for evaluating products only when product attribute information is not available or is ambiguous.

In "one of the most cited studies in the country-of-origin literature" (Dinnie, 2004, p. 173), Han (1989) tested two alternative structural equation models to explain the role that product familiarity plays in product evaluation. Han (1989) asserts that consumers are not capable of objective product evaluation in situations where they have limited knowledge of the products of a specific foreign country. Thus, low product familiarity results in the "halo" effect, whereby consumers lacking product-related experience rely on the country-of-origin cue to infer product attributes. In the halo model, consumers base their attitudes

toward foreign brands on the evaluation of product attributes derived from country image, which is defined as the consumer's general perception of the quality of products originating in a specific country.

The halo model is supported by the previous work of Erickson, Johansson and Chao (1984) and Johansson, Douglas and Nonaka (1985), who considered product familiarity to be an important factor in "the accumulation of product-related experiences and objective knowledge." These authors reported that consumers use country image in the evaluation of product attributes but do not use country image to directly evaluate the overall product performance. Thus, country image and product evaluation are linked indirectly through beliefs about product attributes. According to Han (1989), most of his contemporary studies assume that, directly or indirectly, country image acts as a "halo."

The majority of researchers expect country image to shape consumer judgment in situations of uncertainty (Shapiro, 1982). However, the view of country image as a halo construct does not apply in situations where customers are already familiar with products from a certain country. Consequently, the limitations of the halo model triggered the development of a competitive model – the summary model. In the summary model, consumers are expected to be familiar with products of a certain country to the extent that they use country image as a summary construct or an informational abstract reflecting beliefs about product attributes. Han (1989) based the summary model on the theories of information chunking (Miller, 1956) and affect-referral (Wright, 1975), which imply that

consumers store information such as product attributes in the form of “chunks,” which through the affect referral process are implemented in the evaluation of alternatives.

### **2.1.1.3. Segments**

It has been established in the COO literature that consumers differ in their sensitivity to the COO cue. The notion has been particularly conspicuous in the context of scholarly disagreement as to the importance of COO information in product evaluation, e.g., Ohmae (1989) vs. Johansson (1993). On the one hand, the debate between Ohmae (1989) and Johansson (1993) may simply represent a disagreement between practitioners and academics. On the other hand, the dispute brings to light the fact that consumers differ in their consumption goals and the use of various cues. While an overwhelming number of studies support Johansson’s claim of the importance of the country-of-origin effect on product evaluation, Ohmae’s (1989) observations to the contrary based on experimental design may have their merits. Consumers preoccupied with a particular product attribute, such as price, may pay no attention to the “made in” label at the cash register. Thus, it is logical to assume that there is a segment of consumers who are not sensitive to the idea of country of origin. However, the existence of such a segment does not negate the country-of-origin effect on product evaluation among the rest of the consumer population.

Though academic efforts to explore customers’ sensitivity to the COO cue in domestic or international markets does not always fall under the umbrella of segmentation research, the literature provides a great deal of evidence to suggest that the importance consumers assign to country of origin varies significantly across many factors. Numerous scholars

have observed that the effectiveness of country information varies depending on the consumer's level of involvement with the product (Cheron and Propeck, 1997; Hollebeek, et al., 2007; Loussiaef, 2001; Josiassen et al., 2010; McCutcheon et al., 2009) but have not reached agreement as to the direction of this relationship. Loussiaef (2001) noted that sensitivity to COO increases with the level of involvement; in contrast, Josiassen, Lukas, and Whitwell (2008) found that consumers who were less involved with the products were more likely to consider COO image. Other variables specifically indicated by scholars as important for segmenting are ethnocentrism (consumer attitudes toward imports) (Lantz and Loeb, 1996), socioeconomic status (Wang and Lamb, 1980), and demographic characteristics (McCutcheon, Bruwer, and Li, 2009).

Thus, there is a realization among scholars that the implicit assumption of the homogenous composition of national markets in the country-of-origin studies may hinder the effectiveness and soundness of COO analysis. For example, Burgess and Harris (1999), Lenartowicz and Roth (2001), and Laroche, Papadopoulos, Heslop and Bergeron (2003) reveal the existence of within-country subcultures that tend to be overlooked in the analysis of country-of-origin studies (Dinnie, 2004). According to Heslop, Papadopoulos, and Bourk (1998), "Subnational differences among consumers often are substantial enough to warrant research attention. . . . Ignoring internal heterogeneity may lead international marketers to overlook opportunities and/or miss threats arising from subculture-based behavioural differences" (p. 113). Heslop et al. (1998) point to the existence of various subcultures in target markets that may respond differently to Canadian offerings. Also they illustrate how Canada, as the homeland of the two

European colonial founding nations of France and England, may be perceived differently depending on the consumer's association with either subgroup.

## **2.1.2. Methodologically Dependent Findings**

### **2.1.2.1. Single vs. Multi-cue Studies**

Research on the country-of-origin effect often approaches the construct as an extrinsic product or service cue or 'intangible' product attribute. In contrast to intrinsic cues or physical product attributes, such as design, taste, and appearance, the country-of-origin attribute may change without a definite and definable change in the physical characteristics and performance of the final product (Cordell, 1992; Olson, 1972; Pharr, 2005). The COO characteristic is shared with other extrinsic cues, such as price, brand name, warranty, or retailer reputation. While each of these cues provides the customer with unique information to evaluate a product (Bilkey and Nes, 1982), the informational content of the cues tends to interact in the product evaluation process (Agarwal and Teas, 2001).

It has been argued that single-cue studies overestimate the country-of-origin effect (Bilkey and Nes, 1982; Ozsomer and Cavusgil, 1991). According to Bilkey and Nes (1982), a single-cue design yields statistically significant effects that may or may not reflect the real-life situation. In single-cue design, country-of-origin serves as the main or only source of information on which customers base product judgment (Baker and Ballington, 2002). However, the relative importance of COO tends to diminish when additional cues enter the decision-making process (Ettenson, Gaeth, and Wagner, 1988;

Hong and Toner, 1989). For example, confirming previous research by Nes (1981), Johansson, Douglas, and Nonaka (1985) found the impact of COO on product evaluation to be very weak or non-existent in the case of established brands. Moreover, COO was found to carry limited informational value for consumers who tend to rely on the prestige of the retailer (d'Astous and Ahmed, 1992). Comparing the effect of COO with that of price and brand, Ahmed et al. (2004) noted that the role of COO is relatively insignificant, and that brand name appears to be the "determinant factor" when consumers choose between alternatives. A significant interaction effect between country-of-origin and price was reported by Ahmed, d'Astous, and Zouiten (1993), who explain the finding by the price consensus that is required to sell products from countries with a poor image. As well, Ahmed and d'Astous (1995) found that an unfavourable country image can be successfully offset by other cues, namely a prestigious brand name or extended warranty.

Some scholars, on the other hand, have demonstrated the strength of the COO effect above and beyond those of brand, price, and quality (Ahmed and d'Astous, 1996; Lantz and Loeb, 1996; Okechuku, 1994). Wall, Liefeld, and Heslop (1991) reported that country-of-origin was more important than price and brand name in assessing product quality. On the basis of results observed for most product categories tested in their experimental study, the authors concluded that "consumers often favored a low-priced, well-known brand from a high reputation country" (p. 111). Thus, despite four decades of research in the field, the relative importance of country-of-origin as compared to other cues has not yet been established (Dzever and Quester, 1999).

### **2.1.2.2. Dependent Variables**

While the fundamental question is to what extent country of origin matters to which consumers under which conditions and in which situations, among the array of more specific questions posed by COO scholars are concerns as to what extent country-of-origin information influences consumers' beliefs about various product attributes and their associated purchasing intentions. Most studies concerned with COO effects focus on the perception of product quality (Ahmed, d'Astous, and Eljabri, 2002; Chao, 1998; d'Astous and Ahmed, 1999; Han and Terpstra, 1988; Hong and Wyer, 1989; Jaffe and Nebenzahl, 2001; Johansson, 1989; Kaynak and Cavusgil, 1983; Papadopoulos and Heslop, 1993). Others examine COO as an indicator of willingness to buy (Lumpkin et al., 1985, Roth and Romeo, 1992; Watson and Wright, 2000), often referred to as purchase intention. Finally, many of these studies investigate the impact of COO on more than one dependent variable (e.g., Wall, Liefeld, and Heslop, 1991).

Peterson and Jolibert (1995), looking at 200 studies, noted significant differences in the COO effect size between studies that considered perceived quality/reliability and those that used purchase intention as the dependent variables. In subsequent meta-analyses of country-of-origin research, Verlegh and Steenkamp (1999) and Cheron and Propeck (1997) also observed that the country-of-origin effect was more pronounced in quality evaluation than in purchase intention. Wall et al. (1991) found that while country of origin was used by consumers in the assessment of product quality, it was not used in the assessment of purchase likelihood. Agrawal and Kamakura (1999) concluded that the

COO effect “tends to become weaker as one moves from perception of product quality to attitude formation and to behavioral intention” (p. 256).

### **2.1.2.3. Sampling Procedure**

The results of meta-analyses of country-of-origin research (Peterson and Jolibert 1995; Verlegh and Steenkamp 1999) suggest that inconsistent COO effects can be at least partially explained by lack of sufficient rigor in sampling procedures. Indeed, the field is notorious for convenience sampling and sample sizes that are too small to be statistically reliable. Such problems raise doubts about the generalizability of studies of COO effects (Insch and McBride, 2004; Peterson and Jolibert, 1995; Samiee et al., 2005; Verlegh and Steenkamp, 1999).

The use of student samples in COO research has been subject to severe criticism (Bilkey and Nes, 1982; Papadopoulous, 1986; Cheron and Propeck, 1997; Dinnie, 2004). While students offer easily accessible samples for scholars, they do not necessarily represent customers at large, especially for certain product categories. Interestingly, this concern was not fully supported by Peterson and Jolibert (1995), who found no significant differences in effect size between students and non-students in quality/reliability perception. However, the scholars did report significant effect size differences between these two groups in purchase intentions. Similar findings were obtained based on meta-analysis conducted by Liefeld (1993).

Peterson and Jolibert's (1995) critique centers around the difference in statistical effect size between surveys characterized by small samples (less than 260) and those using large samples (260 and larger). From a statistical perspective, insufficient sample size fails to guarantee enough power for detecting effect size. The impact of small sample size is particularly problematic in studies measuring the effect of the COO cue on purchase intention. Since the effect size for purchase intention is on average smaller than the effect size for quality perception, small-sample studies with the former focus are more likely to yield insignificant results.

### **2.1.3. Special Topics in the COO Literature**

#### **2.1.3.1. Domestic Bias**

Domestic bias refers to preferential treatment awarded by domestic consumers to products grown or manufactured within their country's borders. Theoretically, the bias influences consumer choice in favour of domestic products even though foreign equivalents are readily available (Lantz and Loeb, 1996). For example, in Wall and Heslop's (1986) study based on the responses of 635 Canadians, Italian shoes were the only products preferred over their Canadian equivalents.

Chasin and Jaffe's (1979) study was the first piece of empirical research in the country-of-origin literature to link the ethnocentric tendencies of the consumer population of a developed country to the ranking of its domestic products above those made outside its borders. For Shimp and Sharma (1987), consumer predisposition towards home country products, referred to in the international literature as "domestic-country bias," is

primarily explained by “consumer ethnocentrism.” For the past 20 years, the 17-item consumer ethnocentrism scale (CETSCALE) developed by Shimp and Sharma (1987) has been the most frequently utilized instrument to capture the relationship between consumer ethnocentrism and domestic-country bias. Subsequent research (Balabanis and Diamantopoulos, 2004; Evanschitzky et al., 2008; Lantz and Loeb, 1996; Watson and Wright, 2000) has confirmed that higher levels of ethnocentrism correspond to stronger preference for domestic products. Interestingly, individuals expressing ethnocentric tendencies were found to extend their preferences to products originating in countries similar to their own (Lantz and Loeb, 1996; Watson and Wright, 2000), and also to be more likely to reject products from culturally dissimilar countries, whether or not domestic equivalents are available (Lantz and Loeb, 1996; Watson and Wright, 2000).

The preference for domestic products is not universal (Lantz and Loeb, 1996; Samiee, 1994) but tends to vary from country to country. Consumers in many developing countries were found to favorably evaluate products from the western hemisphere over their own domestic products (Cheron and Propeck, 1997, Papadopoulos and Heslop, 1993) for reasons of association with income or social status (Dichter, 1962). In most advanced economies, loyalty towards domestic products is often challenged by foreign entries with excellent reputations in certain product categories (Cattin, Jolibert and Lohnes, 1982; Nagashima, 1970). For example, Al-Sulaiti and Baker (1998) found that Americans favored domestic products over Japanese imports only when the quality of products from both sources is comparable. It has also been demonstrated (Schooler and Wildt, 1968) that price concessions, where foreign products enter the market with lower prices than

those of similar domestic goods, may be an effective incentive for consumers to switch to the foreign products in spite of their domestic bias.

Country-specific attitudes and general attitudes combined can provide a powerful indicator of consumers' attraction to imports from a specific country when their feelings towards that country and foreign products are consistent (Jaffe and Nebenzahl, 2001; Rice and Wongtada, 2007). Thus, affinity for the country supported by favourable attitudes towards foreign brands might produce a strong desire to purchase products branded by that country. In contrast, strong negative feelings (e.g., political or economic animosity) directed towards the country in conjunction with anti-global trade attitudes would result in strong resistance to imports from the country (Rice and Wongtada, 2007). Finally, a high level of conflict arises when country-specific attitudes are positive but are not reinforced by favourable attitudes towards imports in general. Similarly, customers with highly pro-global orientations face a dilemma when evaluating the products of a country that elicits negative imagery. The likelihood of inter-attitudinal conflict may depend on many factors, including demographic characteristics. Young people, for example, were found in many studies to be more sympathetic towards global culture while making a fuzzy distinction between home and invasive culture (Askegaard and Csaba, 2000; Rice and Wongtada, 2007).

### **2.1.3.2. Animosity**

The impact of animosity on product and brand evaluation is assessed by most scholars in the context of events that have triggered controversy in either the international arena or a particular geographic region. Most studies in this domain reported some kind of “boycott” reaction to a military, political, or economic situation (Klein et al., 1998). According to Ger and Belk (1996), resistance to products from a country affected by animosity seems to depend on the extent of awareness of or the depth of resentment towards the particular events that place the country in an unfavourable light. Nagashima (1977) suggested that the extent of harm done to the reputation of a particular country could be captured in absolute terms and in relation to the image of other countries. Klein (2002) noted that, in contrast to consumer ethnocentrism, which can explain the choice of domestic products over imported ones, animosity can explain the preferences for products from one country over those from another.

By and large, scholars have studied the impact of negative events on consumers’ attitudes and behaviour by focusing their attention on specific actions carried out by a particular country, e.g., the U.S. war on terror and the heavy-handed tactics of the Department of Homeland Security in the post 9/11 era (Holt et al., 2004); France’s nuclear testing in the Pacific (Ettenson and Klein, 2005; Heslop, Lu, and Cray, 2008); Japan’s invasion of China (Klein et al., 1998; Klein, 2002); and French opposition to the war in Iraq (Chavis and Leslie, 2009). Though most of these scholars have pointed to potentially negative impacts of animosity towards a particular country on consumer willingness to engage with products from that country (e.g., Ettenson and Klein, 2005; Heslop, Lu, and Cray,

2008), the reports of consumers' evaluative processes (as a reflection of consumer animosity) vary from study to study. Thus, Ettenson and Klein (2005) found that Australian consumers' animosity towards France negatively influenced their willingness to buy French products, but not their quality judgments of those products. These findings supported previous research reported in Klein (2002), whereby Chinese animosity towards Japanese products was manifested in relation to purchase intention but not to product quality. However, Klein et al. (1998) drew a somewhat different conclusion, observing that Chinese animosity toward Japan had negative consequences for both evaluation of product quality and willingness to buy Japanese products. Investigating cycles of boycott reaction, Chavis and Leslie (2009) estimated that the sale of French wines in the U.S. dropped by 27% soon after France refused to support the U.S.-led war in Iraq, and by 13% six months into the war. Drawing on their study of anti-French sentiment in Australia, Heslop, et al. (2008) demonstrated that an attitude of dislike or mistrust towards a "villain" country affected evaluation of the country and its people and willingness to engage with the country, including buying their products. While the country-people competency ratings of France showed little vulnerability to the reactions of Australian consumers to France's decision to resume nuclear testing in the Pacific in the three phases of testing (i.e., before, during, and a decade after the event), the ratings of country-people character beliefs and consumer response to French products declined dramatically around the time of the incident but had more than recovered a decade later. Additionally, the study demonstrated that the relative importance of the effect of country-people character beliefs on product evaluations, compared to that of country-people competency beliefs, varied considerably depending on the time of testing. Finally, Holt et

al. (2004) reported that their survey indicated that only 13 percent of respondents were turned off by brands that preached American values.

### **2.1.3.3. Globalization**

The impact of global trends on the significance of the COO cue is still mostly speculative. While changes brought about by the elimination of trade barriers are undeniable, the importance of country image and its effect on consumers' beliefs and purchase intentions are difficult to determine. Some believe that globalization obscures any country-of-origin effects; others are convinced that global changes accentuate the importance of the COO cue (Phau and Prendergast, 1998, 2000). The view that globalization emphasizes national differences appears side-by-side with the argument that the proliferation of international markets leads to international similarities (Sheth and Parvatiyar, 2001). A few scholars, such as Wood and Grosvenor (1997), assert that global practices have never been adopted by international players. Instead, companies operating in the international environment employ international marketing practices that are based on the notions of adaptation and customization to individual countries' differences (Douglas and Wind, 1987; Quelch and Hoff, 1986). Still, according to many scholars, the actual effects of the liberalization of international trade do not correspond to the predictions of global market proponents. Sheth (1998) argues that "globalization has brought about similarities between blocks of countries instead of cross-functional integration" (Phau and Prendergast, 2000, p. 159). Sheth and Parvatiyar (2001) observe that as "capital and labor move freely between member countries, individual country characteristics are no longer different from prevailing intra-country regional

characteristics” (p. 16). Moreover, Levitt (1983) postulates that globalization leads a common culture which, in turn, results in homogenization of consumer buying behaviour. Consequently, “because market needs are becoming homogeneous, country differences are less relevant” (Sheth and Parvatiyar, 2001, p. 16). Lampert and Jaffe (1998) further elaborate: “The more homogeneous and standardized products are in a product category, the less is the effect of perceived product image on demand. Alternatively, the higher the level of differentiation in a product category, the more the perceived product image affects demand” (p. 62).

Russell and Russell (2006) argue that global consumers may separate their attitude towards a country of origin from their purchasing behaviour. First, since many products are not uniquely associated with a single country due to multi-country affiliations (manufacturing, designing, assembling, or branding), product evaluation becomes a complex process (Samiee, 1994). Second, offshore manufacturing, cross-border transfer of labour, and dissemination of technology (Holt et al., 2004) may undermine the customer’s conviction that certain nations have unique competencies. Finally, the unification of international standards for quality and safety may facilitate the generalization process, since “the world as a single place” becomes a frame of reference (Levitt, 1983; Zou and Cavusgil, 2002; Yip, 1995, 2003). Consequently, the country of origin may lose importance in the eyes of consumers (Phau and Prendergast, 2000), at least to those buying in to global ideology.

Some scholars argue that the global trend has particular relevance to the evaluation of domestic products, as the neutralization process threatens national interests. However, the appeal of global hegemony is not uniform across nations, nor does it penetrate all segments of a given society. For example, scholars point to a revitalization of regional identities (Heslop, Papadopoulos and Bourk, 1998; Orbaiz and Papadopoulos, 2003; Watts, 1996) and the resilience of distinctive local consumption cultures (Jackson, 2004). Chattalas, Kramer, and Takada (2008) describe a “minority” group in the U.S. market whose “attitudes toward the COO cue can be strongly held and disseminated, often as an economic, political or cultural backlash to the perceived threats posed by globalization” (p. 58). In contrast, many studies have identified young consumers as being more likely to be attracted to foreign offerings (Askegaard and Csaba, 2000; Josiassen, 2010; Rice and Wongtada, 2007).

Some scholars observe that, as branded products gain visibility and recognition (Knight and Gao, 2005; Phau and Prendergast, 2000), global consumers give prominence to brand information over other cues (Batra et al., 2000; Kim et al., 2002; Zhou and Hui, 2003). Interestingly, some evidence suggests that the country-of-origin information incorporated into a brand image may be a powerful cue in product evaluation (Phau and Prendergast, 2000). According to Phau and Prendergast (2000), “The relationship between brand and the country image may present opportunities for managers for exploiting synergies in terms of marketing efforts and communication initiatives” (p. 167).

Even opposing views on the effects of globalization converge on the importance of establishing and protecting the national brand (Curtos-Wilson, McCain, and Ray, 2006). Olins (2002) argues for the necessity of action on the part of individual governments to overcome the unification process. Aronczyk (2008) noted that in the global world, “‘competitive edge’ over other nations” is gained by reference to “national cultural specificity” (p. 44). More substantial benefits can be realized “if the country can find a ‘lucrative role’ within a globally integrated economic system” (Aronczyk, 2008, p. 44). Furthermore, in the global economy, where product characteristics can be easily imitated (D’Astous and Gargouri, 2001; Kotler and Gertner, 2002), the reliance on a product’s physical features is not sufficient. Ultimately, differentiation at the brand (Kotler and Gertner, 2002) and country levels (Zeugner-Roth, Diamantopoulos and Montesinos, 2008) is inevitable.

## **2.2. FOOD PRODUCTS**

For decades agri-business has been the subject of various types of analysis conducted at different aggregation levels (i.e., entire economy, specific sector, or individual firm) and with different methodological tools (e.g., survey, experimental and case studies). As a result, the food literature has accumulated a wealth of research exploring a wide range of food-related issues and challenges. A large segment of the literature is dedicated to understanding food preferences based on cultural, social, personal and situational factors (Dickens, 1965), the symbolic meaning of food (Lewin, 1943), and food habits (Maslow, 1970). Within the marketing domain, analyses of the competitiveness of the various players in the food system, new product introductions, and advertising efforts (Kinnucan and Myrland, 2008) mirror studies undertaken in other sectors of business.

What people put on their tables may be driven by simple biological need and a complex food culture reflecting individually and socially motivated food consumption patterns. While biological needs are described in terms of caloric amount and fluid intake, the concept of food culture refers to a particular consumption pattern – “what to eat and with what, how it is to be cooked, when it is to be eaten and under what social circumstances” (Askegaard and Madsen, 1998, p. 550). Food culture is known to vary among countries, regions, ethnic groups, social classes, and families. From the marketing perspective, the effort to appreciate the phenomenon of food consumption corresponds to marketing attempts to reveal consumers’ consumption goals, which can then be fulfilled by food products designed to meet specific criteria. Thus, marketers are concerned with the effects of meeting a particular consumption goal on consumer satisfaction and willingness to repurchase a product.

In evaluating foods, consumers can assess only certain aspects of performance through direct inspection at the point of purchase. However, many desired characteristics of foods are not directly observable before use, and some not even after use. The term “credence” refers to product attributes that the consumer must take on faith, i.e., process or production attributes that cannot be discerned by consumers before or after consumption, but that the producer wants them to believe to be actual (Caswell, 1998; Golan et al., 2004; Nelson, 1970). The importance of credence value in the successful presentation of agri-foods underlies the efforts of marketers operating in different food sectors to effectively communicate to consumers the presence of the desired attributes in products specifically tailored to their needs.

Many foods have traditionally been associated with a certain country or geographic location (Agrawal and Kamakura, 1999; Beverland and Lindgreen, 2002). Yet, because they are classed as a low-involvement product category (Alden, Hoyer, and Crowley, 1993; Ozsomer and Cavusgil, 1991) agricultural products have not received the same level of attention as that dedicated to durable goods in the country-of-origin literature (Knight, et al., 2007). More recently, the globalization of food production and consumption has spurred interest among scholars in the relationship between agri-foods and geographic origin (Felzensztein and Dinnie, 2006, Thode and Maskulka, 1998). As country-of-origin labeling (COOL) is promoted by advocacy groups and consumers, the impact of origin information has become a concern for businesses and governments. Finally, some countries attempt to promote the COO cue within their national boundaries in order to encourage widespread consumption and distribution of domestic food products (Baker and Ballington, 2002).

### **2.2.1. Desired Benefits**

Scholars in many disciplines, including sociology, psychology, economics, and marketing, have been concerned with the classification of the benefits consumers seek from product consumption and the relative significance of these benefits to them (Chitturi, Raghunathan, and Mahajan, 2007; Dhar and Wertenbroch, 2000; Kivetz and Simonson, 2002b; Okada, 2005; Voss, Spangenberg, and Grohmann, 2003). Product design benefits tend to be grouped as either hedonic or utilitarian based on the nature of consumer needs they are presumed to target (Batra and Ahtola, 1990; Chitturi,

Raghunathan, and Mahajan, 2007; Chitturi et. al., 2008; Dhar and Wertenbroch, 2000; Okada, 2005).

Hedonic benefits include aesthetic, experiential, and enjoyment-related benefits. Utilitarian benefits can be realized as a result of practical and functional experiences. Hedonic needs, expressed in the context of food products, are manifested in consumers who like indulging their desire for taste and texture and who tend to seek luxury and uniqueness. Utilitarian needs are strong among consumers who are concerned about food safety, nutritional value, and food healthiness. Though scholars agree that both types of benefits, hedonic and utilitarian, are important in defining consumer consumption experiences, previous research suggests that consumers tend to assign more weight to utilitarian benefits than to hedonic benefits (Chitturi, Raghunathan, and Mahajan, 2007; Kivetz and Simonson, 2002a). However, the relative importance of these benefit types depends on the individual, product, and context. For example, Kivetz and Simonson (2002a) noted that generally utilitarian needs tend to dominate over hedonic needs, except in situations where consumers decide that they deserve to indulge themselves. Chitturi, Raghunathan, and Mahajan (2007) found that hedonic needs are expressed more strongly than utilitarian needs only after the basic functional requirements are satisfied.

Chitturi et al. (2008) found that consumers experience different post-consumption emotions depending on the hedonic or utilitarian appeal of the product. Consumers whose promotion goals are realized by hedonic benefits tend to respond with post-consumption feelings of delight. Consumers whose prevention goals are met by utilitarian benefits tend

to express satisfaction. In contrast, the failure of a product to satisfy the consumer's expectations in the hedonic dimension tends to evoke dissatisfaction, whereas the failure to meet utilitarian needs leads to a feeling of anger. Consumers delighted by products are more likely to "indulge in word of mouth" and express desire to repurchase than their counterparts who are merely satisfied.

### **2.2.2. Product Attributes**

Product design attributes are an important component of product offerings (Srinivasan and Till, 2002) and have been found to play a dominant role in product evaluation among consumers with a high need for cognition (Zhang, 1997). Within food categories, product design attributes include food safety, nutrition, sensory attributes (e.g., taste, texture, appearance), and functional attributes, such as convenience. Along with process attributes (e.g., animal welfare, biochemistry, and organic production), product design attributes are considered intrinsic in nature. Since most of these attributes are difficult, even impossible to assess before purchase, they are mostly communicated by means of extrinsic cues, such as higher price, brand name, reputation of store, label information, and point of sale information.

The relative strength of attributes in influencing consumer food choice varies depending on the product type, food culture, and personal characteristics. In some studies (Tuorila, 1987; Tuorila-Ollikainen et al., 1986), taste was identified as the main predictor of consumer choice. Zanoli et al. (2002) found that distribution channel members perceived taste along with certification standards to be the most significant determinants of the

purchasing decision. Researchers (Bilkey and Nes, 1982) postulate that the inherent physical properties of a product are critical to a consumer's acceptance of the product. In contrast, Marshall (1995) views sensory measures as relatively weak cues in consumer choice behaviour. Though most customers point to taste as the main predictor of their food choices, taste is not well reflected in consumers' daily habits. Knight and Gao (2005) argue that "the first taste is almost always with the eye" (p. 7). Thus, packaging, labeling and other visual cues tend to determine initial attraction to a product (Imran, 1999).

The growing importance of product convenience has been noted by many scholars. According to Askegaard and Madsen (1998), social changes that have taken place in Western society are more likely to distort eating habits than the invasion of foreign products or retailers into the domestic markets. The model of the two-income family and the increasing pressures of life are used to explain the shift towards convenience foods in most affluent societies. Luomala, Laaksonen, and Leipamaa (2004) argue that the demand for convenience (e.g., fully or partially prepared foods, take-out meals, restaurant meals) erodes "social norms about food and meal composition that guided previous generations" (p. 565). Consumers deprived of the time necessary for meal preparation resort to convenience at the expense of aesthetic presentation and product variety (Candel, 2001).

According to Grolleau and Caswell (2005), an increasingly larger group of consumers "derive utility from using products produced with specific processes" (p. 3). Although the

difference in opinion about processes in the food industry can possibly be analyzed according to two food-related value conflicts, namely “novelty vs. tradition” and “technology vs. nature” (Warde, 1997), the perception of genetically modified (GM) foods as opposed to non-GM foods depends on the country. Whereas Americans tend to be open to the potential benefits of GM foods, Europeans are rather reserved toward GM products (Luomala, Laaksonen, and Leipamaa, 2004), viewing them as artificial and synthetic. Instead, European consumers along with Japanese consumers were found to embrace organic or eco-friendly products (Zhang, 2005).

Reliance on product attributes when selecting a food product is affected, to a large extent, by the consumer’s sensitivity to incentives provided by marketers (Singh, Hansen, and Gupta, 2005). For example, high responsiveness to price incentive characterizes the “conservative” segment identified by Brunso et al. (1996) and the “price-conscious” group recognized by Warde (1997). Since these segments are mostly preoccupied with economy, they tend to focus on lower quality food products and larger package sizes. However, even this segment may occasionally display extravagant behaviour when they choose high quality and exotic meals to convey sophistication (Luomala, Laaksonen, and Leipamaa, 2004).

### **2.2.3. Nature of Product Characteristics**

Signaling product attributes at point of purchase is critical from the marketing point of view. Most extrinsic cues, such as brand name, packaging, and price, communicate information about the product while it is still on the retailer’s shelf (Steenkamp, 1997).

The same is true for other extrinsic indicators specifically used in the food industry, including certification and labeling. Product attributes that can be determined prior to purchase are referred to as search attributes. Most intrinsic attributes tend to be either experiential or credence in nature (Akerlof, 1970). In other words, they do not provide information about the product prior to purchase. Experiential attributes can be ascertained during consumption, but credence attributes are often impossible to detect at all with the means available to consumers.

Many food products possess credence characteristics (Bureau et al., 1999), including healthiness, nutrition values, or localness. Agri-food goods tend to undergo processes that can be very important to consumers who are concerned about health, animal welfare, and environmental and ethical responsibilities. When evaluating credence or experiential characteristics, consumers are exposed to the risks of adverse selection and/or moral hazard (Grolleau and Caswell, 2005). Adverse selection refers to a situation where a consumer cannot distinguish a product with desirable characteristics from other products available on the market because the relevant information is available only to product producers. Lack of access to reliable information (i.e., information asymmetry) can lead a consumer into making a wrong choice. Moral hazard describes a situation where a food producer may claim to but does not in fact adhere to certain standards and practices, knowing that these practices are not verifiable by the consumer one way or the other.

Traditionally, marketers have employed marketing tools to change product attributes from experiential to search (Grolleau and Caswell, 2005). For example, in-store taste

testing, advertising, or transparent packaging revealing texture or color can change an experiential characteristic to a search characteristic. In an attempt to stimulate consumer demand for certain products, marketers have long used labels to communicate credence characteristics that are important to some consumers (Henneberry, 2004). However, the credibility of labels and consumers' confidence in the "truthfulness of the information provided by the labels and the certification standards behind a label" can have a significant impact on label effectiveness (Henneberry, 2004, p. 5).

Mandatory labeling imposed by many countries reflects a step forward in satisfying consumer demand for transparency. Coupled with the economic justification for labeling based on the notion of information asymmetry (Menapace, Colson, Grebitus, and Facendola, 2008), the need for transparency has been the main driver towards the introduction of mandatory product labeling demanded by both consumers and producers of high-quality goods. Consequently, a wide range of food labels, such as organic labels, eco-labels, and fair trade labels, characterized by various product assurance and certification indicators (Zhang, 2005), are now used to signal credence characteristics (Marchesini, Hasimu, and Regazzi, 2007). However, some scholars (Marette, Clemens, and Babcock, 2008) argue that "labels may entail trade distortions or impede the entry of producers who cannot comply with specific requirements" (p. 454). From a free trade perspective, "[o]rigin labeling for countries with weaker images as manufacturing nations is increasingly associated with discrimination against the exports of newly industrialized countries" (Usunier, 2006, p. 63). Thus, mandatory place-of-origin labels, including

country-of-origin labels (COOL) and geographical indicators (GIs), offer protection for domestic markets and may constitute a powerful barrier for foreign entries.

#### **2.2.4. COO in the Agri-Food Context**

Despite limited interest in agricultural and food products among scholars concerned with product-country image, no other product category is more closely linked with the geographic region of production than agricultural products and foodstuffs. As an integral part of the heritage of a particular culture, agri-food products appear in local food guides, tourist pamphlets, and place-branding materials. In some cases, the association between the quality, features, and reputation of a food product and its geographical area of production is so strong that the name of the product is awarded legal protection and rights (European Commission, Regulation 510/2006). For example, Parmigiano-Reggiano (Italy), Riz de Camargue (France), and Jersey Royal Potatoes (UK) represent food products that have been granted either Protected Designation of Origins (PDO) or Protected Geographical Indications (PGI). In countries or regions where the distinction of place has not received legal recognition, the association between a food product and its location is often protected by a brand name, such as “Café de Colombia.”

Besides agri-food products whose “made in” label, if not the name itself, conveys the tradition of excellence in a particular food category, most of the foods competing in international food markets do not evoke association with any specific country or region. Moreover, those agricultural products that compete on the basis of price rather than quality distinction tend to lack identification with a particular country of origin (Thode

and Maskulka, 1998). Generally, commodities such as corn, soybeans and oats, as well as raw materials or ingredients used in processed goods do not carry COO information over to the final products available to consumers. For example, Davies (2005) reports that Canadian meat exported to Japan is often sold there under a domestic Japanese brand, confusing or hiding the place of origin.

Since the agriculture and food products category combines a wide variety of foods, it is not surprising that the research findings concerning the importance of COO information in relation to consumer product evaluation vary considerably from study to study (Sweeney Research, 1999). Whereas the COO cue was found to have a significant impact on the assessment of specialty foods or high-profile agricultural food products (Felzensztein and Dinnie, 2006; Thode and Maskulka, 1998), the COO effect for low value, convenience items was confined to specific products, markets, and segments (Askegaard and Ger, 1998).

The degree of influence of place of origin on consumers' judgment of food products, as compared to other indicators of product performance, receives inconsistent support in the literature. For some food products in certain markets, the COO cue is the determining factor (Thode and Maskulka, 1998). In other contexts, the informational value of country of origin is relatively insignificant when controls for price or brand are considered. According to Felzensztein and Dinnie's (2006) research, place of origin is second only to price as the most important criterion for consumer choice of foods. Ahmed et al. (2004) showed that consumers in Singapore used the brand and price cues to a much larger

extent than country information in the evaluation of low-involvement products (i.e., bread and coffee). Knight and Gao (2005, p. 2) reported that Chinese consumers were more likely to rely on “brands, the reputation of intermediaries within the channel, and the reputation of retail outlets” than on the COO cue when assessing food products. Felzensztein and Dinnie (2006, p. 110) point out “the importance of brand recognition, strong generic marketing strategies as well as country of origin (COO) effect as fundamental marketing tools for agriculture products” (i.e., food products).

#### **2.2.4.1. Differentiation**

Differentiation is not a new concept in marketing. Yet, as a weapon against global hegemony, differentiation is now more appreciated than ever (D’Astous and Gargouri, 2001). As a major marketing tool (Kotler and Gertner, 2002), differentiation strategy has often been aimed at improving the perceived value of a company’s offerings (Kotler, 1993) by promoting the uniqueness of the intrinsic and extrinsic characteristics of its products. Thode and Maskulka (1998) hold that sustainable competitive advantage can only be achieved by strategies that are “truly differentiable and directly tied to the tangible quality of the product” (p. 380). Studies concerned with high-value food products (Felzensztein and Dinnie, 2006; Thode and Maskulka, 1998) consider place of origin as “the only unique and defensible competitive advantage that some products have” (Wilson, 2005, p. 285). In the wine market, consumer reliance on the ‘made in’ label tends to reflect positioning strategy, explicitly linking place of origin with product superiority based on heritage and authenticity (Felzensztein and Dinnie, 2006).

Thus, following the argument set forth by Thode and Maskulka (1998), country of origin can serve as a source of competitive advantage only if it is perceived by consumers as a powerful differentiator as well as a quality cue. In fact, this dual role of country of origin as a differentiator and quality indicator has been at the core of COO research, and it is well established that differential advantage can be enjoyed by a country with a favourable reputation in a specific product category (Askegaard and Ger, 1998; Papadopoulos and Heslop, 1993). For example, the ‘made in Italy’ label on products such as pasta serves as a valuable differentiator in the world of generic pasta products (Niss, 1996).

The internationally recognized examples of differentiation linked with long-held traditions and experience in the food industry of a particular country constitute a relatively small percentage of products available to consumers, being mostly confined to countries of the European Union. Even so, in an atmosphere of fierce competition, countries with either a weak reputation or lacking any reputation at all in the food industry have made successful entries into different food categories (e.g., the wine industry). The question posed by Bentley (2001) seems to be quite relevant for this area of inquiry: “How and why [do] these foods accrue special meaning – what makes them unique to particular groups of people?” (p. 180). The answer, in Bentley’s (2005) words, lies in “flavour,” “perception of purity,” or “significance of wealth or status.” While all those factors are deemed to play a role in consumers’ choices, many scholars trace the success of highly respected countries back to marketing initiatives anchored in place branding. Moreover, some scholars argue that differentiation strategy based on the COO reference is as important in the domestic market as it is abroad: “The reality is that a

country can only hope to compete with the world's best in their domestic markets by competing effectively with the world's best in that country's home market" (Baker and Ballington, 2002, p.166).

#### **2.2.4.2. Place Branding**

A number of international initiatives have been launched to communicate the origin of products by means of a country brand as opposed to a country-of-origin label. "Australia: the Brand," "New Zealand Way," and "Scotland the Brand," are examples of government-sponsored initiatives designed to brand the respected nations. The most relevant to this study are Australia's and New Zealand's branding campaigns, as they both proved to be of great benefit to the agricultural sector (Baker and Ballington, 2002; Clemens and Babcock, 2004; Gould, 1997). Moreover, both countries employed a "clean and green" platform to differentiate their products from those of their international competitors.

Baker and Ballington (2002) argue that differentiation is one of the key generic strategies for success in most industries and the only strategy for international players who cannot compete based on economies of scope and scale. Since very few can employ the strategy of cost leadership, the rest have to find a way to differentiate. In the agricultural sector, in particular, differentiation strategy seems to be the preferred approach. First, in most Western economies, the removal of government subsidies has made it very difficult for farmers to compete on the basis of price alone (Clemens and Babcock, 2004). Second, the shift from commodities to processed agricultural goods calls for marketing activities with

a strong focus on differentiation (Innes, Kerr, and Hobbs, 2007). Finally, there is some evidence that most international markets are willing to pay a premium for environmentally-based differentiation which, in consumers' minds, ensures a higher standard of food safety (Chang and Kristiansen, 2006). Consequently, to promote their agricultural products in trade policies and international programs, governments in many countries adopt differentiation strategies based on the distinction of place (Innes, Kerr, and Hobbs, 2007; Josling, 2006).

#### ***2.2.4.2.1. New Zealand***

In 2002, New Zealand embarked on the challenge of building and promoting "Brand NZ". As the promoters stated, "[T]he objective of Brand NZ [is] to enhance New Zealand's national brand to better differentiate New Zealand internationally; support key sectors; and enhance New Zealand's established/emerging areas of comparative advantage" (Evaluation of Brand NZ, 2006). While the New Zealand brand projected a recognizable image of the country as 'clean and green', it also highlighted the capabilities of various sectors by promoting a vital, new image of New Zealand as a creative, innovative and technologically advanced country. According to the research commissioned by the Ministry for the Environment, New Zealand's environmental image "is likely to be worth hundreds of millions, and possibly billions of dollars per year" (Our clean green image: what's it worth?, 2001). And they explain why:

*Imagine that you live in Asia, or Britain or perhaps the US. You have driven home through the smog to your cramped apartment, and as you eat your dinner you see on TV images of snow-capped mountains reflected in crystal-clear unpolluted lakes. Cows graze in lush green pastures, native birds sing in the forests, waves thunder onto deserted beaches, and happy healthy people are having fun. It is New Zealand, and it looks like*

*paradise. So you think to yourself, I want to eat food that comes from there. I want to go there on my holiday.*

As pointed out by the vision statement above, consumer expectations associated with New Zealand's scenery and landscape are highly relevant to sectors such as tourism and primary products (e.g., the lamb industry). The same image, however, was found to be irrelevant or even an impediment to success in other industries that require association with technological sophistication (Evaluation of Brand New Zealand, 2006). Beverland and Lindgreen (2002) report that some organizations are more inclined to use Brand NZ than others. Where there is lack of fit between the desired image and the image promoted by the state, companies tend to emphasize their own reputation rather than COO. According to Jaffe and Nebenzahl (2002), the problem is not unique to New Zealand. It is as difficult for New Zealand to develop a national brand that would successfully promote its many primary industries (e.g., lamb, rugby, pharmaceuticals and high-tech) as it is for Scotland to promote a cohesive image that would resonate with traditional as well as new sectors (e.g., whisky vs. high-tech industries). Skaggs et al. (1996) argue that "using CO as a means of differentiating products" is still a challenging proposition since "so little is known about the association consumers perceive between CO and manufactured food products" (p. 593).

Years after New Zealand's initial effort to promote and differentiate the national brand, the government has realized that the environment supports economic opportunities (Gould, 1997). With this realization comes another: that the association between the environment and safety and quality could easily be dispelled if consumers were to seek confirmation of their beliefs about New Zealand's environmental purity. The reality is

that much of New Zealand's agri-sector employs standard global practices (Our clean green image: what's it worth?, 2001), which may belie the image of "clean and green."

#### **2.2.4.2.2. Australia**

The 'clean and green' image promoted by the Australian government in Asian markets since 1993 reflects the effort to capitalize on the perception of the entire country as a vast expanse of unspoiled nature. According to Chang and Kristiansen (2006, p. 104),

*"The general rationale behind using the 'clean and green' image as a marketing strategy is that if a state or country has a natural environment that appears visually 'clean and green', then what it produces also may be perceived to be 'clean and green', and consumers, those overseas in particular, will want to buy, and pay a premium for, the goods it produces."*

Though the campaign has been considered successful in promoting certain Australian food exporters, such as the beef producers, (Zoe, 2011), it has generated criticism at home and abroad. The main argument against the initiative was that the conveyed image cannot be sustained in the long run because the environmental claims are not entirely true. Critics argue that "the key to success is not a 'clean and green' image but a 'clean and green' credential" (Chang and Kristiansen, 2006, p. 111). Moreover, Tregear and Gorton (2005) assert that "in the case of origin-branded agri-foods, consumers have expectations about what these brands represent not only in terms of physical quality, but also in terms of production scale (i.e. small-scale), land use pattern (i.e. extensive and low input), processing methods (i.e. hand-crafted, artisan) and ethos (reflects the culture and traditions of the area)" (p. 15).

#### **2.2.4.3. Domestic Campaigns**

In accordance with domestic country bias, local food products tend to be preferred over their imported counterparts in most developed countries (Elliot and Cameron, 1994; Sharma, Shimp, and Shin, 1995; Shimp and Sharma, 1987; Wall and Heslop, 1986). Ethnocentric consumers, in particular, feel compelled to buy domestic products (ElEnein and Phau, 2005). Yet in countries such as the U.S., where consumers tend to express their content with domestic products (Sternquist and Phillips, 1991) and “dependence on imported agricultural products remains low,” the agri-food trade balance has been gradually declining over the last few decades (Gehlhar et al., 2007).

Numerous initiatives designed to promote the quality of the local food culture (Askegaard and Kjeldgaard, 2007) have been documented all over the world. Undertaken in the midst of globalization pressures, these initiatives seem to be driven by reactive rather than proactive reasoning. Facing invasive penetration of their domestic markets by multinational corporations (Baker and Ballington, 2002) coupled with unemployment and trade deficits (Fischer and Byron, 1997), many countries implemented “buy domestic” initiatives to counter the impact of the millions of dollars spent by international food groups to advertise their products (Kinnucan and Myrland, 2008). “The initiatives [were also] seen as ways to rediscover the diversity and quality of the local food culture and to illustrate renewed reflexivity over relations between food and places spurred by globalization processes” (Askegaard and Kjeldgaard, 2007, p. 138).

The strategies designed to persuade people to support local economies by buying products made at home vary considerably from country to country. While they differ in scope, incentives, and sincerity of the respective governments (Aronczyk, 2008), most of them have one thing in common: they appeal to emotions and patriotism (Granzin and Painter, 2001; Pullman, Granzin, and Olsen, 1997). According to Granzin and Painter (2001), “buy domestic” campaigns conducted in countries such as the United States, Portugal, Japan, France, Canada, and Mexico relied on the support of social norms in the hope of eliciting ethnocentric responses.

Most domestic campaigns, regardless of the product/industry focus, generated mostly skepticism (Ettenson, Wagner, and Gaeth 1998; O’Shaughnessy and O’Shaughnessy, 2000), were deemed ineffective, and were criticized for their patriotic tone (Baker and Ballington (2002) that could potentially harm the economy. The argument was that, like other propaganda-driven campaigns, they encourage retaliation and risk alienating trading partners. Moreover, in this line of thinking, standards of living and industrial efficiency depend on consumers’ purchasing decisions being determined by the best value for their money rather than sentimental considerations (Black, 1995). From another viewpoint, the lack of success attributed to ‘buy domestic’ campaigns was at least partially due to the “reluctance to use the country of origin/product country image effect in domestic markets” (Baker and Ballington, 2002, p. 157). According to Aronczyk (2008, p. 44), this reluctance reflected the trend of “global nationalism,” a new paradigm promoted by most governments.

Among domestic initiatives undertaken over the last few decades, the Australian “buy domestic” campaigns in 1986 and 1999 generated the most attention. Recognized as successful (Baker and Ballington, 2002), they became blue prints for “buy domestic” campaigns promoted in other countries, such as New Zealand and Scotland. In the eyes of many observers and critics, ‘buy Australian’ campaigns represented a comprehensive effort to create a national brand at home and abroad. The campaigns introduced kangaroo logos; the slogan, “Think Australian - Buy Australian - Be Australian” (Advance Australia Foundation, 1992, p. 4); incentives to choose Australian products over imported ones – for instance, by offering points that could be redeemed when buying Australian products; and were endorsed by the government, Australian manufacturers, and trade unions (Juric and Worsley, 1998). In contrast to earlier campaigns in other countries, the main intent of the Australian campaigns was to outperform imports (Baker and Ballington, 2002). Interestingly, the domestic campaign was not based on the ‘clean and green’ image promoted abroad, particularly in food markets (Chang and Kristiansen, 2006).

The follow-up studies of the Buy Australian Made campaign (Sweeney Research, 1999; Da Rin, 2003) pointed to the effectiveness of the initiative and ongoing positive changes in consumers’ attitudes towards domestic products. According to Sweeney’s report (1999) which was commissioned by the Commonwealth Department of Industry, Science and Resources, 88% of consumers preferred to buy Australian-made products whenever possible, and 70% of consumers searched for products made in their homeland. Over two-thirds (77%) of consumers were happy to pay extra for goods made in Australia.

However, the importance consumers placed on country of origin varied depending on product type (Sweeney, 1999). Whereas 83% of consumers considered country of origin important when buying fresh foods and somewhat fewer (72%) when buying packaged foods, 63% relied on country-of-origin information when choosing clothing and footwear. The 'Australian Made' logo was most compelling in the purchase of food products. According to the study conducted by Elliott, Cameron, and Acharya (2001), a positive predisposition among Australians towards domestic products was supported only in the food category, in this case represented by pineapple. In contrast, Japanese cars and U.S. jeans were preferred over the domestic equivalents. Finally, in their study commissioned by the Advance Australia Foundation, Fischer and Byron (1995) highlight the "contrast between consumers' intentions and their actions" (p. 177). In a later paper (i.e., Fischer and Byron, 1997), they noted a frequent pattern reported by many Australian consumers:

*While a majority of the respondents indicated that they viewed country of manufacture as being important, they were much more likely to select the Australian product if the Australian product represented good value for money, i.e., it did not involve additional cost to buy Australian. Results also indicate, however, that there was a significant number of respondents who acted on the country of manufacture information and made it part of their decision process. (p. 91)*

### **2.3. PACK MEMBERSHIP**

'Pack membership' is a term proposed in this study to describe a manifestation of the human propensity to categorize, generalize, and contrast as applied to countries in a complex international environment. "Research in psychology indicates that what people have learned about companies, industries, and brands may be used to make inferences about other companies to which these are linked" (Dowling, 2001). National brands

would be subject to similar inferences. In line with general principles of cognitive science theory (Shepard, 1987), a country may take on, in the consumer's mind, additional characteristics of another country with which it already shares certain characteristics. For example, Anholt (2005) attributes the low score for culture and high score for investment potential that Canada received in his National Brands Index to its geographical proximity to the U.S. and the common language shared by these neighbouring countries.

The pack membership phenomenon finds support in theories based on the notion of the similarity of stimuli. The concept of similarity is a key theoretical construct in psychology (Medin, et al., 1993), understood to be essential to many cognitive processes and theories of categorization and concept learning (Hem and Iversen, 2002). According to Tversky (1977), similarity "serves as an organizing principle by which individuals classify objects, form concepts, and make generalizations" (p. 327). Various derivatives of categorization theory have been applied in the social sciences to demonstrate and explain the formation of cognitive groupings that affect people's perception of the world (Duncan, 1976). Unification of those theoretical approaches allows for an appreciation of the cognitive processes that accompany the pack membership effect at different structural levels.

The pack membership phenomenon in action can be demonstrated by a parallel example at the product level provided by Knight and Calantone (2000). The scholars asserted that Japanese consumers' experience of General Motors (U.S.) products encouraged inferences about Ford (U.S.) products, with which they were unfamiliar. The perception

of the poor quality of cars made by General Motors could consequently have been transferred to the evaluation of cars made by Ford. The empirical support of the image transfer between brands has been provided by a number of studies (e.g., Aaker and Keller, 1990; Mittal and Tsiros, 1995; Janakiraman, Sismeiro, and Dutta, 2009). For instance, Mittal and Tsiros (1995) found that the COO association of reference brands in the choice set affected consumer judgments about the target brand. Consequently, the target brand evaluation (i.e., likelihood to purchase the target brand) was biased toward the reference brand. The scholars explained the transfer of image between brands by their membership in the same category of items being displayed in the same pamphlet. In this particular study, the target brand was specifically selected so that its COO had no reference in the product category (i.e., desk lamps).

While explicit efforts to employ categorization theory in the COO research are rare (e.g., Alden, Hoyer, and Crowley, 1993; Barta et al., 2000; Lee and Ganesh, 1999; Maheswaran, 1994; Merz et al., 2008; Samiee, Shimp, and Sharma, 2005; Shimp, Samiee, and Madden, 1993), some of the key assumptions underlying COO theory are inherently based on the principles of categorization. For example, the concept of domestic bias was developed on the foundation of self-categorization theory (Tajfel and Turner, 1986; Turner et al., 1987). Similarly, the bias towards developed countries can be explained by the tendency of consumers to resort to a simplistic categorization of nations as belonging to either developed or developing clusters. Moreover, the COO literature offers many examples of how, in consumers' minds, countries are conceptually

associated according to their perceived country-related characteristics (e.g., Nishina, 1990; Usunier and Cestre, 2007).

### **2.3.1. The Theory of Categorization**

Categorization as a means of simplifying the environment has been used by psychologists, biologists, chemists, and linguists, among others. According to Rosch and her colleagues (Rosch et al., 1976), the creators of prototype categorization theory, “[o]ne of the most basic functions of all organisms is the cutting up of the environment into classifications” (p. 383). As a kind of information-processing (heuristic) shortcut, categorization is a cognitive tool aimed at arranging information into categories by treating some non-identical stimuli as equivalent (Rosch et al., 1976; Rosch, 1978).

“To cognize is to categorize: cognition is categorization” (Harnad, 2005, p. 1). The categorization process is invoked to reduce complexity. By segmenting the environment into manageable units, people reduce the amount of information to match their individual processing capacity (Gutman, 1982). According to the simplicity principle, the cognitive system seeks simplified representations of available information (Chater and Brown, 2008). “When faced with a set of stimuli people often organize them in clusters to reduce information load and facilitate further processing” (Tversky and Gati, 1978, p. 1). Thus, the complexity of the external world necessitates a simplification process to transform the confusion of information overload into manageable ‘iconic images’, which are stored in the memory (Neisser, 1976).

Once categorization takes place, it has an impact on an individual's perception of the world (Duncan, 1976). Using their knowledge of category membership, individuals can effectively and efficiently predict attributes in the environment around them (Merz et al., 2008) and, on the basis of preexisting categories, make inferences about new objects (Makin, Cooper, and Cox, 1996; Murphy and Ross, 1999). Moreover, and of significance to this study, the "categorization problem is not determining what kinds of things there are, but how it is that sensorimotor systems like ourselves manage to detect those kinds that they can and do detect: how they manage to respond differentially to them" (Harnad, 2005).

In classical Aristotelian thought, the similarity of or resemblance between classified items constitutes the core principle of categorization. Objects belonging to the same category are expected to have certain properties in common (Lakoff, 1987). Rosch and Mervis (1975) also argue that people tend to categorize an object on the basis of its "similarities rather than its individuality." Thus, in categorization involving stereotyping, variations among group members are often overlooked (Allport, 1954; Katz and Braly, 1993). However, the ability to categorize does not preclude the ability to particularize. While using predetermined categories to classify stimuli, people are perfectly capable of detecting the unique characteristics of those same stimuli (Billig, 1985). A different input results in a different output, and "that's where the 'differential' comes from" (Harnad, 2005, p. 3).

Prototype theorists argue that stimuli are organized in the memory using hierarchical structure (Rosch et al., 1976). The basic level of categorization, which is positioned in the middle of a general-to-specific hierarchy, is the most efficient one in the cognitive sense (Rosch et al., 1976; Mervis and Rosch, 1981). At the basic level, the informational contribution of attributes in their separate categories is optimal. Consequently, within-category similarity, as compared to between-category similarity, is maximized. At the lowest level, the subordinate level, very little discrimination between categories is present. The superordinate level, at the top of the hierarchy, is the most abstract one, where items share relatively little commonality (Rosch et al., 1976). Thus, the hierarchical structure consists of levels that vary in degree of abstraction: "If we accept that all categorization, great and small, depends on selectively abstracting some features and ignoring others, then all categories are abstract" (Harnad, 2005, p. 3).

Though some scholars examining stereotypical social categories postulate that the categorization process is rigid and inelastic, many other scholars dispute the inflexible nature of classification. A categorization scheme is not only subject to changes in cognition but is also vulnerable to radical environmental changes (Makin, Cooper, and Cox, 1996), as well as changes that naturally occur over time (Harnad, 2005). Categorization can also vary depending on context and culture (Zagal et al., 2005). Rooted in individual experience, classification is a somewhat arbitrary process. People can only categorize on the basis of the attributes they can perceive, and the characteristics that they most easily perceive tend to be of greater significance to their categorization process (Johnson, 1985).

Categorization is referred to as a kind of dynamic system (Harnad, 2005, p. 3). As such, “categorization is intimately tied to learning” (Harnad, 2005, p. 3). Through trial-and-error experience guided by constant feedback, classification can be altered to reflect cognitive input. In Harnad’s words, “Learning occurs when a system samples inputs and generates outputs in response to them” (2005, p. 1).

In contrast to the classic Aristotelian view of categorization, prototype theory postulates that categories are not necessarily discrete, nor are they mutually exclusive. Membership gradient is a term used in classification research to describe the fuzzy boundaries defining membership in some categories. When no clear boundaries can be determined, categories may have degrees of membership. In such cases, category membership is unpredictable as it is usually influenced by context and communicative purpose (Likoff, 1987). Low-degree members of categories tend to share attributes with members of other categories with correlated characteristics (Rosch and Mervis, 1975). Consequently, some researchers (McClosky and Glucksber, 1979) use a probabilistic process to allocate members to various categories.

Assuming that membership in a certain category is secured by rational criteria, members of the category would be expected to be cognitively equivalent (Mervis and Rosch, 1981). However, according to research in psychology, this seems not to be the case. Some category members are more typical than others, and these typical members serve as prototypes that consistently represent the whole category (Mervis and Rosch, 1981;

Sujan, 1985). The representativeness of non-typical members (e.g., unique hue points for a certain color) lies in the eye of the beholder. Some individuals consistently choose non-typical members as most representative of the category, while others do not (Mervis and Rosch, 1981). Consequently, recognition of representativeness gradients (from most to least representative exemplifiers) is one of the most important factors in the learning of categories and the development of category expectations (Mervis and Pani, 1980).

### **2.3.2. Problems with Categorization**

Some scholars (Tversky and Kahneman, 1974) highlight the fact that categorization may lead to systematic errors and biases in judgment. Cognitive bias in the form of stereotypical assumptions has been well documented in the social science literature (Howitt, et al., 1989); for example, categorization was found to lead to oversimplification in the perception of members of ethnic and national groups (Katz and Braly, 1993). A problem with the inferential utility of classification was pointed out by Murphy and Ross (1999), who observed that since many objects or stimuli are cross-classified, it is not clear how people combine the informational content of each category to make inferences.

In the contrast model, a set-theoretic matching model, Tversky (1977) challenges the soundness of the basic assumptions of similarity theories. According to Tversky's symmetry axiom, one of the metric assumptions is often violated. For example, the similarity of North Korea to Red China was found to be greater than the similarity of Red China to North Korea. The findings were explained by Tversky (1977) using Rosch's (1975) notion of prototype: Red China is more likely to be used as a referent or search

target (i.e., prototype) of the shared category than North Korea is. However, a change of referent would influence the relative importance of the evaluated attributes (Eysenck and Keane, 2000). Further, problems with the triangle inequality axiom were shown by Tversky (1977) to be based on the similarity relations of three stimuli, namely Jamaica, Cuba, and Russia. Perceived similarity between Jamaica and Cuba because of geographic location and similarity between Cuba and Russia triggered by their ideology and politics do not imply similarity between Jamaica and Russia.

### **2.3.3. Categorization in the Marketing Literature**

In the field of marketing, Kotler and Gertner (2002) argue that once people form mental representations of the world around them, they adjust or fit new information to the existing cognitive structure. Kotler and Gertner (2002) explain this tendency as being due to “sloppy” cognitive processors that are present, in particular, in low involvement situations. People challenge their own knowledge structures only when misrepresentation results in a cost or they see that benefits would result from the reconstruction of their cognitive schemas. Otherwise, confirmation bias dominates the decision making process.

Gutman (1982) proposed that the categorization process could explain consumer thinking about specific product alternatives. He argues that products are categorized into product classes by means of a cognitive element referred to as a distinction. Thus, two products can be compared on the basis of one distinction even though they differ according to other distinctions. Gutman (1982) defines distinctions as the dichotomous ends (e.g., hot vs. cold) of a spectrum (e.g. temperature), which serves as a continuum along which

objects may be compared. Depending on the perceived similarities or differences between products, they can be grouped into as many categories as the number of products being evaluated. However, if products are perceived as similar along a particular dimension considered by consumers, they are all placed in one category.

Ratneshwar, Barsalou, Pechmann, and Moore (2001) investigated the effect of consumer goals on the perception of category membership of food products. Both personal goals (e.g., health) and situational goals (e.g., convenience) were found to impact judgments regarding the similarity of evaluated products. Whereas goal-appropriate products were perceived as more similar, discrepancies in the usefulness of pairs of products for goal fulfillment reduced the perceived similarity between the products under consideration. The findings of the study challenge the properties of categorization postulated by categorization theorists (Johnson, 1986; Rosch, 1978; Rosch and Mervis, 1975; Tversky, 1977). Ratneshwar et al. (2001) argue that goal-derived categorization is less rigid in similarity representations compared to the stable, taxonomy-driven categorization traditionally assumed in the categorization literature. However, other studies (Ross and Murphy, 1999) point to the consistency of taxonomic categories that cannot be obtained using goal-driven categorization. Lange (2005) argues that goal-derived categories are more suitable than taxonomy-derived categories when applied to brand complementarities.

Without making specific references to the categorization literature, Loken, Ross, and Hinkle (1986) apply the concept of the physical similarity of products to the inference of

the source or origin of those products. They found that the perception of product similarity may result in “the misattribution of source or origin or identity by the consumer” (p. 195). For example, consumers tend to assume that two brands offering products with similar physical attributes originate from the same company or companies with a business connection. Interestingly, the confusion about origin takes place even for moderately similar products.

#### **2.3.4. Categorization in the COO Literature**

The explicit application of categorization theory is sporadic in the COO literature. Nevertheless, researchers exploring the principles of categorization assert that the approach provides a framework to deal with traditional issues from a different angle (Samiee et al., 2005). For example, the allocation of brands to different originating countries yields information on features or attributes that are diagnostic of a particular category. Thus, “COO images can be viewed as a representation of the perceived attributes of prototype brands from each COO, whereby a set of attributes about a specific product category in a country is derived from a summary of known brands in this product category and country” (Balabanis and Diamantopoulos, 2008, p. 44). Moreover, the hierarchical nature of categorization outcomes serves as a basis for inquiry concerned with the relationships between various categorical constructs (Lee and Ganesh, 1999).

Research concerned with brand classification, specifically that of Samiee, Shimp, and Sharma (2005) and Balabanis and Diamantopoulos (2008), was based on the assumption that consumers sensitive to the COO cue would assign brands to the categories

representing their respective national origins. It was expected, however, that at the basic categorization level, brands would be roughly classified as either foreign, domestic, or having a regional origin (e.g., somewhere from Asia) (Samiee, Shimp, and Sharma, 2005). Interestingly, Samiee et al. (2005) found modest recognition of the national origins of mostly well-known brands among U.S. respondents. These findings were later supported by Balabanis and Diamantopoulos (2008), whose research, conducted in the U.K., revealed poor classification of brands on the basis of COO information. While Samiee et al. (2005) argue that consumers make judgments about brand similarity using mostly linguistic cues (e.g., Japanese-sounding brand names), Balabanis and Diamantopoulos (2008) point to the COO reputation in a certain product category as the best predictor of correct brand identification. Balabanis and Diamantopoulos (2008) also noted the negative impact of brand name incongruence (e.g., Asian-sounding U.K. brand names, such as Hinari and Matsui) on brand classification.

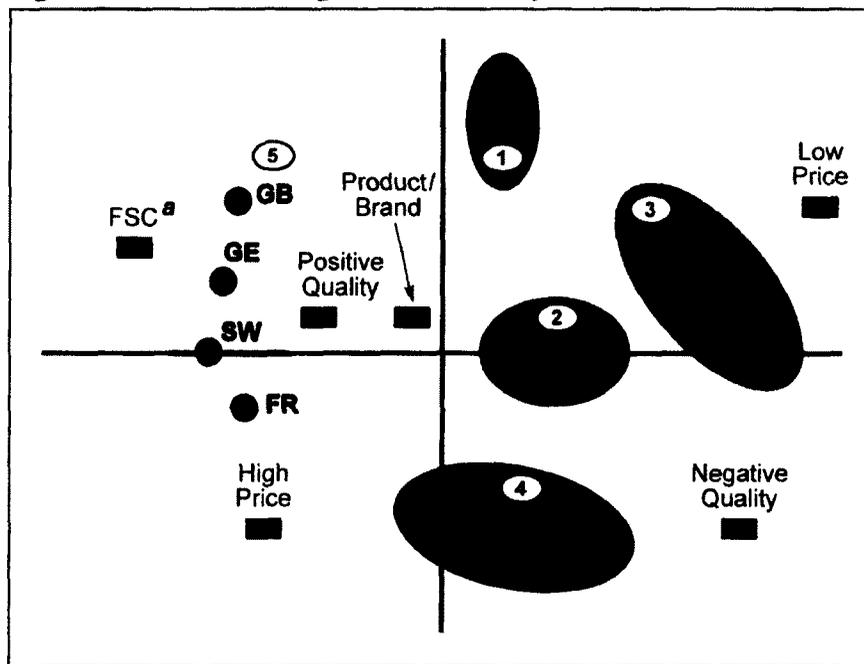
Lee and Ganesh (1999) use categorization theory to explain the relative importance of brand image and country image (further separated into overall image and specific product image) in consumer evaluation of binational brands. Since all constructs serve as categorical cues for consumer information processing, their relative effects depend on their location in the hierarchical structure. Information about the country is more basic or general; therefore its retrieval from memory is likely to precede the retrieval of information about constructs at higher levels of the hierarchy, such as specific product image. Consequently, attitudes at the country level dominate and shape attitudes at other levels of the hierarchy.

The research conducted by Shimp, Samiee, and Madden (1993) represents a unique contribution to the area of inquiry pursued by the present study. Based on consumer cognitive structures relating to individual countries and their associated products, the study classifies 11 countries in 5 categories. In response to the question, “What comes to mind when you think of products made in [name of country],” American respondents expressed their thoughts about surveyed countries, relying on their memory of a single product or multiple products across many product categories. Their responses were further classified into 6 exclusive and exhaustive content categories, namely: 1) products and/or brands; 2) positive quality; 3) negative quality; 4) high price; 5) low price; and 6) FSC (fashion, styling, or craftsmanship).

One of the findings of the study was that cognitive structures varied significantly by country and that heavy exporters generated more responses than countries with low international presence. Thus, Japanese products evoked more comments and opinions than products of any other country included in the study (i.e., France, Germany, Great Britain, India, Iran, Japan, Korea, Russia, Switzerland, United States, and Yugoslavia). Moreover, Japan as a country associated with high-quality and low-priced products, was placed in a category of its own. In contrast, all western European countries (France, Germany, Great Britain, and Switzerland) occupied the same cluster. Nevertheless, the frequency of comments on product attributes differed considerably depending on the country, with Switzerland being the leader in positive quality and France in high price and FSC (fashion, styling, or craftsmanship). Interestingly, the United States and Russia occupied the same cluster, characterized by high price and negative quality attributes

Consistent with the prejudice towards developing countries, Yugoslavia and Korea shared a similar position defined by low price and negative product quality. The remaining cluster was occupied by India and Iran. The composition and location of all clusters is depicted in Figure 1. This figure was derived via correspondence analysis and depicts underlying dimensions based on six types of “product-related thoughts” that were used to cluster countries into common cognitive categories. The dominant dimension accounting for a significant percentage of the original variance was described by the authors as “low price and negative quality at one extreme and high price and positive quality at the other” (p. 325).

**Figure 1. Product Thoughts and Country Clusters**



<sup>a</sup> Positive fashion, styling or craftsmanship ascriptions

GB = Great Britain	IR = Iran	SW = Switzerland
GE = Germany	JA = Japan	US = United States
FR = France	KO = Korea	YU = Yugoslavia
IN = India	RU = Russia	

Source: Shimp, Samiee, and Madden (1993)

### **2.3.5. Basis of Pack Membership**

The COO literature recognizes the impact of association between countries, either as neighbours sharing a regional image or as business partners sharing similar standards. A country's membership in what is often termed an 'elite' group of highly developed industrialized countries is recognized as a most important predictor of consumers' positive perception of products originating in that country. Being a member of an affluent society whose products are associated with prestige and advanced manufacturing capabilities was found to be an asset above and beyond country image (Dichter, 1962). According to Crawford and Lamb (1981), "Willingness to buy foreign products is significantly influenced not only by the individual country, but also by the existing levels of economic development and political freedom" (p. 30). Wang and Lamb (1983) noted the existence of a hierarchy of countries based on their economic, social and cultural systems. The quality of products originating in a country positioned lower in the hierarchy was perceived as inferior compared to the quality of similar products from a more highly ranked country.

More recently, some scholars have noticed that consumers' sentiments towards products from affluent societies tend not to discriminate among individual members of the pack. Kaynak and Kara (2002), for instance, found that Turkish consumers made little distinction between products imported from developed countries, specifically Western Europe, U.S., and Japan. These consumers see products originating in these countries as sharing similar attributes, such as well-established brand names and being technically advanced, expensive, and luxurious. Moreover, Turkish consumers attributed good style

and appearance to products coming from these developed countries, qualities conveyed to them through intense advertising campaigns. Lack of discrimination among products imported from different Western countries was also documented in China by Knight and Gao (2005). The authors observed that the appeal of Western brands in general rather than any individual country image dominated consumers' evaluation of products.

Paraphrasing George Orwell, some countries are more equal than others. While the most frequently acknowledged hierarchy in the COO literature is based on the level of economic development, there are other bases that trigger between-country comparisons (Samiee, 1994). Some, such as culture, location, wealth (e.g., GDP and sources of economic prosperity), size of economy, foreign and domestic policy, and land attributes (e.g., purity) are relatively stable characteristics defining the profile of a country. Others, such as belonging to a formally defined group of countries for economic trade or military purchases (e.g., EU, NATO, and NAFTA), which can bring about desired associations, can be acquired by a means of membership.

#### **2.3.5.1. Economic Development**

The positive bias towards countries enjoying relatively more advanced levels of economic development has been asserted by scholars since the inception of COO research. Schooler (1965) found that consumer perception of Mexico's economic development compensated for the political hostility toward its products, in comparison to products originating in the less developed countries of Central America. A number of scholars (Al-Sulaiti and Baker, 1998; Chasin and Jaffe, 1979; Heslop and Papadopoulos,

1993; Papadopoulos, Heslop, and Bamossy, 1990) empirically validated the claim that goods made in developing countries are considered inferior to goods produced in developed countries.

A country's level of economic development has been considered a key basis of COO evaluation (Pharr, 2005; Verlegh and Steenkamp, 1999). According to Pappu, Quester, and Cooksey (2007), the economic level of development of a country constitutes the foundation of the macro-level conceptualization of country-of-origin. Chasin and Jaffe (1979) pointed to "the degree of economical development" or "economic stability" as one of the most consistent biases found in the literature on COO. Batra et al. (2000) argue that, for developed countries, an image of their high level of economic development is associated with the country-of-origin information, and this serves as a risk-reducing property in product quality evaluation. From the perspective of consumers in a developing country, it is also associated with desirable lifestyles (Batra et al., 2000). The differences in customer confidence in goods produced in developed versus developing countries have been captured by numerous studies (Ettenson, 1993; Hallen and Johanson 1985; Juric and Worsley, 1998; Kaynak and Cavusgil 1983; Lumpkin and Crawford 1985; Wang and Lamb 1980, 1983).

Using the concept of hierarchical structure in categorization, the level of economic development is expected to be a very powerful factor in discriminating between developed and developing countries. However, at the superordinate level of classification, developed countries may have little in common. For example, Canada and

the U.S. may be classified into different categories because of the perceived sources of economic development. While the U.S. may be seen as one of the most industrialized country in the world, “Canada [is] still perceived by potential foreign investors to be a traditional resource-based economy, an image that [is] not synonymous with innovation and dynamism” (Potter, 2004, p. 58).

#### **2.3.5.2. Non-economic Indicators of Prosperity**

While there is a significant positive relationship between economic development and non-economic indicators of well being, some consumers may consider these country attributes as only partially overlapping. The perception of similarity between countries based on non-economic measures of performance depends to a large extent on the indicators of prosperity. Very different information may be conveyed by membership in the G7, or performance according to world-wide indices such as GDP, the UN Human Development Index, and the poverty index. For example, Canada’s membership in the G7 (also referred to as the Haley Group) may lump the country in with the other developed nations in the group – France, Germany, Italy, Japan, the United Kingdom, and the United States. A different classification of Canada with respect to the same countries would be expected if we were using a human well-being reference, such as the United Nation’s Human Development Index (HDI). Life span and health, education level, and standard of living (i.e. real GDP per capita) are criteria that place Canada among countries such as Norway, Sweden, Australia, and the Netherlands. These criteria are significant differentiators of Canada from the U.S., which is usually ranked last on the HDI among developed countries. Finally, in terms of relative poverty, Canada is more

similar to Portugal and Greece than to the countries with whom Canada usually shares the top places in the quality of life survey. According to a 2004 report published by the Organization for Economic Co-operation and Development (OECD) measuring the poverty rate among 17 OECD members, Canada stood 12<sup>th</sup> in equality of income distribution, while the U.S. was 17<sup>th</sup>, both far behind the top-ranked country, Sweden.

#### **2.3.5.3. Culture**

Some researchers (Crawford and Lamb, 1981; Heslop et al., 1998; Wang and Lamb, 1983; Samiee, 1994) noted that customers are influenced in their evaluation of foreign products by cultural similarity between their home country and the source country of the imported products. There are also indications that respondents are more likely to recognize a culturally similar country as a quality leader than a culturally dissimilar country. For example, Klein, Ettenson, and Morris (1998) found that Germany is to European consumers what Japan is to Asian consumers in terms of superior manufacturing practices that result in high quality products. Furthermore, the impact of cultural climate and belief systems on the perception of similarity between countries was noted by Han (1989) and Meng, Nasco, and Clark (2007).

Cultural factors are most frequently used in studies of domestic-country bias, where similarities in culture between the domestic country and a foreign country mitigate the hostility towards imported goods (Lantz and Loeb, 1996; Watson and Wright, 2000). Thus, cultural similarity as a grouping variable may play a significant role in explaining attitudes towards various clusters of countries formed along a continuum defying cultural

commonality or distinctiveness. For example, as a member of the commonwealth, Canada is likely to share membership with Australia in a category associated with British culture. Alternatively, Canada may be placed in a different category by consumers who perceive Canada as an ambassador of French culture.

#### **2.3.5.4. Geographical Location**

“People often describe things that are similar as close and things that are dissimilar as far apart” (Casasanto, 2008, p. 1047). According to Dynamic Social Impact Theory, similarity between neighbours results in social clustering (Latane and Bourgeois, 1996; Van Alstyne and Brynjolfsson, 2005). By the same token, geographical proximity may convey important information relevant to between-country similarity judgments. Being neighbours may encompass similarities that have been accumulating over years or centuries and mask dissimilarities arising from different political or socio-economic orientation. For example, as Anholt (2005) observes,

*Canada and the United States have no near neighbours apart from Mexico, so it is perhaps not surprising that most people's distinction between these two largely English-speaking countries is rather hazier than it should be. The consequence of this is that Canada may take on some US characteristics by default.*

Other examples of pairs of countries that are regarded as similar because of their geographical proximity include Jamaica and Cuba, Sweden and Norway, and Belgium and Holland (Tversky, 1977).

Anholt (2005) argues that geographical proximity has a stronger unifying effect in the eyes of consumers geographically distant from the evaluated countries than for those

nearby. Thus, the Netherlands and Belgium may be perceived as similar by someone from Asia, but as quite different by a European. Moreover, geographic distance or proximity is also likely to be confounded with degree of knowledge about the evaluated countries. According to the classification literature, it is the individual's response to particular stimuli that accentuates either similarities or differences between the two countries (Eysenck and Keane, 2000).

#### **2.3.5.5. Environment**

Despite the distance of their geographical separation, Canada and Australia may be connected in the minds of consumers by their environmental purity (Anholt, 2005), an association that may have little to do with the standing of either country on environmental issues. It is more likely that their shared image along the environmental dimension reflects similarities in their large land area, natural resource endowments, or low population density. In fact, both countries are perceived as vast and uncontaminated. "Canada and Australia are blessed with abundant natural resources and the structures of both economies are dominated by the primary sector: 55% of Australia's exports are in the form of raw materials, compared with 46% for Canada" (Harchaoui, et al., 2003, p. 1). The similarities between these two countries assumed as a result of the perception of the similarity of their land may be further enhanced by their common language (English) and an affinity for their populations (Anholt, 2005).

Interestingly, the image of environmental purity is not necessarily reinforced by national policy: neither Australia nor Canada has ratified Kyoto. Moreover, both countries lag

behind their peer countries in environmental performance, as reported by the Conference Board of Canada (OECD). Compared to the leaders in environmental performance, Sweden, Finland, Norway, and Switzerland, which received a grade of “A”, Canada and Australia received a “C” and “D” respectively. Only the U.S. ranked lower among the 17 countries rated.

As pointed out in the OECD report, the U.S., Australia, and Canada are similar with regards to size of land area, which in turn is responsible for high water consumption, high waste generation, and poor performance in terms of organic farming, Marine Trophic Index, and certain elements of air quality in all three countries. The OECD report notwithstanding, it is individual consumers, relying on their own level of education and awareness about the environmental performance of their own and other countries, who will choose various environmental cues to categorize Canada in relation to its competitors in a given market.

#### **2.3.5.6. Size of Economy**

According to Anholt (2005), a country’s population size is directly proportional to its volume of international trade and the number of its products on the global market. In other words, a country’s population size appears to correlate highly with the size of its economy. Consequently, among the developed nations, population size moderates the strength of a national brand (Anholt, 2005). For example, the U.S. is perceived by scholars and marketers alike as “the world’s most powerful country brand” (Kim, 2006, p. 127).

In the marketing sense, size of economy is not always reflected in the number of famous global brands. According to a survey conducted by Interbrand/Business Week in 2007, the U.S., holding 53 of the world's top 100 brands, is in a class of its own. Japan, with 8 brands in the global market, seems to be in the same pack as Germany (9 brands) and France (11 brands). With the exception of Switzerland (4 brands), Finland (1 brand), and Sweden (1 brand), other small peer-group countries form a category with no top global brand. No brand of either Canada or Australia has ever made the top 100 global brands. Canada, with slightly over 2% of global trade, sells mostly unbranded commodities (Conference Board of Canada, 2007).

Size of economy, whether measured by international trade, the number of products, or the number of brands on the international market, may be an indicator of a country's potential to compete in the global economy. However, each of these measures may convey different information for classification purposes. For example, lack of one or more top world brands may point to a country's inability to produce high-value products "that would be capable of matching the U.S. top brands" (Conference Board of Canada, 2007). Thus, based on the size of its economy, Canada is unlikely to be classified along with the U.S.

#### **2.3.5.7. Foreign and Domestic Policy**

Van Ham (2001) argues that "the art of politics is changing" and because of that, "reputation management" at the political level has become more important than ever (p. 1). A country's performance in the "Governance" dimension, defined as a country's

competence and fairness in domestic and foreign policy, is considered one of main components of its national image (Anholt 2005). The low performance of the U.S. in upholding international peace and security seems to have resulted not only in the poor ratings the U.S. received in Governance, but also its ratings in other dimensions not related to politics (Anholt, 2005). Anholt (2005) describes these findings as “a kind of protest vote” (p. 12). As Heslop and Papadopoulos (1993) point out, “Good products are seen to be produced by people who . . . are likeable, trustworthy and admirable for their role in world politics” (p. 67).

Since political and military involvement in international affairs has an impact on country image and product evaluation, international presence and the nature of international involvement is expected to be a strong factor in the categorization process. Research conducted by Shimp et al. (1993) in which two superpowers, the United States and Russia, were placed in one cluster according to consumers’ cognitive structures for these countries, offers empirical support for the notion that a country’s political and military involvement profoundly affects the categorization of that country. Shimp et al. (1993) explained that this “peculiar” partnership was due to a very selective experience with Russian goods, mostly consisting of expensive products (i.e., vodka and caviar). The explanation, however, failed to account for the high frequency of negative comments about the quality of Russian products that should have placed Russia closer to Yugoslavia and Korea than the United States in the perceptual space defined by product attributes. A more plausible explanation would be that consumers’ perception of the quality of Russia’s offerings was influenced by their knowledge of the country’s military

capabilities or space achievements. Thus, Canada's positive international reputation as peacekeeper may distinguish the country from its closest neighbour, the military superpower. As a result, Canada is more likely to be placed in a category with other non-hostile nations.

### 3. RESEARCH FRAMEWORK

The COO literature encompasses a wide variety of publications. Marketing scholars have made extensive efforts to trace the COO effect in different contexts and with different methodologies. The goal of this study is to incorporate the proposed pack membership cue into the COO framework and to compare the strength of its effect with the COO cue.

The pack membership cue has been defined in this dissertation as an informational heuristic used by consumers to evaluate the food system of one country in relation to their image of the food system of another country regarded as similar in terms of country-level characteristics. In other words, the pack membership cue refers to the consumer's set of beliefs about the food system of a specific country that can evoke views and opinions about the food system of another country perceived as belonging to the same pack or sub-pack.

The distinction made in this paper between pack and sub-pack refers to the level of categorization. A pack is referred to as a grouping of countries at the basic level of categorization wherein countries are cognitively linked according to their level of economic development. By this definition, Canada is a member of a pack of developed nations. Among Canada's competitors considered in this study (i.e., the U.S., Australia, France, the Netherlands, and Mexico), only Mexico is not classified as a pack member<sup>2</sup>. Instead, Mexico is placed in a separate pack of developing countries. While the membership of a country at the pack level is expected to be stable, the membership at the

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<sup>2</sup> "In common practice, Japan in Asia, Canada and the United States in northern America, Australia and New Zealand in Oceania, and Europe, are considered 'developed' regions or areas" (UN, 2008).

sub-pack level is proposed to be context and situation specific. Sub-packs can be based on different kinds of similarities, and a country can belong to many sub-packs simultaneously.

Thus, it is asserted that perceived similarities between members of the sub-pack that share characteristics in various aspects of their economic, social, cultural, and political existence lead to an association at the industry level that explains consumer attitudes and behaviour towards an entire industry. Consequently, cross-national sector associations or the sub-pack membership effect in application to the food systems of the evaluated countries is expected to reflect the “halo” effect attributable to cross-country similarities. In this perspective, the halo effect “can be considered as a special subcategory of the fallacy of hasty generalization” (Grcic, 2008, p. 4), which is aided by a cognitive tendency to overrate similarities within a category. Therefore, while the relationship between similarities of cross-country and cross-industry characteristics is assumed to be indicative of the true halo (i.e., the country level attributes that constitute the basis of categorization are predictive of the sector’s performance), it may also illustrate the illusory halo whereby the strength of the relationship is exaggerated in the minds of consumers.

It is important to stress that, in this study, the sub-pack membership effect will be examined at the industry level. While it has been asserted that consumers can form associations based on an array of information about a group of countries (as discussed in Section 2.3.5), this dissertation is concerned with the impact of similarities between

countries (regardless of the basis of comparison) on the evaluation of their respective food systems. Hence, the research will focus on the commonalities shared by the countries within each sub-pack as determined by the categorization of those countries according to the similarities of their respective food systems. For example, two countries whose food system images are perceived by consumers as more similar than those of other evaluated countries will be considered immediate pack members. Although the effort will be made to explain cross-country sector similarities along with the corresponding similarities of their images at the country level, the nature and constraints of the data used in this study (see the limitations of the research in Section 5.4) will limit inferences involving similarities at the level of country characteristics.

The data used in the dissertation were provided by Agriculture and Agri-Food Canada (AAFC) from a series of cross-national consumer surveys conducted in support of the international *Canada Brand* initiative. This research will contribute to the AAFC efforts by addressing a key issue regarding Canada's competitiveness in international agri-food markets. By examining cross-national associations among food systems beliefs, the research is expected to provide findings that will help to secure a deeper understanding of the bases used by consumers in various countries in developing attitudes towards Canadian foods within these competitive environments. Thus, the main research question of this study is:

- In a complex international environment, how are consumers' perceptions of and attitudes towards Canada's food industry in a given market influenced by or differentiated from perceptions of Canada's industry competitors in that same market?

The study also explores the following sub-questions:

- Which of Canada's industry competitors is most closely associated with Canada (i.e., belongs to the same sub-pack) and/or shares Canada's competitive positioning in the food sector in different markets?
- How relevant is Canada's country image in consumers' evaluation of the Canadian food industry?
- Does Canada's country image differentiate it from its competitors in international agri-food markets?
- To what extent is Canada's country image reflected in consumers' evaluation of the Canadian food industry in each of four surveyed countries (i.e., Germany, Great Britain, Japan, and the U.S.)?
- Can alignment with some competitors differentially advantage Canada's positioning in certain markets and alignment with others disadvantage Canada?

The content of this section will be organized as follows. Beginning with the research hypotheses, stated in Section 3.1, the description of the research framework will include a various aspects of the research methodology in Section 3.2. Section 3.2.1 will provide brief coverage of the data used in this study. Section 3.2.2 will focus on an overview of the methodological strategy of the research and Section 3.2.3 will present a detailed plan of how each hypothesis will be tested. It should be noted that this section is the backbone of the research presented in the following section.

### **3.1. RESEARCH HYPOTHESES**

The hypotheses presented in this section are guided by a framework that defines the pack membership effect in the context of the COO research. The framework has been used to model a range of relationships as well as to explore the nature of the expected associations. While some hypotheses yield a testable prediction fundamental to the main argument of this dissertation (i.e., the pack membership effect), others play a supportive role necessary to set up groundwork for a better understanding of the relationships under investigation.

A total of six hypotheses are advanced to establish the theoretical foundations supporting the delineation of the pack membership effect, compared with that of the COO cue, and tested in the presence of the contextual factors (i.e., uniqueness and product familiarity). Hypothesis #1 will capture the strength of the relationship between various aspects of the Canadian image and evaluation outcomes (i.e., the quality of the food industry). The impact of the perception of the competing food system on the perception of the food system of the evaluated country will be proposed in Hypothesis #2. Hypothesis #3 describes the anticipated effect of country image on similarities between food systems. Hypothesis #4 focuses on an examination of the relative strength of the COO cue (described under Hypothesis #1) and the pack membership cue (postulated under Hypothesis #2) in explaining attitudes towards the Canadian food industry. The study will also test the influence of two factors in particular, product familiarity and uniqueness, on the relationship between the COO cue and the pack membership cue. It is hypothesized that a country whose products enjoy a higher level of familiarity among consumers is less likely to be vulnerable to the categorization process (Hypothesis #5).

By the same token, it is proposed that the impact of pack membership on the perception of respective food industries is diminished when a country's food system is seen as unique (Hypothesis #6).

### **3.1.1. Country-of-Origin (H1)**

The COO literature reveals that country-of-origin information affects both consumer beliefs about and attitudes towards products of an evaluated country. Though the degree of influence that COO exerts on product evaluation varies depending on the context in which it is tested and the methodology employed by researchers, COO impact has nevertheless been found to be robust across many products and industries (Papadopoulos and Heslop, 2002; Dinnie, 2004). Moreover, country-of-origin information is seen to affect perception of a product's specific attributes and overall consumer evaluation or response. The most consistent findings link the COO cue with the perception of product quality (Ahmed, d'Astous, and Eljabri, 2002; Chao, 1998; d'Astous and Ahmed, 1999; Hong and Wyer, 1989; Jaffe and Nebenzahl, 2001; Johansson, 1989; Kaynak and Cavusgil, 1983; Papadopoulos and Heslop, 1993). Some scholars, such as Agrawal and Kamakura (1999), argue that positive response to the COO cue seems to diminish as consumers become more engaged in purchase behaviour and "move closer to the actual purchase situation from belief formation" (p. 256).

COO research tends to favor high-involvement durable products (Ozsom and Cavusgil, 1991; Alden, Hoyer, and Crowley, 1993; Juric and Worsley, 1998) and well-known brand products (Knight and Gao, 2005). This tendency explains the relatively small number of

studies focused exclusively on the relationship between COO, food products and consumer evaluation outcomes (Knight and Gao, 2005; Bhaskaran, 2005). Nevertheless, food products, among other product types, have been included in many COO studies (e.g., Nagashima, 1970; Schooler, 1965; Wall and Heslop, 1986) since the inception of COO research. Some of the food products studied were found to capitalize more on their origin than durable products such as clothes and electronics (Cheron and Hayashi, 2001). Moreover, recent COOL legislation introduced in many jurisdictions has already inspired a few studies linking food products with their origin and the trend is likely to continue.

According to Batra et al. (2000), the importance of country of origin as a cue signaling quality is higher in product categories where objective quality assessment is difficult. Taking into account the credence aspect of food products, origin information should be of great significance in the evaluation of quality. In fact, in the food sector, country of origin has been studied with particular reference to quality (Hollensen, 2004). A “made in” label can communicate source credibility (Verlegh et al., 2005), health and safety standards, and producers’ work practices (Lobb and Traill, 2003), and is particularly relevant during the outbreak of food contamination scares (Lin and Chen, 2009). In the case of many well-known agri-food products whose identity is inherently linked to their origin, the geographic indicator conveys information about the intrinsic quality of a product that is linked to characteristics of the physical environment, such as soil, climate, and topography (Tregear and Gorton, 2005).

Various studies reveal that knowledge of the country of origin enhances not only the perception of a product, but also of the brand (Jacoby, Olson, and Haddock, 1971; Agrawal and Kamakura, 1999). Consequently, it can be inferred that the influence of COO in consumer assessment of product quality can be extended to the industry that produced the product. Thus, we would expect a positive country image to be mirrored in a positive perception of the quality of the food industry of that country. Consequently, it is hypothesized:

**H1:** The country of origin image is positively related to the perceived quality of the respective food industries of the surveyed countries; [the more favourable the overall country image, the more positive the consumer's evaluation of the food industry of that country].

### **3.1.2. Pack Membership (H2)**

Some scholars approach country image as a convenient heuristic used by consumers to simplify their choices (Lawrence, Marr, and Prendergast, 1992). This notion is based on the conviction that people have “strong beliefs and sharp images of other nations in the world” (O’Shaughnessy and O’Shaughnessy, 2000). It has been argued, however, that “most buyers in most countries have probably no distinct image of any foreign country that is not the image of the region (e.g., Asia or South America)” (O’Shaughnessy and O’Shaughnessy, 2000, p. 57). Canada shares many characteristics with the U.S. (Tversky, 1977; Anholt, 2005), Belgium is confused with Holland (Dowling, 2001) and Korean products suffer from association with Chinese goods (Johnson, 2005). Moreover, many

scholars point to the level of development of a particular country as the main source of information in the assessment of the products from that country (Chasin and Jaffe, 1979; Pharr, 2005; Verlegh and Steenkamp, 1999). Consequently, some studies (Balabanis and Diamantopoulos, 2004; Knight and Gao, 2005; Samiee, Shimp, and Sharma, 2005) indicate that consumers are either indifferent to or confused about the origin of goods produced in the West.

The notion that individuals have limited capacity to store complex information in memory has strong support in the field of cognitive psychology (Miller, 1956). To conserve cognitive capacity (Bettman, 1979) and to increase the amount of information that can be retained and used in the future (Miller, 1956), individuals compress information into pieces or chunks, referred to as “a collection of elements having strong associations with one another, but weak associations with elements within other chunks” (Gobet et al., 2001, p. 236).

The mechanism behind the perceived similarity among stimuli is the focus of categorization theorists (Medin and Smith, 1984; Mervis and Rosch, 1981). It is well documented that people tend to organize information about the environment into cognitive categories (Medin and Smith, 1984; Mervis and Rosh, 1981) to the extent that non-identical objects are treated as equivalent (Rosch, 1978). According to Barsalou (2003, p. 514),

*Once something has been assigned to a category, category knowledge provides rich inferences constituting expertise about the world. Rather than starting from scratch when interacting with something, agents benefit from knowledge of previous category members.*

Since categorization leads to perceived similarity among stimuli that share certain features (Tversky, 1977), members of a category tend to appear more similar than they actually are. Consequently, they tend to be evaluated in terms of the category schema as opposed to their individual traits (Sujan and Bettman, 1989). Thus, whether consumers face information overload, lack sufficient information to evaluate a country's offerings, or do not consider a decision important enough to invest cognitive resources in differentiating between stimuli, it is proposed that they rely on the pack membership schema to form their attitudes towards a country and its products. Consequently, the following hypothesis is advanced:

**H2:** The perceived quality of the food industry of a country is positively affected by the perceived quality of the food industry of another country that is perceived by consumers as a pack member.

### **3.1.3. The Relationship between the Country- and Industry-Level Similarities (H3)**

The impact of the pack membership cue on consumers' evaluative processes does not negate the importance of country-of-origin information. In fact, country-level input determines how a particular country relates to the other members of the pack. For example, a country's level of economic development constitutes not only a criterion for entry into the pack of developed countries, but also determines that country's standing compared to the other members. Further, at the lower level of categorization, individual countries can be grouped according to various criteria, such as indicators of prosperity, culture, geographical proximity, size of economy, and/or international presence. While

categorization is assumed to take place independently from the evaluation of the product or industry, the impact of categorization on the perception of a product or industry is likely to be contingent on the relevance of a particular grouping construct to the performance of the industry. Based on the notion of “product-country match” postulated by Roth and Romeo (1992), it is inferred that the congruence between category diagnostic attributes and important features and benefits of the food industry determines the impact of a particular categorization scheme on industry evaluation. Hence, the following hypotheses are formulated:

**H3:** Two countries whose country-related attributes relevant in the assessment of their food industries along the quality dimension are perceived as similar, are also perceived as more similar at the food industry level when compared to other countries.

#### **3.1.4. The Country-of-Origin Image Cue vs. the Pack Membership Cue (H4)**

Integrative reviews of previous research (Papadopoulos and Heslop, 2002; Dinnie, 2004) show that COO was found to have a significant effect on product evaluations in single cue design studies; however, when COO was combined with other information cues, its partial effect on product evaluation was considerably weaker. According to scholars (Agrawal and Kamakura, 1999), in a real life situation, consumers rely on multiple, often competing sources of information. In a complex decision-making environment, consumers draw on categorical knowledge stored at different levels of cognition to evaluate a product from a specific country (Lee and Ganesh, 1999). For example, as

“more predominant and primitive,” categorical knowledge at the country level is more likely to enter the product evaluative process before categorical knowledge at the product level (Lee and Ganesh, 1999, p. 22).

In his argument supporting “the view of country of origin as an indicator variable,” Johansson (1988) asserts that consumers search for “summary statistics.” He goes on to explain: “The best known of these summaries is the brand name. It seems not too far-fetched to conceive of the county of origin cue as another such summary statistic” (p. 51). Following the same logic, the construct of pack membership can also be regarded as a heuristic that influences customer product evaluation. Moreover, mirroring Johansson, Douglas and Nonaka’s (1985) idea of COO as a summary cue, pack membership can be seen as a summary construct at the higher hierarchical level that not only includes overlapping images of its members, but also “encapsulate[s] other product information” (Knight and Calantone, 2000). Thus, the informational value of pack membership is expected to reflect not only country-related information (e.g., economy, geography, culture, or politics) but also encapsulate experience with food products of individual pack members. Taking into account specificity of reference – industry-to-industry associations across countries, in comparison to country-to-industry associations within a country – the pack membership cue is expected to be activated by cognitive processes before the COO cue is. Moreover, the difference in influence of these competing cues is expected to increase over time with a convergence of industry practices among global players.

In summary, if we view the pack membership cue in terms of categorical knowledge stored at a higher level of cognition than the COO cue, it is reasonable to expect that the pack membership cue would influence the product evaluation process to a larger extent than the COO cue. Similarly, if we depict the pack membership cue as a summary construct at a higher hierarchical level than the COO cue, it is logical to assume that the pack membership cue would influence the consumer's decision making process more than the COO cue. Finally, if we think of the pack membership cue as a cognitive shortcut triggered by the specificity of associations (i.e., industry to industry vs. industry to country) and the relativity of informational content, it is rational to anticipate that the pack membership cue would prevail over the COO cue. At the very least, the pack membership cue is more likely to dominate the perception of the food industry of countries whose respective images do not convey clear competitive advantage in the food industry. It is therefore hypothesized that:

**H4:** The perception of the food industry of a specific country is influenced more by attitudes towards the food industries of other sub-pack members than by the image of that country.

### **3.1.5. Product Familiarity (H5)**

The notion that product knowledge influences consumer information-processing and decision-making has been appreciated by scholars from various disciplinary backgrounds (Raju, Lonial, and Mangold, 1995). Familiarity, seen through the lens of psychologists, is a multidimensional construct which, by virtue of its complexity, may have multiple

impacts on evaluation outcomes. Raju, Lonial, and Mangold (1995) found that level as well as type of knowledge influence attribute importance and decision outcomes. In the evaluation of alcoholic beverages, Schaefer (1997) observed how various dimensions of consumer knowledge affect the importance of country of origin information.

Indeed, various ways of operationalizing the construct are exemplified in the marketing literature. The role of familiarity has been investigated at different levels, such as individual product (Zhou and Nakamoto, 2007), product category (Alba and Hutchinson, 1987; Josiassen et al., 2008), brand (Cordell, 1992), and country (Lee and Ganesh, 1999). Acquired by a means of various forms of encounters with product-related information, such as purchase/ownership, usage, search, and advertising, product familiarity itself is grounded in different product experiences (Hutchinson and Zenor, 1986). Depending on the level of analysis and the interactive effects of various forms of familiarity, the conclusions regarding the impact of familiarity on product evaluations and purchase decisions can be inconsistent or even contradictory. Taking into account the difference in focus and operationalization of variables, it is no surprise that the findings of the mainstream research in the COO literature concerned with the effects of familiarity on the use of extrinsic cues are hard to reconcile with theoretical developments in the brand literature.

Product familiarity has been part of the country-of-origin framework for decades, and the portfolio of research supporting or denying its importance is quite diversified. By and large, it has been accepted that product familiarity has an inverse effect on COO usage

(Eroglu and Machleit, 1989; Inch and McBride, 2004; Maheswaran, 1994; Nagashima, 1970). In other words, consumers' propensity to use COO as an extrinsic cue diminishes with an increase in the level of product familiarity (Beverland and Lindgreen, 2002). Lee and Ganesh (1999), however, found that consumers reporting high product familiarity as much as those reporting low product familiarity were more likely to use the COO cue than their counterparts who were moderately familiar. By contrast, Johansson and his colleagues (Johansson 1989; Johansson, Douglas, and Nonaka 1985; Johansson and Nebenzahl 1986) hold the view, consistent with that in the brand literature, that product familiarity is positively related to the use of COO as an extrinsic cue. Finally, in the context of purchase intention, Roth and Romeo (1992) found that product familiarity did not moderate consumers' sensitivity to COO at all.

Familiarity is an important building block in the branding literature. However, in the context of branded products, the construct is defined in terms of familiarity with a brand<sup>3</sup>. Thus, brand familiarity constitutes a key component of the brand equity model, complementing brand image and brand associations (Keller, 1993). Brands with higher levels of familiarity are preferred over lesser known brands. Consumers pay more attention to the product information about well-known brands compared to that of their less familiar counterparts. Brands enjoying higher recognition are less likely to be clustered in competitive advertising than brands having lower levels of recognition (Kent and Allen, 1994). The effectiveness of a brand as a cue for product quality is contingent

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<sup>3</sup> According to Samiee et al. (1994), brand familiarity does not imply product familiarity. However, it is "reasonable to expect product familiarity to result from brand familiarity, which plays a greater role in purchase decisions" (p. 583).

on familiarity with the brand, whereby the more familiar the brand, the greater its impact on product evaluation (Samiee et al., 2005). Moreover, Samiee (1994) noted that “when brand familiarity is high, . . . brand image is likely to be more closely associated with the CO. . . . However, when brand familiarity is low or nonexistent, . . . other informational cues . . . will play a greater role in assessing products” (Samiee, 1994, p. 584).

This study treats familiarity with products from an evaluated country as a construct that can potentially impact the relative strength of two external cues, namely the pack membership cue and the COO cue. It is postulated that the contribution of these two heuristics in explaining the perception of the evaluated food system is likely to change as a function of product familiarity. In other words, product familiarity is likely to moderate the relationship described in Hypothesis #4. Thus, in a situation of little or no familiarity with products from a given country, the informational value of the COO cue above and beyond that provided by the pack membership cue is likely to be lower than in a situation of high or even moderate familiarity. The argument is based on the notion that product familiarity is expected to influence the cognitive processes (Johansson, 1988) and preference for information used in product evaluation (Rao and Monroe, 1988). According to Stoltman, Lim, and Morgan (1991), “[p]roduct familiarity moderates the perceptual categorization process and the development of cognitive structures” (p. 82).

The impact of familiarity with stimuli on categorization has a strong theoretical foundation in the field of psychology. For example, Hurst (2007) argued that “lack of familiarity encourages the lumping together of unknown individuals.” Quinn, Mason, and

Macrae (2009) asserted that although “social (i.e., group-level) categorization is functional for construing unfamiliar others (about whom little or no individuating information is available), it is less functional for familiar others (about whom a great deal of individuating information is available)” (p. 852). Building on the literature in psychology, it is assumed that consumers familiar with products of a certain country are less likely to subject that country’s image to the categorization process and apply evaluation schemas to its food industry. Those consumers are expected to summarize their experiences with products to think of the country as a brand with a product-related set of attributes (e.g. quality), which can be further projected on the food system of that country. Consequently, the diagnosticity of the COO cue increases with the increase in the country’s brand value. Thus, the view of familiarity with products from a specific country as a competitive asset in an international environment and a moderator of cognitive processes gives rise to the following hypothesis:

**H5:** Familiarity with products from a country moderates the relative importance of the country of origin image cue in relation to the pack membership cue. [More specifically, higher product familiarity results in lower reliance on the pack membership cue in relation to the country of origin image cue].

### **3.1.6. Uniqueness (H6)**

There is overwhelming agreement among multi-disciplinary scholars concerned with category-based evaluation (Fiske and Pavelchak, 1986; Sujan, 1985; Sujan, Bettman, and

Sujan, 1986; Alden et al., 1993) that the “schema-triggered effect” is less likely to occur when one’s involuntary impulse to generalize is confronted with information that contradicts one’s expectations of typicality of the evaluated stimuli. According to Sujan, Bettman, and Sujan (1986), an individual classified as a typical category member is judged according to his/her membership in that social category. In contrast, an individual with non-typical characteristics is evaluated on a trait-by-trait or piecemeal basis (Fiske and Pavelchak, 1986).

The non-typicality effect seems to overlap the concept of uniqueness covered in the marketing literature. In the case of countries, a non-typical member may be one with an outstanding reputation in the industry. Thus, a country’s reputation may reflect its high performance and know-how capabilities in the evaluated industry.

The positive effect of the non-typicality factor has extensive support in the COO literature, and it is well documented that countries can enjoy competitive advantage in the industries that define or shape their image (Dowling, 2001). In the food industry, France is the country that best demonstrates the impact of positive reputation. The image of world-renowned chefs, the tradition of appellations, famous products (e.g., wines and cheeses), and recipes (e.g., Coq au Vin or Crêpes Suzette) – all create the impression that food products originating in the country are touched by the French passion for food. In fact, the American animation studio Pixar placed its ‘little chef’ in the finest restaurant in the world – in Paris. Movies such as *Ratatouille* represent the international recognition enjoyed by French cuisine. Thus, it would be logical to assume that France is not

subjected to the same level of ‘schema’ evaluation as other members of the pack. As a ‘prototypical’ member, to whom other countries are compared in terms of food industry performance, France’s image is expected to be more aligned with its performance in the food industry and less likely to be influenced by the “pack membership” effect. Therefore, it is hypothesized that:

**H6:** Countries with unique standing in the food industry are less prone to category-based evaluation than countries with no such position.

### **3.2. RESEARCH METHODOLOGY**

The main purpose of this section is to describe the general methodological direction of the research and specific approaches to hypothesis testing. In order to provide the context of the research, a brief overview of the data precedes the discussion of the types of statistical analyses employed in the study. While the methodological strategy section lays out the design of the qualitative research in support of the main theoretical thrust of the study, the hypothesis testing section is concerned with the specific hypotheses which cumulatively define the framework of the dissertation.

#### **3.2.1. Data Description**

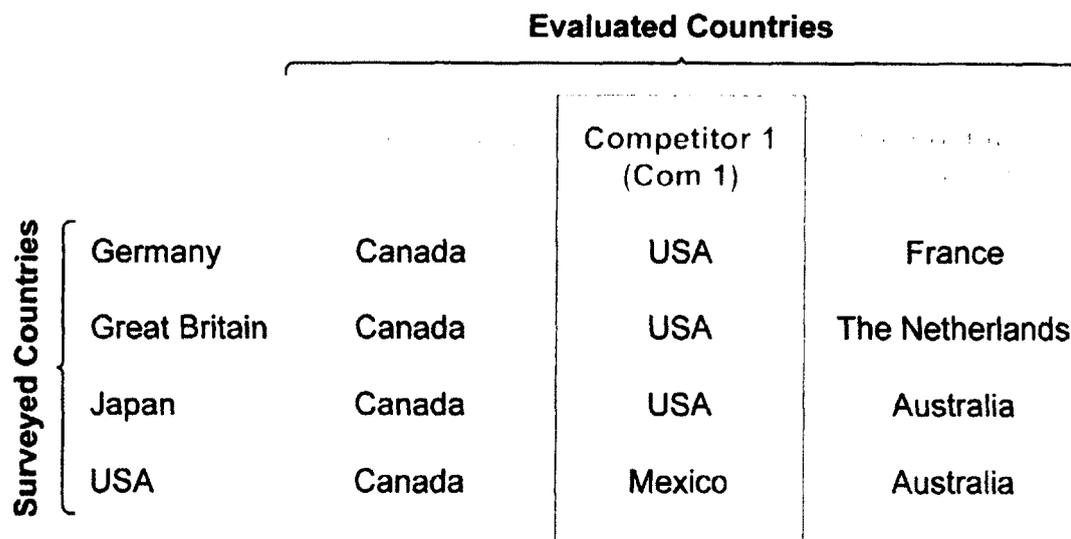
This section reveals the content of the data provided by Agriculture Canada. Beginning with definitions of the basic terms that are key to the discussions of the data throughout the study, it goes on to provide a brief overview of the survey design, including a

description of the investigated constructs, followed by a discussion of the data collection framework employed by Agriculture Canada.

**3.2.1.1. Data Structure**

Figure 2 presents the structure of the data used in this dissertation for empirical testing of the hypothesized relationships. In each of the four surveyed countries (i.e., Germany, Great Britain, Japan, and the U.S.), Canada is one of three “evaluated countries” subjected to various statistical analyses. The other two countries have been considered by AAFC as Canada’s main “competitors” in a given market. Since Canada is the focus of the empirical investigation within each competitive environment, it is described as the “target” country. The only exception is found in the SEM analysis of the German data, where France was designated as the target country for the purpose of specific hypothesis testing (i.e., Hypothesis #6).

**Figure 2. Data Structure**



### **3.2.1.2. Survey Design**

Questionnaires for the surveys were developed by Agriculture Canada to obtain information critical to the design of a Canadian agriculture and agri-food sector branding strategy and marketing program. The main areas of the surveys cover the following topics:

- 1) consumers' perceptions of Canada in general and its food system;
- 2) their preferences and purchasing behaviour with respect to food and agricultural products of Canada, the home country, and the two import competitor countries;  
and
- 3) their consumption patterns, decision making processes, and food requirements.

From the large battery of questions included in the questionnaires, only those pertaining to the constructs<sup>4</sup> that are the focus of this study were selected. Consequently, the research instrument includes questions measuring three constructs: country image, quality of the food system, and product familiarity. Moreover, since this dissertation is concerned with the assessment of Canada in relation to its food import competitors, consumer responses with regards to the home country (i.e., the surveyed country) are not included.

To assess Canada's image/reputation relative to that of other countries, the survey asks consumers to respond to a series of parallel questions measuring their opinions and impressions about Canada, as well as about two of Canada's major food supply import

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<sup>4</sup> In this dissertation, a construct is an unmeasurable random variable characterized by a set of manifest (measured) variables or items.

competitors. Respondents' perceptions of country and people image are measured by eleven items on a seven-point scale (where 1 indicates "strongly disagree" and 7 indicates "strongly agree"). Only the end-points of the scales were labeled in the questionnaire. A full list of the questions on the scale is presented in Table 1.

**Table 1. Country and People Image**

#	<i>Q. Please indicate your level of agreement with each of the following statements about &lt;country and country's people&gt;.</i>
a	<Country> is a stable country
b	<Country> has a good economy
c	<Country> is technologically advanced
d	<Country> has an environment with clean air and water
e	<Country> has a good way of life
f	<Country> is an ideal country
g	<Country> has a good reputation in the world
h	<Country's people> are well educated
i	<Country's people> are hard-working
j	<Country's people> are trustworthy
k	<Country's people> are likeable

Parallel questions are also asked to assess consumers' perceptions of the Canadian food system in comparison with the food systems of its competitors. The perception of the food systems of the evaluated countries is measured by sixteen items on a seven-point scale (where 1 indicates "strongly disagree" and 7 indicates "strongly agree"). The items are listed in Table 2. It is important to note that some questions will be dropped from the set of construct measures used in the study due the results of the measurement model testing (Section 4.1).

**Table 2. Food System**

#	<i>Q. Please indicate your level of agreement with each of the following statements about &lt;country&gt;.</i>
a	<Country's> regulators ensure all <country's> domestically grown food is safe
b	<Country> has a good reputation for producing food that is good to eat
c	I am willing to buy foods from <country>
d	<Country> is well known for wholesome foods
e	<Country's> farmers are concerned about food safety
f	<Country's> farmers are concerned about food quality
g	<Country's> farmers are concerned about growing foods in ways that are good for the environment
h	<Country's> farmers are concerned about the welfare of farm animals
i	I can be confident to get good food products from <country>
j	<Country's> food producers are interested in making foods that I would like to buy
k	<Country's people> know how to produce safe foods
l	<Country's> food producers know how to make interesting new foods
m	<Country's> food producers and processors are honest and trustworthy
n	<Country's> food is always of high quality
o	I am satisfied with the foods I buy from <country>
p	I would be interested in having more food from <country> in my store

Consumers' familiarity with products of the surveyed countries is assessed by means of their response to a single statement about each country - "I know a lot about <country's> products." Responses are recorded on a seven-point scale, where 1 indicates "strongly disagree" and 7 indicates "strongly agree." For the purpose of the multiple-group analysis, the respondents were placed in one of two categories (i.e., "familiar" and "unfamiliar") depending on their level of familiarity with the "country's products" measured in the questionnaire. The middle of the 7-point scale is taken to represent average familiarity. Consequently, consumers who assessed their knowledge to be average or above average ( $\geq 4$ ) were classified as "familiar"; those who considered their knowledge below average ( $< 4$ ) were classified as "unfamiliar."

### **3.2.1.3. Data Collection**

The data used in this study constitute a subset of the database comprised of surveys conducted by Agriculture Canada among consumers in eight countries: the U.S., Mexico, Great Britain, Germany, Japan, South Korea, China, and Canada. The data were made available for this dissertation research according to the agreement signed between Carleton University and Agriculture Canada in July 2008.

To optimize the chances of cross-country equivalence in the pack membership model, only surveys conducted in countries with a similar standard of living, as measured by GDP per capita, were selected for this study. Consequently, this study relies on data collected by Agriculture Canada between 2003 and 2005 in Canada's major international markets: Germany, Great Britain, Japan, and the U.S. The table below provides information about the sample size, the date of data collection, and the collection method for each surveyed market.

**Table 3. Data Collection by the Surveyed Market**

<b>Surveyed Country</b>	<b>Sample Size</b>	<b>Date of Data Collection</b>	<b>Collection Method</b>
Germany	1,503	2005	telephone interviews
Great Britain	1,504	2005	telephone interviews
Japan	1,318*	2003	mail-out surveys
USA	1,173*	2004	on-line surveys or telephone interviews
<b>Total</b>	<b>5,508</b>	-	-

\* Sample size excluding missing cases.

The data from Germany and Great Britain did not contain any missing values (neither item non-responses nor unit non-responses). However, in the U.S data, 371 cases out of 1244 had missing values, and the Japanese data included 155 cases with missing values out of 1327. In both cases, some of the missing responses to individual questions were imputed using values of the most closely correlated item in the scale. However, cases with a large number of missing responses were deleted from further analysis (the number of retained cases for each survey country is reported in Table 3).

The original questionnaire was devised by Agriculture Canada with several different survey collection techniques in mind. The questionnaire was pre-tested in each country by the contractors charged with data collection to ensure the chosen means of collection was appropriate for the questionnaire. In one country data collection was done by mail. It should be noted that no direct statistical comparisons were made across countries; instead, all detailed analyses were carried out separately within each sampled country so that the effect of different survey collection schemes on data interpretation would be minimized. Comparisons across sampled countries were qualitative only, and therefore unlikely to be materially affected by data collection methods.

Time differences could have an effect, but no major external happenings during the two-year gap between surveys were noted, so the expectation is that effects of time differences will be minimal. Again, the within-survey analyses as opposed to between-survey analyses should serve to reduce any time effects.

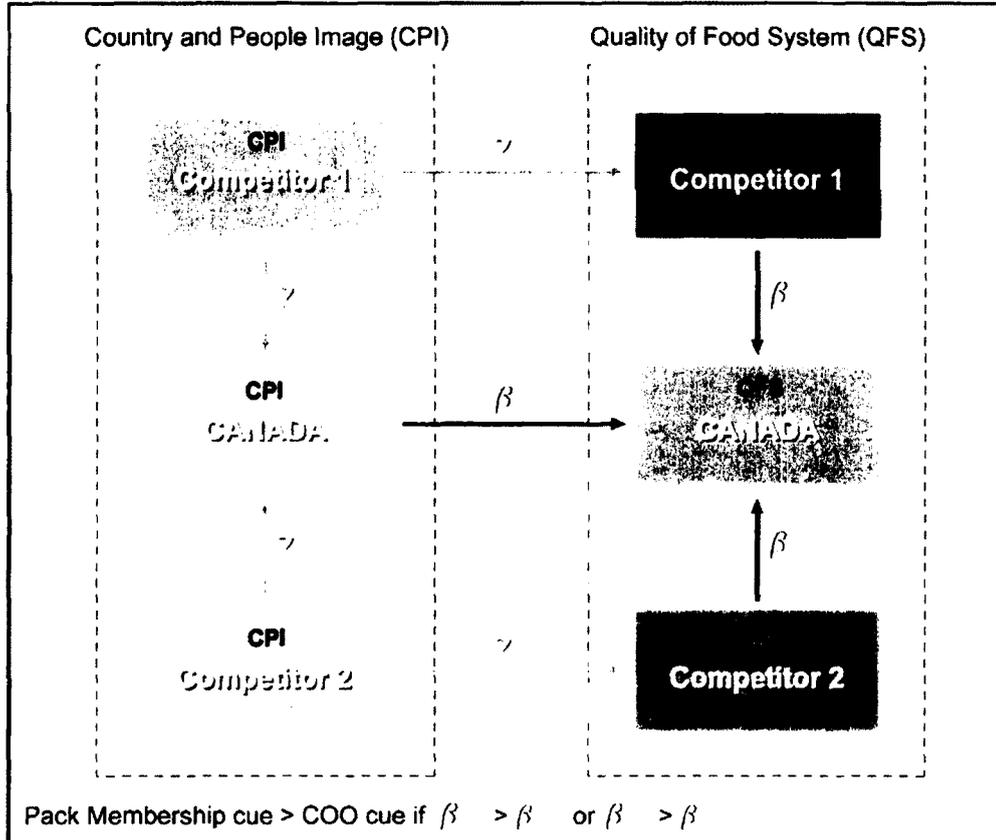
### **3.2.2. Methodological Strategy**

An effort is made in the dissertation to view the data from different perspectives. To take advantage of the benefits offered by individual statistical analyses, three statistical techniques (i.e., Structural Equation Modeling, Multidimensional Scaling, and Discriminant Function Analysis) will be implemented in this study to explain the relationships investigated in the data. While the first two techniques (i.e., Structural Equation Modeling and Multidimensional Scaling) are both based on analysis of covariance/correlation, they differ in statistical sophistication and purpose. Structural Equation Modeling is an advanced statistical procedure designed to test complex theoretical models. In contrast, MDS is a nonparametric and visualization technique typically utilized in the analysis of proximity data. Finally, Discriminant Function Analysis utilizes information about means to describe group differences. This method also provides a graphical representation of group (i.e. country) separation along one or more discriminant functions.

#### **3.2.2.1. Structural Equation Modeling**

In this study, Structural Equation Modeling (SEM) will be used to evaluate the relative impact of the COO cue, in comparison with the pack membership cue (the effect of competitors' food systems), on the evaluation of the quality of the Canadian food system. The objective of this analysis is to demonstrate that the pack-induced cue is more effective in explaining the perception of the food system of the evaluated country than the COO cue of that country. The structural equation model expressed as a path diagram is depicted in Figure 3.

**Figure 3. Pack Membership Model**



SEM will also be employed to estimate whether values of model parameters vary across two groups of respondents – those familiar and those unfamiliar with products of the evaluated country. According to Kline (2005), the research question can be addressed in two ways. First, the model can be estimated for two groups (i.e., familiar and unfamiliar consumers) separately. Second, the model can be estimated across groups simultaneously using a multiple-group analysis. Since the former approach has increasingly been the subject of criticism for its lack of concern for measurement invariance (Steenkamp and Baumgartner, 2000), the focus of the cross-group comparison will be on the latter approach.

### **3.2.2.2. Multidimensional Scaling**

Multidimensional Scaling (MDS) is a technique employed in psychology to depict the relative arrangement of the stimuli in the representation space (Shepard, 1962). Cognitive psychologists also use the method to determine the number and nature of the attributes according to which the similarity judgment about the sample of the stimuli is made (e.g., Nosofsky, 1992). The method is “not so much an exact procedure as rather a way to ‘rearrange’ objects in an efficient manner, so as to arrive at a configuration that best approximates the observed distances” (Hill and Lewicki, 2006, p. 337).

In this analysis, MDS is used exclusively as a pictorial method to observe distances between and within two sets of variables, one assessing the country image and the second measuring the perception of the quality of the food system. Since the perceptual map derived from the data illustrates the relative distance between all variables, it will provide important information about bases for a similarity judgment which is hypothesized to result in categorization at the country level and generalization and transfer of attributes at the food system level. Moreover, the conceptual structure of items representing two scales (i.e. country-of-origin and the quality of the food system) will provide insights as to the relative proximity of investigated constructs (e.g., the distance between the COO variables and the food system variables) between Canada and its competitors. Consequently, MDS analysis is expected to provide a visual support of the anticipated relationships described in most hypotheses.

### **3.2.2.3. Discriminant Function Analysis**

Discriminant Function Analysis (DFA) is a multivariate technique which is designed to identify the weighted set of characteristics that best discriminate between groups. If groups differ with respect to the mean values of certain variables, a linear combination of those variables can be determined to optimize group separation. In cognitive psychology, the method has been utilized in similarity-based classification to establish the contribution of demographic, psychosocial, and cognitive variables in distinguishing between categories under consideration (e.g., Calicchia et al., 1993).

The main purpose of this analysis is to provide an alternative way of viewing the existence of sub-pack effects in each of the surveyed markets, where the distance between the group/country centroids along discriminant function(s) will be explained in terms of the means of the ratings of food system attributes. This study will assess the contribution of variables to group separation using Discriminant Ratio Coefficients (DRCs), proposed by Thomas (1992). These indices allow for the identification of a subset of variables that not only facilitates understanding of similarities and differences between food systems of evaluated countries, but also provides a one-step diagnostic in construct interpretation for each discriminant function (Thomas, 1992). Consequently, it is anticipated that the analysis will reveal similarities between the food systems of immediate pack members and help to explain differences between sub-packs.

It should be noted that the data do not conform to the classical independent group (or between group) structure which is required as an input to DFA. Instead, the original

structure of the data belongs to the category of repeated measures design. Consequently, the use of descriptive discriminant analysis implies an approximation because the correlations among countries will be ignored. Nevertheless, the significance test of mean differences for independent samples on which DFA is based is expected to yield a conservative result, so that the exploration of mean differences should still provide useful comparative information. This conservatism is analogous to the use of a two-group (independent samples) t-test instead of a paired t-test for comparing the differences in means between two variables in one set of observations (Louis et al., 1984).

### **3.2.3. Hypothesis Testing**

This section presents an outline of how each hypothesis stated in Section 3.1 will be tested with one or more of the methods briefly described in the previous section (3.2.2), namely SEM, MDS, and DFA. Given the rigour of SEM in hypothesis testing, the method will be used in this study to test all hypotheses. Thus, all hypotheses can be evaluated by assessing the absolute or relative significance of the relevant parameters within the SEM framework. The other methods are expected to provide additional evidence to substantiate the postulated relationships stated in individual hypotheses. Tables below contain the description of how each method will be used in hypothesis testing and the criteria by which a particular hypothesis will be evaluated.

**Table 4. Hypothesis Testing Method - Hypothesis #1**

<p><i>H1: The country of origin image is positively related to the perceived quality of the respective food industries of the surveyed countries; [the more favourable the overall country image, the more positive the consumer's evaluation of the food industry of that country].</i></p>	
<b>Method</b>	<b>Description</b>
SEM	Hypothesis 1 will be supported if the path coefficient ( $\beta_{11}$ ) linking the perception of the image of the targeted country ( $CI_{TG}$ ) to the perception of the quality of that country's food system ( $FS_{TG}$ ) is positive and statistically significant.
MDS	The examination of the spatial proximity between two sets of variables, one underlying the constructs of the country image (CI) and the second underlying the construct of the perception of the quality of the food system (FS), is expected to reveal a relatively shorter perceptual distance between the individual variables of the two scales, which may help to explain the basis of the relationship between the two constructs.
DFA	NA

**Table 5. Hypothesis Testing Method - Hypothesis #2**

<p><i><b>H2: The perceived quality of the food industry of a country is positively affected by the perceived quality of the food industry of another country that is perceived by consumers as a pack member.</b></i></p>	
<b>Method</b>	<b>Description</b>
SEM	<p>Hypothesis 2 will be supported if, in the surveyed market, the path coefficient linking the perception of the quality of the food system of a targeted country's competitor (FS<sub>COM1</sub> or FS<sub>COM2</sub>) to the perception of the quality of the targeted country's food system (FS<sub>TG</sub>) is positive and statistically significant. Thus, the effect of the sub-pack membership cue will be confirmed if the coefficient (<math>\beta_{12}</math> or <math>\beta_{13}</math>) of the pathway FS<sub>COM1</sub> → FS<sub>TG</sub> or FS<sub>COM2</sub> → FS<sub>TG</sub> is positive and statistically significant.</p> <p>Following the argument advanced in this dissertation, in the U.S. market, the magnitude of the direct effect between the quality of the Mexican food system (FS<sub>COM1</sub>) and the Canadian food system (FS<sub>TG</sub>) is anticipated to be negligible, either in absolute terms or in relation to the direct effect between the food system of Australia, another competitor in the U.S. market, and the targeted country (i.e., Canada), because Canada and Australia are hypothesized to be pack members whereas Canada and Mexico are not.</p>
MDS	<p>The examination of the spatial proximity between the variables measuring the perception of the quality of the evaluated food systems (i.e., Canada's food system and the systems of its two competitors in a given market) is expected to reveal the extent and the basis of similarities and differences among the food systems of the evaluated countries.</p>
DFA	<p>The analysis of the distance between the food systems of the three countries (FS<sub>TG</sub>, FS<sub>COM1</sub>, and FS<sub>COM2</sub>) along discrimination function(s) can reveal the existence of sub-packs and the basis of the pack formation.</p>

**Table 6. Hypothesis Testing Method - Hypothesis #3**

<p><i>H3: Two countries whose country-specific attributes relevant in the assessment of their food industries along the quality dimension are perceived as similar, are also perceived as more similar at the food industry level when compared to other countries.</i></p>	
Method	Description
SEM	<p>Hypothesis 3 will be supported if a higher value of the path coefficient (<math>\beta_{12}</math>) between the quality of the food system of the first competitor (<math>FS_{COM1}</math>) and that of the targeted country (<math>FS_{TG}</math>), in comparison with the value of the path coefficient (<math>\beta_{13}</math>) between the quality of the food system of the second competitor (<math>FS_{COM2}</math>) and that of the targeted country (<math>FS_{TG}</math>) is accompanied by a higher value of the path coefficient (<math>\gamma_{11}</math>) between the country image of the first competitor (<math>CI_{COM1}</math>) and that of the targeted country (<math>CI_{TG}</math>), in comparison with the value of the path coefficient (<math>\gamma_{12}</math>) between the country image of the second competitor (<math>CI_{COM2}</math>) and that of the targeted country.</p> <p>Thus, if <math>CI_{COM1} \rightarrow CI_{TG} (\gamma_{11}) &gt; CI_{COM2} \rightarrow CI_{TG} (\gamma_{12})</math>, it is expected that <math>FS_{COM1} \rightarrow FS_{TG} (\beta_{12}) &gt; FS_{COM2} \rightarrow FS_{TG} (\beta_{13})</math>.</p>
MDS	<p>The examination of the spatial proximity between the variables defining the quality of the food systems of the compared countries (<math>FS_{TG}</math>, <math>FS_{COM1}</math>, and <math>FS_{COM2}</math>) and their respective images (<math>CI_{TG}</math>, <math>CI_{COM1}</math>, and <math>CI_{COM2}</math>) is expected to reveal a shorter perceptual distance between food systems and images of the countries considered as immediate pack members than the perceptual distance between the food systems and images of countries that do not trigger the same level of association at the industry level.</p>
DFA	NA

**Table 7. Hypothesis Testing Method - Hypothesis #4**

<p><i>H4: The perception of the food industry of a specific country is influenced more by attitudes towards the food industries of other pack members than by the image of that country.</i></p>	
Method	Description
SEM	<p>Hypothesis 4 will be supported if the path coefficient (<math>\beta_{12}</math> or <math>\beta_{13}</math>) linking the perception of the quality of the food system of a targeted country's competitor (<math>FS_{COM1}</math> or <math>FS_{COM2}</math>) to the perception of the quality of the food system of the targeted country (<math>FS_{TG}</math>) is larger than the path coefficient (<math>\beta_{11}</math>) linking the perception of the targeted country's image (<math>CI_{TG}</math>) to the perception of the quality of its food system (<math>FS_{TG}</math>).</p> <p>Thus, the pack membership cue &gt; the COO cue  if <math>FS_{COM1} \rightarrow FS_{TG} (\beta_{12}) &gt; CI_{TG} \rightarrow FS_{TG} (\beta_{11})</math> or  <math>FS_{COM2} \rightarrow FS_{TG} (\beta_{13}) &gt; CI_{TG} \rightarrow FS_{TG} (\beta_{11})</math>.</p>
MDS	<p>The examination of the spatial proximity between the variables measuring the constructs of the country image (CI) and quality of the food system (FS) in application to the targeted country and its competitors is expected to reveal the basis of the association among the three food systems (<math>FS_{TG}</math>, <math>FS_{COM1}</math>, and <math>FS_{COM2}</math>) in relation to their respective images (<math>CI_{TG}</math>, <math>CI_{COM1}</math>, or <math>CI_{COM2}</math>).</p>
DFA	NA

**Table 8. Hypothesis Testing Method - Hypothesis #5**

<p><i>H5: Familiarity with products from a country moderates the relative importance of the country-of-origin image cue in relation to the pack membership cue. [More specifically, higher product familiarity results in lower reliance on the pack membership cue in relation to the country of origin image cue.]</i></p>	
<b>Method</b>	<b>Description</b>
SEM (MGA*)	<p>Hypothesis 5 will be supported if the relative importance of the country-of-origin image cue (<math>CI_{TG} \rightarrow FS_{TG}</math>) in relation to the pack membership cue (<math>FS_{COM1} \rightarrow FS_{TG}</math> or <math>FS_{COM2} \rightarrow FS_{TG}</math>), as postulated in Hypothesis 4, is significantly higher for consumers familiar with Canadian products than for those unfamiliar with Canadian products.</p> <p>Consumers were placed in the “familiar” group if their response to the question measuring their knowledge of Canadian products was 4 or higher on a 7-point scale. Consumers who indicated 3 or lower for the same question were classified as “unfamiliar”.</p>
MDS	NA
DFA	NA

\*Multiple-group analysis

**Table 9. Hypothesis Testing Method - Hypothesis #6**

<i>H6: Countries with unique standing in the food industry are less prone to category-based evaluation than countries with no such position.</i>	
<b>Method</b>	<b>Description</b>
SEM	Hypothesis 6 will be supported if the relative importance of the country-of-origin image cue ( $CI_{TG} \rightarrow FS_{TG}$ ) in relation to the pack membership cue ( $FS_{COM1} \rightarrow FS_{TG}$ or $FS_{COM2} \rightarrow FS_{TG}$ ), as postulated in Hypothesis 4, is significantly higher for France (when France is a targeted country in the model) than it is for Canada (when Canada is a targeted country in the model).
MDS	The examination of the spatial proximity between the variables measuring the perception of the quality of the evaluated food systems is expected to reveal a longer perceptual distance between the French food system and the food system of each competitor in the German market (i.e., Canada and the U.S.) than the distance between the food systems of those competitors.
DFA	The analysis of the discrimination function(s) for the food systems of the three countries ( $FS_{TG}$ , $FS_{COM1}$ , and $FS_{COM2}$ ) is expected to reveal a large distance between the centroid of France and that of the other countries (i.e., Canada and the U.S.). Moreover, the analysis can provide insight as to the basis of France's uniqueness in terms of the attributes of its food system.

#### **4. DATA ANALYSIS**

This section reports the results of the data analysis based on the data collected in four surveyed markets (i.e., Germany, Great Britain, Japan, and the U.S.). The research findings obtained by means of three statistical techniques, described in the methodological strategy section, will be described for each country separately. Due to space considerations, only the section dedicated to the evaluation of the German data will illustrate the methodological approach being used in this study. Consequently, the data analysis of the remaining three countries will be restricted to the interpretation of the outputs of the Structural Equation Modeling, Multidimensional Scaling, and Discriminant Function Analysis. It must be stressed that the pack membership model tested in international markets is designed for Canada as the target country. However, for the purpose of testing Hypothesis #6, concerned with the relative strength of the COO cue and the pack membership cue in accounting for attitudes towards the food system of a country perceived as unique in the international food markets, an additional model with France as the target country was estimated for the German data.

To select the best set of indicators for the constructs of country image and quality of the food system across all data sets, the evaluation of these two scales will be performed upfront in the assessment of constructs section (4.1). The section will provide an assessment of the validity, reliability, and dimensionality of the constructs defined in terms of reflective indicators. It should be noted that the item purification will be based on responses to the questions concerning Canada's country image and its food industry in the four tested markets. Once the indicators of the two constructs are identified, they will

be used consistently in further analyses (i.e., the research findings sections for each surveyed market).

The description of the findings will focus on the main argument of this dissertation, which asserts the significant absolute and relative effects of the pack membership cue on consumers' evaluation of the quality of the Canadian food system. In accordance with the objectives of the research, considerable emphasis will also be placed on the similarity between food systems of countries that are hypothesized to belong to the same sub-pack. The comprehensive evaluation of the results of hypothesis testing will be presented in the summary, discussion, and assessment of the research section (5).

#### **4.1. ASSESSMENT OF CONSTRUCTS**

The conceptual synthesis of latent variables and the measurement model is considered by scholars (Bollen, 1998; Kline, 2005) as an integral part of structural equation modeling. Assessment of the measurement model involves tests of construct reliability, convergent validity, and discriminant validity (e.g., Bagozzi 1980; Gerbing and Anderson, 1988; Jarvis, Mackenzie, and Podsakoff, 2003). Methodological guidelines for scale development (e.g., Edwards and Bagozzi, 2000; Diamantopoulos and Siguaw, 2006) also emphasize the importance of understanding the relationships between the constructs and the measures. In a reflective perspective, assessment of the unidimensionality of the investigated constructs (Petter, Straub, and Rai, 2007) is a main prerequisite for structural equation modeling. Moreover, scale development procedures are often guided by the principle of parsimony which leads to item purification. In covariance-based models,

items with lower inter-item correlations tend to be eliminated (Diamantopoulos and Siguaw, 2006).

Internal consistency of responses within a single construct, which is based on the average inter-item correlation, is commonly tested by the reliability coefficient (i.e., Cronbach's coefficient alpha). A cut-off point of .7 has been considered by scholars (e.g., Nunnally, 1978) to be the minimum value of the alpha required to support the sufficient reliability of a scale. In these data sets, the standardized Cronbach's alphas (between .90 and .98) for all indicators of the two multi-point scales, the perception of country image (CI) and the perception of the quality of the food system (FS), exceed even the most conservative criteria (see Table 10).

**Table 10. Cronbach's Alpha**

	<b>Germany</b>	<b>GB</b>	<b>Japan</b>	<b>USA</b>
<b>Constructs:</b>				
Consumers' perceptions of <country> and its people image (11 items)	.90	.93	.95	.96
Consumers' perceptions of <country's> food system (16 items)	.93	.96	.97	.98

Convergent and discriminant validity are forms of validity that can be tested empirically (Bollen, 1989). According to Campbell and Fiske (1959), a correlation matrix of variables provides a basic test of convergent validity whereby the correlation of the different measures of the same construct are large in magnitude and significant. Hair et al. (2005) propose a value of a Pearson correlation of .5 or higher as an indicator of convergence in measurement. Pearson correlations for the pairs of indicators within each

measurement scale (CI and FC) are consistently significant at the .01 level, but tend to vary in magnitude depending on the surveyed market. It should be noted that the correlation tests were conducted on data that are not normal given that they were all measured on 7-point scales. However, for discrete data having 5 or more categories, the effect on simple correlations of discreteness of the variables is reduced (see, for example, Bollen, 1989, p. 434-435, and Thomas, Zhu, and Decady, 2007). Thus, for 7-item scales, discreteness should have minimal effect.

In the U.S., the lowest value of inter-item correlation for the food system scale is .55; in Germany, the lowest value of inter-item correlation is .25. Similar differences in the values of inter-item correlations exist for the country image scale. The correlations between the cross-scale items, which are relevant to discriminant validity, fall consistently below the cut-off point of .5. Table 11 presents the range of Pearson inter-item correlations for each surveyed market.

**Table 11. The Range for Pearson Correlations (Minimum to Maximum Values)**

	<b>Germany</b>	<b>GB</b>	<b>Japan</b>	<b>USA</b>
<b>Constructs:</b>				
Consumers' perceptions of <country> and its people image (11 items)	.31-.54	.39-.67	.45-.87	.53-.78
Consumers' perceptions of <country's> food system (16 items)	.25-.55	.43-.78	.47-.93	.55-.87

All Correlations are significant at the 0.01 level (1-tailed).

A close look at the correlation matrix leads to the conclusion that the purification of items may be feasible for the food system scale, but not the country image scale. In the latter case, low correlation was mostly found between individual items measuring Canada's economic or technical performance and items assessing other aspects of Canada's performance at the country level. In the former case, some measures show close association with the remaining measures; others do not. The items "I would be interested in having more food from Canada in my store," "I am willing to buy foods from Canada," and "Canadian food producers are interested in making foods that I would like to buy" perform the worst in terms of the Pearson correlations with other items of the food system scale across all markets. "Canadian farmers are concerned about the welfare of farm animals" and "Canadian food producers know how to make interesting new foods" may also be good candidates for removal from the list of items for further analysis.

As implied by classical test theory, the relationship between a construct and its indicators is assumed to be reflective (Fornell and Larcker, 1982). In turn, reflective indicators should be unidimensional (Petter, Straub, and Rai, 2007). Moreover, "unidimensional measurement models [where an indicator loads on only one factor in a CFA model] are more generally useful because they offer more precise tests of the convergence and discriminant validity of factor measurement" (Kline, 2005, p. 168).

To gain insight into the relationship between the two types of measures employed in this research and their corresponding latent constructs (i.e. the perception of country image and the perception of the quality of the food system), the responses to the questions

evaluating Canada as a country and the Canadian food system are subjected to an Exploratory Factor Analysis (EFA) with oblique rotation. The EFA analysis resulted in the extraction of two factors, one encompassing all measures of country image (11 items), the other capturing all measures of the quality of the food system (16 items). In contrast to the multidimensional nature of country image frequently reported in the country-of-origin literature, all variables measuring country image loaded on one factor in each surveyed market. Moreover, the low values of cross-loadings ( $<.17$ ) compared to the loadings of items on their respective construct ( $>.62$ ) provide evidence of convergent and discriminant validity. The summary of communalities obtained through principal axis factoring, which was conducted separately for measurements of the country image construct and the food system construct, are provided in Table 12a and Table 12b respectively. Since both analyses resulted in a one-factor solution, the values in the tables represent the squared multiple correlation coefficients between each measure and all other measures of the underlying construct.

**Table 12a. Communalities for the Country Image Construct**

<b>Items measuring consumers' perceptions of Canada and its people:</b>	<b>Germany</b>	<b>GB</b>	<b>Japan</b>	<b>USA</b>
Canada is a stable country	.44	.47	.63	.74
Canada has a good economy	.42	.47	.62	.54
Canada is technologically advanced	.45	.45	.61	.63
Canada has an environment with clean air and water	.42	.50	.44	.61
Canada has a good way of life	.44	.64	.64	.77
Canada is an ideal country	.39	.54	.73	.54
Canada has a good reputation in the world	.43	.60	.74	.75
Canadians are well educated	.47	.60	.68	.74
Canadians are hard-working people	.53	.60	.59	.70
Canadians are trustworthy people	.53	.52	.71	.73
Canadians are likeable	.44	.56	.64	.66
<i>Average Variance Extracted (AVE)</i>	.45	.54	.64	.67

Extraction Method: Principal Axis Factoring.

The table above shows that the proportion of variance explained by the common factor (i.e., the country image construct) varies across variables and samples. The average value of communalities was found to be much higher in Japan (.64) and the U.S. (.67) than in Germany (.45) or Great Britain (.54). In representing the construct of Canada's country image, the items related to general country reputation or trustworthiness seem to be weighted more heavily than items measuring the economy, technological advancement, or the environment. However, each of these items constitutes an essential measure of the construct under investigation and as such cannot be eliminated from the country image scale.

**Table 12b. Communalities for the Food System Construct**

	<b>Germany</b>	<b>GB</b>	<b>Japan</b>	<b>USA</b>
<b>Items measuring consumers' perceptions of the Canadian food system:</b>				
Canadian regulators ensure all Canadian-grown food is safe	.53	.59	.61	.74
Canada has a good reputation for producing food that is good to eat	.53	.68	.72	.77
I am willing to buy foods from Canada	.34	.49	.60	.61
Canada is well known for wholesome foods	.48	.57	.78	.75
Canadian farmers are concerned about food safety	.57	.63	.83	.80
Canadian farmers are concerned about food quality	.57	.64	.84	.83
Canadian farmers are concerned about growing foods in ways that are good for the environment	.50	.58	.80	.72
Canadian farmers are concerned about the welfare of farm animals	.39	.54	.60	.64
I can be confident to get good food products from Canada	.51	.68	.83	.82
Canadian food producers are interested in making foods that I would like to buy	.30	.60	.68	.64
Canadians know how to produce safe foods	.37	.67	.69	.79
Canadian food producers know how to make interesting new foods	.38	.53	.69	.61
Canadian food producers and processors are honest and trustworthy	.46	.61	.81	.77
Canadian food is always of high quality	.55	.69	.78	.79
I am satisfied with the foods I buy from Canada	.47	.59	.63	.74
I would be interested in having more food from the Canada in my store	.28	.48	.47	.59
<i>Average Variance Extracted (AVE)</i>	.45	.60	.71	.73

Extraction Method: Principal Axis Factoring.

Inspection of the communalities of the quality of the food system construct showed that some items displayed a relatively small multiple  $R^2$  in each of the surveyed markets. In order to represent relationships among the food system indicators parsimoniously, the items that fail to secure top loadings are removed from the pool of items being analyzed. For the item to be retained, the proportion of variance accounted for by the communality

of the item must not be more than .10 lower than that of the item with the top loading in at least two out of four surveyed markets. The intent of this empirically determined rule was to remove the least effective items in a systematic way, without drastically shortening the scale. Consequently, the following ten measures of the quality of the food system will be used in further analysis:

- <Country's> regulators ensure all <country's> domestically grown food is safe.
- <Country> has a good reputation for producing food that is good to eat.
- <Country> is well known for wholesome foods.
- <Country's> farmers are concerned about food safety.
- <Country's> farmers are concerned about food quality.
- <Country's> farmers are concerned about growing foods in ways that are good for the environment.
- I can be confident to get good food products from <country>.
- <Country's people> know how to produce safe foods.
- <Country's> food producers and processors are honest and trustworthy.
- <Country's> food is always of high quality.

It should be noted that, with exception of the item "I am satisfied with the foods I buy from Canada," all items that were eliminated from the food system scale based on their loadings were also selected for removal from the scale in the earlier investigations of the scale convergence involving Pearson inter-item correlations. From the theoretical perspective, the items retained for further analysis represent the category of perception measures but not that of behavioural orientation measures.

Finally, Fornell and Larcker (1981) recommend a procedure based on the calculation of the Average Variance Extracted (AVE), which complements the traditional Campbell and

Fiske approach. According to the authors, “the average variance extracted is sensitive to a lack of convergent validity and can be used to assess discriminant validity” (Fornell and Larcker, 1981, p. 47). Consequently, construct and discriminant validity can be further assessed using the LISREL estimates of a standard CFA model with two latent variables, one underlying Canada’s country image (11 indicators) and the other underlying Canada’s food system (10 indicators). The squared correlations between these latent variables (the elements off the diagonal) and the values of AVE (the elements on the diagonal), which measure the amount of variance captured by the indicators of each construct in relation to the amount of variance due to measurement error, are reported in Table 13. While the values of AVE greater than .5 provide evidence in support of construct reliability (Fornell and Larcker, 1981) in three out of four surveyed markets (i.e., Great Britain, Japan, and the U.S.), the values of the squared correlations between the two investigated constructs, ranging between .31 and .46 across survey markets, lend support to the discriminant validity. According to Kline (2005), in order to support discriminant validity, “estimated correlations between the factors” cannot be “excessively high (e.g.,  $>.85$ )” (p. 73). The comparison of the AVE estimate of each latent variable with the squared correlation (i.e., the squared phi) of this variable with another latent variable in the model, where the former is greater than the latter (Fornell and Larcker, 1981), suggest that these two constructs are conceptually and empirically distinct in all countries except Germany. However, the discriminant validity of these two scales was confirmed in four populations of interest by conducting an interconstruct discriminant validity test based on an approximate 95% confidence interval for the true correlation. As

displayed in Table 14, the discriminant validity coefficients don't exceed the low .70s. across surveyed markets.

**Table 13. Squared Correlations of Latent Variables and AVE**

	Germany		GB		Japan		USA	
	CI	FS	CI	FS	CI	FS	CI	FS
CI	.45		.54		.64		.67	
FS	.46	.51	.46	.63	.31	.77	.37	.78

*Note:*

- Diagonal entries are the Average Variance Extracted (AVE).
- Off-diagonal entries are the squared correlations between the country image construct (CI) and the food system construct (FS).

**Table 14. Discriminant Validity Test between CI and FS**

Germany	GB	Japan	USA
$\hat{\rho}_{CI-FS} = \sqrt{.46} = .68$ 95%CI = (.64; .72)	$\hat{\rho}_{CI-FS} = \sqrt{.46} = .68$ 95%CI = (.64; .72)	$\hat{\rho}_{CI-FS} = \sqrt{.31} = .56$ 95%CI = (.52; .60)	$\hat{\rho}_{CI-FS} = \sqrt{.37} = .61$ 95%CI = (.57; .65)

*Note:*  $\rho_{CI-FS}$  = the correlation between the country image construct (CI) and the food system construct (FS).

*Formula:* 95% Confidence Interval (CI) =  $\hat{\rho}_{CI-FS} - 1.96 \times \hat{Se}(\hat{\rho}_{CI-FS})$ ;  $\hat{\rho}_{CI-FS} + 1.96 \times \hat{Se}(\hat{\rho}_{CI-FS})$ .

where  $\hat{\rho}_{CI-FS}$  is the estimated correlation between CI and FS,  
 $\hat{Se}$  is a large sample estimate derived from the information matrix of the latent variable covariances, and  
 1.96 is the upper 97.5% point of the standard normal distribution.

## **4.2. RESEARCH FINDINGS FOR GERMANY**

This section presents the results of the analysis conducted on the German data, composed of the responses of 1,503 consumers. The data include responses to the questions assessing the perception of Canada and its food industry as well as the perception of Canada's two competitors, the U.S. and France, in the German market. Following the structure proposed in the methodological strategy section, SEM analysis is followed by MDS and DFA analysis.

SEM analysis based on the pack membership model is divided into three sections, each dedicated to a different hypothesis or set of hypotheses. The first two sections will be mirrored in the subsequent analyses conducted for other surveyed countries. The third section is specific to the German data, which includes France as one of the evaluated countries.

### **4.2.1. SEM Analysis (Germany)**

Since Canada is the focus of the statistical inquiries carried out in this study, assessments of all hypotheses, with the exception of Hypothesis #6, are based on the pack membership model, which was developed for Canada and introduced in Section 3.2.2. Consequently, the first four hypotheses (i.e., H1, H2, H3, and H4), tested in Section 4.2.1.1, are based on the SEM model with Canada as the target country. Hypothesis #5 is assessed in Section 4.2.1.2 by subjecting the pack membership model to multiple-group analysis conducted on two samples: German consumers familiar with Canadian products (size = 673) and German consumers unfamiliar with Canadian products (size = 830).

Finally, Hypothesis #6 is tested in Section 4.2.1.3 using a separate model that is estimated for France as the target country.

#### **4.2.1.1. SEM for Canada as the Target Country (Germany)**

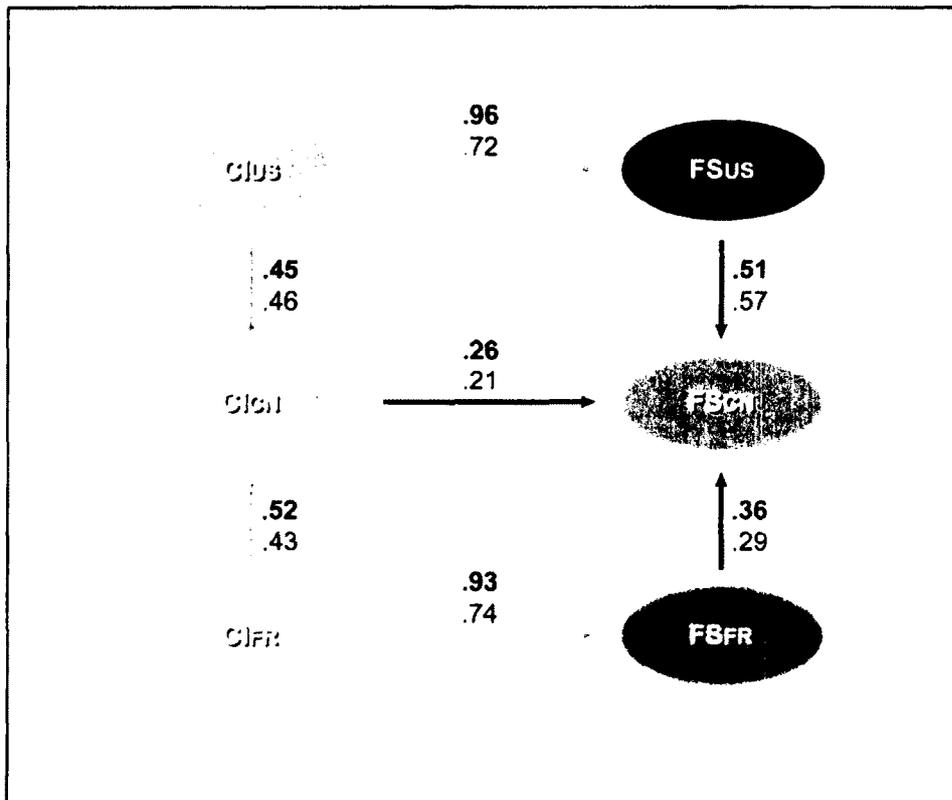
This section is dedicated to the evaluation of the SEM model with a focus on the assessment of parameter estimates and model fit. The ultimate goal of this statistical investigation is to reach a satisfactory understanding of the relationships between the “country image” latent construct and the “food system image” latent construct in explaining relationships in the perception of the Canadian food industry. Consequently, this section is concerned with testing of the baseline model referred to as the “Pack Membership” model.

##### ***4.2.1.1.1. Model Description and Interpretation***

The pack membership model, determined by means of a maximum likelihood estimation and computed by LISREL, version 8.72 is presented in Figure 4. In order to focus on the main relationships, the diagram omits the measurement models associated with each latent variable. All path coefficients in the model are described in terms of unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates. While both standardized and unstandardized estimates have their merits (Kline, 2005), the emphasis is placed on the former. In case of contradiction, unstandardized estimates take precedence over standardized estimates. The main argument behind the focus on unstandardized coefficients is that standardized coefficients are subject to sampling variability. Thus, standardized estimates may be inappropriate in

some situations including the analysis of a structural equation model across multiple samples (Kline, 2005). Moreover, “the most widely used estimation methods in SEM assume the analysis of unstandardized variables” (Kline, 2005, p.21). Standard errors and t-values for the model are provided in Table 15 on page 125.

**Figure 4. Pack Membership Model for Canada (Germany)**



Unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates

#### 4.2.1.1.1. Hypothesis #1

The relationships between country image of evaluated countries and their respective food systems, captured by paths  $CI_{US} \rightarrow FS_{US}$ ,  $CI_{FR} \rightarrow FS_{FR}$ , and  $CI_{CN} \rightarrow FS_{CN}$ , were supported by the model. All three path coefficients are positive and statistically significant at the .01

level. However, it should be noted that while the magnitude of the direct effects of  $CI_{US} \rightarrow FS_{US}$  (.72) and  $CI_{FR} \rightarrow FS_{FR}$  (.74) can be compared and considered equal, such a comparison cannot be made between either of these and  $CI_{CN} \rightarrow FS_{CN}$  (.21).

#### **4.2.1.1.1.2. Hypothesis #2**

The effect of the pack membership cue, postulated by hypothesis 2, is confirmed by the significance of the path coefficients linking the perception of the quality of the food systems of Canada's two competitors, the U.S. ( $FS_{US}$ ) and France ( $FS_{FR}$ ), to the perception of the quality of the Canadian food system ( $FS_{CN}$ ). Moreover, since the relative values of the standardized coefficients between the U.S. food system and the Canadian food system ( $FS_{US} \rightarrow FS_{CN}$ ) are much higher than those between the French food system and the Canadian food system ( $FS_{FR} \rightarrow FS_{CN}$ ), .57 and .29 respectively, the U.S. can be considered Canada's closer sub-pack member in the German food market.

#### **4.2.1.1.1.3. Hypothesis #3**

According to the predictions of Hypothesis 3, the relative strength of the relation between  $CI_{US} \rightarrow CI_{CN}$  and  $CI_{FR} \rightarrow CI_{CN}$  determines which country is more likely to be considered by a consumer when making a similarity judgment in the evaluation of the Canadian food system ( $FS_{CN}$ ). The hypothesis finds weak support in the standardized solution: the effect size of  $CI_{US}$  (.46) marginally exceeds that of  $CI_{FR}$  (.43). The opposite conclusion can be reached when comparing unstandardized path coefficients: the effect size for  $CI_{FR}$  is .52 whereas the effect size for  $CI_{US}$  is .45. Consequently, Hypothesis #3 is not supported by the German data.

#### 4.2.1.1.1.4. Hypothesis #4

The comparison of the predictive utility of  $CI_{CN}$  and  $FS_{US}$ , in terms of their impact on the perception of the Canadian food system ( $FS_{CN}$ ), reveals that the unstandardized direct effect of  $FS_{US}$  is two times greater than that of  $CI_{CN}$ .  $FS_{CN}$  is also better predicted by  $FS_{FR}$  than by  $CI_{CN}$ . The same conclusion can be reached based on the magnitude of the standardized path coefficients (see Figure 4 or Table 15). Thus, hypothesis 4, stipulating that consumers' perception of the Canadian food system is influenced more by attitudes towards the food system of other pack members than by the image of Canada as a country, is fully supported.

#### 4.2.1.1.2. Model Performance

As seen in Table 15, the estimated standard errors, which range from .025 to .052, are small relative to the coefficient estimates. All associated t-values (provided in Table 15) exceed the critical value of 2.58 required for two-tailed statistical significance at the .01 level.

**Table 15. Maximum Likelihood Parameter Estimates (Germany)**

Parameter	Unstandardized	SE	T-values	Standardized
$CI_{US} \rightarrow FS_{US}$	.96	.048	20.13	.72
$CI_{FR} \rightarrow FS_{FR}$	.93	.052	17.65	.74
$CI_{US} \rightarrow CI_{CN}$	.45	.034	13.34	.46
$CI_{FR} \rightarrow CI_{CN}$	.52	.042	12.40	.43
$CI_{CN} \rightarrow FS_{CN}$	.26	.031	8.39	.21
$FS_{US} \rightarrow FS_{CN}$	.51	.025	20.80	.57
$FS_{FR} \rightarrow FS_{CN}$	.36	.029	12.41	.29

*Note: All parameters are statistically significant at the .01 level.*

The estimated residual variances (see Table 16), reflecting unexplained variability which is likely to be due to constructs not entered into the model, are quite low for FS<sub>CN</sub> (.32) and CI<sub>CN</sub> (.29). The R<sup>2</sup>-value of .77 for FS<sub>CN</sub> ( $R^2 = 1 - \text{the standardized error variance}$ ) suggests that the model accounts for the variance in FS<sub>CN</sub> quite well. The second highest R<sup>2</sup>-value (.67) was obtained for CI<sub>CN</sub> (see Table 17).

**Table 16. Variances (Germany)**

Parameter	Unstandardized	SE	T-values	Standardized
CI <sub>US</sub>	.94	.070	12.79	1.00
CI <sub>FR</sub>	.59	.050	11.98	1.00
CI <sub>CN</sub> <sup>⊠</sup>	.29	.023	12.43	.33
FS <sub>US</sub> <sup>⊠</sup>	.80	.051	15.66	.48
FS <sub>FR</sub> <sup>⊠</sup>	.43	.035	12.30	.46
FS <sub>CN</sub> <sup>⊠</sup>	.32	.024	13.28	.23
⊠ The estimated <u>disturbance</u> variance				

Generally, model fit indices suggest that the model is reasonable, though some changes could be considered to improve its performance (see the discussion of possible changes in Appendix A). Since “there is no unique criterion for judging whether a model fits the data” (Yuan and Bentler, 2004, p. 737), fit measures lately recommended by scholars (Hu and Bentler, 1999; McDonald and Ho, 2002) and available in LISREL are reported. As shown in Table 17, four out of five fit statistics suggest that the model provides at least an acceptable fit. Whereas the value of SRMR = .066 indicates an excellent fit and the values of CFI = .94 and NNFI = .94 are considered an adequate fit, the value of RMSEA = .084 is a little too high for a good model. The 90 percent confidence interval for RMSEA (.083; .085) suggests that the data provide precise information about this aspect

of the model fit. Finally, the significant  $\chi^2$ -test = 21676.80 with 1882 degrees of freedom is the only statistic that challenges the model's ability to reproduce the data. However, this statistic is generally regarded as the result of an overly stringent test of model fit.

**Table 17. Fit Statistics (Germany)**

Index	Value
RMSEA (90% interval)	.084 (.083 ; .085)
CFI	.94
NNFI	.94
SRMR	.066
$\chi^2$ -test	21676.80
DF	1882
$\chi^2/DF$	11.52
P-value	.000

To some extent, the model fit statistics reflect some characteristics of the data, such as large sample size ( $n = 1,503$ ) and the correlations between exogenous latent variables in the model. According to Newsom (2005), most fit indices are directly or indirectly affected by the number of cases. It has been well established that the  $\chi^2$ -test is very sensitive in models based on very large samples (Bagozzi, 2010), particularly since it is a truism that no model ever fits the data exactly. Grace and Bollen (2005) claim that the  $\chi^2$ -test is appropriate for a sample not exceeding 200 cases. The  $\chi^2$ -test is also known to produce poor fit in the case of large correlations between variables (Fornell and Larcker, 1981). Consequently, the  $\chi^2$ -test does not provide useful information for evaluating the fit of this model.

Though RMSEA (the root mean square error of approximation) is acceptable according to the criterion (i.e.,  $RMSEA < .10$ ) proposed by Hu and Bentler (1999), the relatively

high value obtained in this model (.086) in relation to conservative criteria (<.06) may be due to the fact that the RMSEA test tends to “penalize for model complexity” (Bagozzi, 2010, p. 212). Despite this limitation, the test is highly recommended by a number of scholars (Browne and Cudeck, 1993; Hu and Bentler, 1998).

CFI (Comparative Fit index), favored by Hu and Bentler (1999) and recommended by McDonald and Ho (2002), along with RMSEA implies that the model is quite reasonable in terms of fit. CFI = .94 is just marginally below the most conservative cut-off value of .95 and beyond the .90 standard. Another incremental fit index – NNFI (non-normed fit index) with the value of .94 – confirmed the conclusion about the model based on CFI.

SRMSR (the standardized root mean square residual) advocated by Bentler (2007), Hu and Bentler (1998), and Lombardi and Massimiliano (2009), provided the most positive results for the model; The value of .066 is significantly smaller than the cut-off value of .09 and the target value of .08 proposed by Hu and Bentler’s (1999). However, in contrast to fit indices that penalize for sample size and model complexity, the value of SRMSR decreases with sample size and the number of parameters in the model. Consequently, the excellent fit in this model may be partially explained by data and model properties that favour this statistic.

#### **4.2.1.2. Two-Group Analysis (Germany)**

Multiple-Group Analysis is a means of estimating models for two or more groups simultaneously. It is also used as a tool in testing for structural and measurement

equivalence across groups (Bollen, 1989; Steenkamp and Baumgartner, 1998; Vandenberg and Lance, 2000) in a situation where constructs are operationalized by reflective indicators (Diamantopoulos and Papadopoulos, 2010). Studies utilizing multiple-group analysis seek to compare distinct groups with a goal of documenting differences in structural relationships between constructs while controlling for differences in scale reliability or construct nonequivalence (Steenkamp and Baumgartner, 1998). To this end, social science scholars implement multiple-group analysis to capture distinctions between males and females (Byrne, 1994), husbands and wives (Sabatelli and Bartle-Haring, 2003), and African Americans and Whites (Lynam et al., 1993). Multi-sample analysis is also used in comparing treatment and control groups (Pentz and Chou, 1994). In the international business domain, the technique is mostly applied in studies to establish construct equivalence across national samples (e.g., Hansen et al., 2011). The main concern of cross-cultural studies is that a construct may hold different meanings across the globe, in which case people in different countries would respond differently to the same set of items measuring the construct involved (Steenkamp and Baumgartner, 1998). Thus, since cultural and institutional differences are expected to influence respondent behaviour and performance (Hansen et al., 2011), different effect sizes across groups can only be assumed when a scale invariance can be established (Steenkamp and Baumgartner, 1998).

The simplest way to determine the difference in sensitivity to the pack membership cue between two groups of consumers, those who are familiar and those who are unfamiliar with products from Canada, as implied by Hypothesis #5, is to compare the differences in

path coefficients across groups. Although the approach is frequently utilized in social research, it may result in weak or erroneous conclusions (Steenkamp and Baumgartner, 1998). For the comparisons to be meaningful, it must be determined whether the difference in structural relations between constructs across groups is due to true differences between groups on the underlying latent variables or simply reflects a different performance of the instrument used in measuring theoretical constructs across the different conditions under which a given phenomenon is investigated (Horn and McArdle, 1992). Alternatively, the difference can be due to the systematic biases that accompany people's responses to certain items on the scale (Steenkamp and Baumgartner, 1998). Thus, the analysis conducted in this section will reflect the current state of knowledge concerning the best practices in accounting for bias associated with inadequate cross-group equivalence.

The main concern of this section is to determine whether the path parameters of the pack membership model differ across two groups (Section 4.2.1.2.2) and whether the difference is captured by the instrument that exhibits cross-group invariant constructs (Section 4.2.1.2.1). Since measurement invariance analysis is often confined within the framework of the confirmatory factor analysis (Milfont and Fisher, 2010; Vandenberg and Lance, 2000), Section 4.2.1.2.1 reports the results of the CFA model applied to the familiar and unfamiliar groups. It is worth noting that the reported statistics are very similar to those obtained through the corresponding path models.

#### ***4.2.1.2.1. Measurement Invariance***

Multiple-group analysis conducted on the SEM platform is recognized by many scholars as the superior way of performing cross-group comparison (Vandenberg and Lance, 2000; Cheung and Rensvold, 2002). Usually, testing of the equality of various parameters is based on multiple sample confirmatory factor analysis, as proposed by Joreskog (1971), wherein a CFA model is subjected to sequential testing procedures. The technique involves fitting a multiple-group model with different cross-group equality constraints applied to all groups simultaneously.

The strategies adopted by cross-disciplinary scholars to test across group invariance vary widely from study to study. The differences documented by Vandenberg and Lance (2000) are largely explained by the relevance of a particular form of measurement equivalence to a given study (Cheung, 2008). According to Bollen (1989), it is up to a researcher to determine which parameters should be subjected to cross-group comparison and in what sequence comparability tests should be conducted. “Once a hierarchy is established, we can test the hypotheses and assess which degree of invariance best matches the data” (Bollen, 1989, p. 360).

In contrast to the combined hypothesis in the cross validation test which examines all constrained parameters at once, the cross-group equivalence tests conducted in this section rely on a single hypothesis restricting the elements of one matrix at a time. Moreover, as recommended by Bollen (1989), the tests are arranged along a continuum from the least to the most restrictive models. The move to the next, more restrictive

hypothesis is based on the adequate fit of the preceding hypothesis in the hierarchy. Thus, the evaluation of configural invariance will be followed by the test of metric and scalar invariance.

#### **4.2.1.2.1.1. Configural Invariance**

Referred to as weak factorial invariance (Horn and McArdle, 1992), configural invariance is the most fundamental, though not sufficient, prerequisite for cross-group comparisons (Cheung, 2008). Configural invariance exists when the same simple structure can be found in two groups (Meredith, 1993). In this study, both familiar and unfamiliar consumers must relate the same items with the same constructs for configural invariance to be inferred (Milfont and Fisher, 2010). Thus, the hypothesis of configural invariance constrains the model to having the same structure across groups without constraining factor loadings to be the same in each group. Moreover, the error variances and the variances and covariances of the latent variables are not constrained to be equal across groups.

Configural invariance is assessed by evaluating model fit of a multiple-group model. Goodness-of-fit statistics for the hypothesis of configural invariance also establish the comparison standards for subsequent analyses of cross-group equivalence (Milfont and Fisher, 2010). Based on a satisfactory level of fit ( $CFI > .90$  and  $NNFI > .90$ ), it can be concluded that the model (see Table 18a) exhibits configural invariance across familiar and unfamiliar group.

**Table 18a. Fit Statistics for the Hypothesis of Configural Invariance (Germany)**

<b>Hypothesis</b>	<b>Chi-Square</b>	<b>DF</b>	<b>RMSEA</b>	<b>CFI</b>	<b>NNFI</b>
Configural ( $H_{form}$ )	25901.25*	3750	.089 (.088;.090)	.93	.93

\* $p < .001$

#### **4.2.1.2.1.2. Metric Invariance**

The next question is whether the members of two groups share the same conceptual frame of reference when responding to the measurement instrument (Vandenberg and Lance, 2000). Since the test of metric invariance assesses the slopes relating the indicators to the underlying latent variables (Bollen, 1989, p. 366), it can establish the consistency of the strength of the relationship between observed variables and associated latent variables across groups (Cheung, 2008).

Metric invariance is tested by constraining unstandardized factor loadings to be equal across groups. The null model ( $H_0$ ), which states that factor loadings of the measurement model are the same across groups, is contrasted with the alternative model ( $H_1$ ), which allows the factor loadings to be different across groups. Following Kline's (2005) argument that groups are expected to differ in their variabilities on either the common or unique factors, even though the indicators relate to the common factors in the same ways across groups, the parameters for the error variances and the variance and covariance of the factor loadings are freely estimated.

Since the null model is nested in the alternative model, the relative fit can be assessed (Bollen, 1989) by comparing the goodness-of-fit statistics for the models presented in

Table 18b. As expected, the decline in  $\chi^2$  (288.07 with 57 df) is significant. However, a comparison of the other overall fit measures (RMSEA = .089, CFI = .93, and NNFI = .93) do not suggest decline in fit.

Thus, the CFA model with equality-constrained loadings performs very well in comparison to the unconstrained model<sup>5</sup>. Based on the results of the fit statistics, it can be expected that a one-unit increase in the latent variables results in “the same expected change in the same measure for both groups (Bollen, 1989, p. 368). The finding leads to the conclusion that the indicators measuring the constructs across groups are very compatible and that familiar and unfamiliar consumers conceptualize the latent variables used in the study in the same way.

**Table 18b. Fit Statistics for the Hypothesis of Metric Invariance (Germany)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
Constrained Model (H0)	26189.32	3807	.089 (.088;.090)	.93	.93
Unconstrained Model (H1)	25901.25	3750	.089 (.088;.090)	.93	.93

#### 4.2.1.2.1.3. Scalar Invariance

Once the equality of relations between indicators and underlying latent variables are determined in both groups by way of configural and metric invariance tests, the next question is whether the means of observed scores are the same across groups. For example, scalar invariance across groups of familiar and unfamiliar consumers would

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<sup>5</sup> CFI is independent of model parameters and sample size for testing measurement invariance (Cheung and Rensvold, 2002). The critical value of  $\Delta$ CFI greater than or equal to .01 indicates that the null hypothesis (H0) of invariance should be rejected (Cheung and Rensvold, 2002).

hold if individuals in both groups gave similar ratings to all scale items. If the members of one group, however, gave systematically lower or higher scores on the measures of the latent variables than the members of the other group, the difference in the intercepts across groups would cause scale displacement (Cheung, 2008), even if the slope relating indicators to their underlying constructs was the same for both groups (Bollen, 1989).

Scalar invariance is tested by setting constraints on the item intercepts to be equal across groups (H0). The alternative hypothesis (H1) does not restrict the item intercepts to be equal across groups. Both hypotheses restrict the slopes between the observed variables and the corresponding latent variables to be the same for both groups.

Change in the value of the  $\chi^2$  (392.77 with 57 df) suggests that the difference between the Metric Model and the Scalar Model is highly significant. The RMSEA statistic remained the same for both the constrained and the unconstrained models (.089). No decline in the value of CFI and NNFI when an equality constraint for the item intercepts is added suggests that the differences are not material.

**Table 18c. Fit Statistics for the Hypothesis of Scalar Invariance (Germany)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
Constrained Model (H0)	26582.09	3864	.089 (.088;.090)	.93	.93
Unconstrained Model (H1)	26189.32	3807	.089 (.088;.090)	.93	.93

#### **4.2.1.2.1.4. Summary of Measurement Invariance**

Configural, metric, and scalar forms of invariance are the main prerequisites for cross-group comparison (Vandenberg and Lance, 2000). Other types of invariance, such as uniqueness invariance, factor variance invariance, factor covariance invariance, and factor mean invariance, are tested only in specific contexts (Milfont and Fischer, 2010). Thus, the comparison of the relative fit statistics for the CFA models suggests that cross-group equivalence exists at the configural and metric levels. According to the “convention” adopted by Bollen (1989, p. 366), equivalence at those two levels is sufficient for comparing the means of the latent variable in two groups. However, Vandenberg and Lance (2000, p.9) assert that “demonstration of measurement equivalence is a logical prerequisite to the evaluation of substantive hypotheses regarding group differences, regardless of whether the comparison is as simple as a between-group mean differences test or as complex as testing whether some theoretical structural model is invariant across groups.” Vandenberg and Lance (2000) consider the test of scalar invariance as an integral part of the “measurement equivalence” analysis. As seen in Table 18c, the assumption of scalar invariance is supported by the data.

#### **4.2.1.2.2. Direct Effects across Groups (Hypothesis #5)**

In comparing the pack membership effect between consumers familiar with Canadian products and those unfamiliar with Canadian products, a multiple-sample model which simultaneously fits the data to two covariance matrices was estimated. By using a method that estimates one model across the two groups, each relationship specified by a theoretical model can be examined. Invariance of direct effects across groups is statistically tested by comparing the fit of the equality-constrained direct effects model

with the model that does not impose constraints on the estimates of the direct effects under investigation.

The constrained model, expressed as the null model (H0), states that the path coefficients of the structural model (the coefficients for the direct effects) are the same across groups. The unconstrained model or alternative model (H1) specifies no direct-effect constraints across the groups. No additional constraints were imposed on the model; the variance and covariance parameters of the model were free to differ across the two groups.

The specifications of the two-group model leads to an acceptable fit for both familiar and unfamiliar groups regardless of whether any constraints on parameter estimates were set. As shown in Table 19, the only statistic that significantly varies between the constrained model (H0) and the unconstrained model (H1) is the Chi-square test. However, taking into account a large sample size, the difference in value of the Chi-square tests (50.13 with 7 df) is not the best indication of whether the H0 model should be rejected. No deterioration in model fit is observed when other fit indices (i.e., RMSEA, CFI, and NNFI) are considered.

**Table 19. Fit Statistics for Structural Invariance (Germany)**

<b>Hypothesis</b>	<b>Chi-Square</b>	<b>DF</b>	<b>RMSEA</b>	<b>CFI</b>	<b>NNFI</b>
Constrained Model (H0)	26749.55	3771	.090 (.089;.091)	.93	.92
Unconstrained Model (H1)	26699.42	3764	.090 (.089;.091)	.93	.92

While overall model fit indices provide some evidence that the hypothesized model structure is the same across groups, the magnitude of the differences for some of the  $\gamma$ 's and  $\beta$ 's and the pattern of residuals may shed more light on the premise that the same model holds for both groups (Bollen, 1989). Thus, despite the macro fit conclusion based on the "omnibus" fit measures, which may not have sufficient power to detect differences in some structural parameters, the corresponding path coefficients across groups are subjected to the two-sample z-test.

Presented in Table 20 and Figure 5 are the ML parameter estimates for the unconstrained model. Though the interpretation of standardized estimates may be problematic since groups tend to differ in their variability (Kline, 2005), they are reported in the table to compare parameters within each group. As in the analysis of the single-group models, several estimates of the corresponding path coefficients appreciably differ across the two groups. The two-sample z-test for independent groups reveals that, with the exception of the path coefficient between  $FS_{FR} \rightarrow FS_{CN}$ , the estimates of the corresponding  $\beta$ 's parameters differ significantly. Significant differences were also found between two pairs of the  $\gamma$ 's parameters estimates,  $CI_{US} \rightarrow CI_{CN}$  and  $CI_{FR} \rightarrow CI_{CN}$ .

**Table 20. Estimates for Two-Group Model (Germany)**

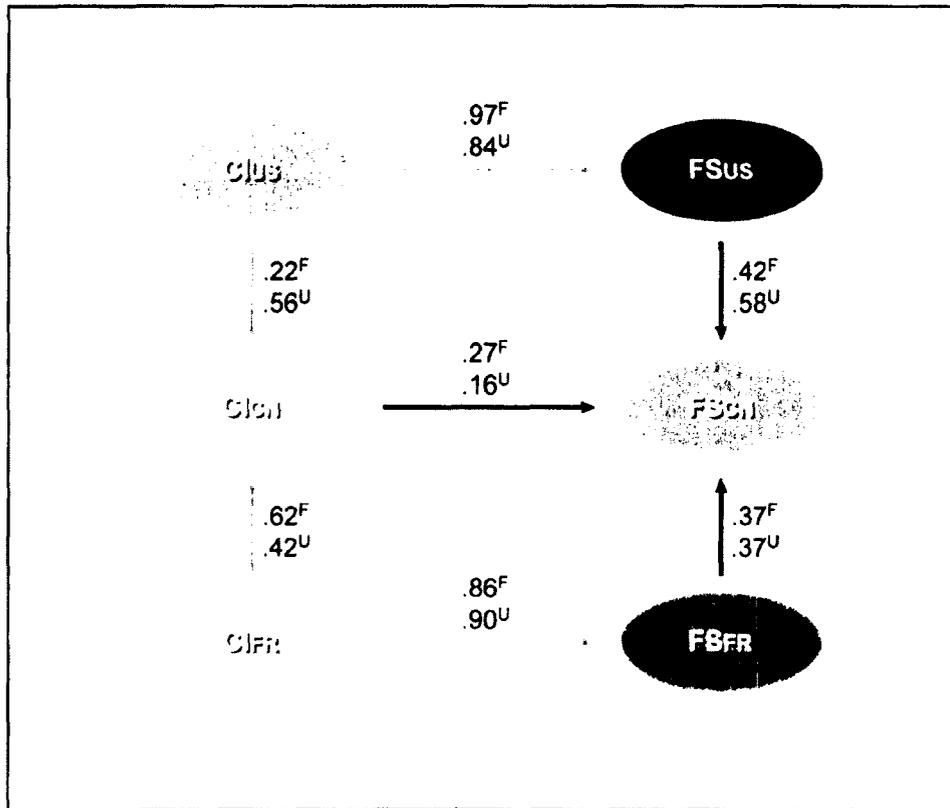
Parameter	Unstandardized	SE	Standardized
Path	Familiar / Unfamiliar	Familiar / Unfamiliar	Familiar / Unfamiliar
CI <sub>US</sub> →FS <sub>US</sub>	.97 <sup>F</sup> / .84 <sup>U</sup>	.079 <sup>F</sup> / .055 <sup>U</sup>	.77 <sup>F</sup> / .67 <sup>U</sup>
CI <sub>FR</sub> →FS <sub>FR</sub>	.86 <sup>F</sup> / .90 <sup>U</sup>	.071 <sup>F</sup> / .073 <sup>U</sup>	.70 <sup>F</sup> / .73 <sup>U</sup>
CI <sub>US</sub> →CI <sub>CN</sub>	.22 <sup>F</sup> / .56 <sup>U</sup> ***	.042 <sup>F</sup> / .047 <sup>U</sup>	.23 <sup>F</sup> / .60 <sup>U</sup>
CI <sub>FR</sub> →CI <sub>CN</sub>	.62 <sup>F</sup> / .42 <sup>U</sup> **	.063 <sup>F</sup> / .055 <sup>U</sup>	.52 <sup>F</sup> / .35 <sup>U</sup>
CI <sub>CN</sub> →FS <sub>CN</sub>	.27 <sup>F</sup> / .16 <sup>U</sup> *	.050 <sup>F</sup> / .037 <sup>U</sup>	.27 <sup>F</sup> / .13 <sup>U</sup>
FS <sub>US</sub> →FS <sub>CN</sub>	.42 <sup>F</sup> / .58 <sup>U</sup> ***	.036 <sup>F</sup> / .035 <sup>U</sup>	.48 <sup>F</sup> / .65 <sup>U</sup>
FS <sub>FR</sub> →FS <sub>CN</sub>	.37 <sup>F</sup> / .37 <sup>U</sup>	.044 <sup>F</sup> / .039 <sup>U</sup>	.32 <sup>F</sup> / .32 <sup>U</sup>

<sup>F</sup> Group familiar with Canadian products;  
<sup>U</sup> Group unfamiliar with Canadian products

*Note: Group differences are statistically significant at:  
\* the .1 level, \*\* the .05 level, or \*\*\* the .01 level.*

The differences in both standardized and unstandardized estimates for the relevant path parameters support Hypothesis #5. In terms of the unstandardized coefficient, the direct effect of the Canadian image on the Canadian food system (CI<sub>CN</sub> on FS<sub>CN</sub>) is significantly higher among familiar consumers than among unfamiliar consumers (.27 vs. .16;  $z = 1.77, p < .1$ ). At the same time, the unstandardized estimate of the path between FS<sub>US</sub> and FS<sub>CN</sub> is significantly lower for the familiar group than for the unfamiliar group (.42<sup>F</sup> and .58<sup>U</sup> respectively;  $z = 3.19, p < .01$ ).

**Figure 5. Two-Group Pack Membership Model (Germany)**



<sup>F</sup> Familiar group; <sup>U</sup> Unfamiliar group

Finally, the relationship between FS<sub>FR</sub> and FS<sub>CN</sub>, as reflected in the unstandardized regression coefficients, is identical across the familiar group and the unfamiliar group (.37). However, a larger shift in the parameter estimates between groups is observed when comparing the path between competitors' country images (CI<sub>US</sub> and CI<sub>FR</sub>) and the Canadian country image (CI<sub>CN</sub>). Familiar consumers tend to make a stronger association between the French and Canadian image (CI<sub>FR</sub> → CI<sub>CN</sub> = .62<sup>F</sup>/.42<sup>U</sup>;  $z = 2.40, p < .05$ ); unfamiliar consumers, on the other hand, are more likely to perceptually connect Canada with the U.S. (CI<sub>US</sub> → CI<sub>CN</sub> = .22<sup>F</sup>/.56<sup>U</sup>;  $z = 5.40, p < .001$ ).

Goodness-of-fit statistics for both models, familiar and unfamiliar, are very similar to those for the “baseline” model which was estimated for all cases. The SRMR, CFI, and NNFI reflect a reasonable fit of all models to the data. Squared multiple correlations for the perception of the quality of the Canadian food system is higher for the unfamiliar group than for the familiar group (.79 vs. .73), indicating greater predictive power of the former.

#### **4.2.1.3. SEM for France as the Target Country (Germany)**

The SEM model for France as the target country is estimated for the sole purpose of testing Hypothesis #6. Consequently, only the estimates of the parameters relevant to the assessment of the relative strength of the two evaluated cues, namely the COO cue and the pack membership cue, are discussed, and no detailed information about the performance of the French model is provided.

Of course, creating a second model with France as the target country in place of Canada is not without its problems, as both models are fitted to the same dataset. When one (or more) models fit the same dataset, they are termed “equivalent models” (Kline, 2005, p. 64) and are typically not welcomed by the researcher. As noted by Kline, “it behooves the researcher to explain why his or her preferred model should not be rejected in favor of statistically equivalent ones.” The situation here is different, however. The model with Canada as target is the original model and all but one of the study hypotheses focus on it. The second, with France as target, is not an unwelcome by-product of the original model, but was constructed as a variant of it to test a specific hypothesis (namely hypothesis #6,

the “uniqueness” hypothesis). Thus having two (in this case close to) equivalent models is a desired outcome of the modeling.

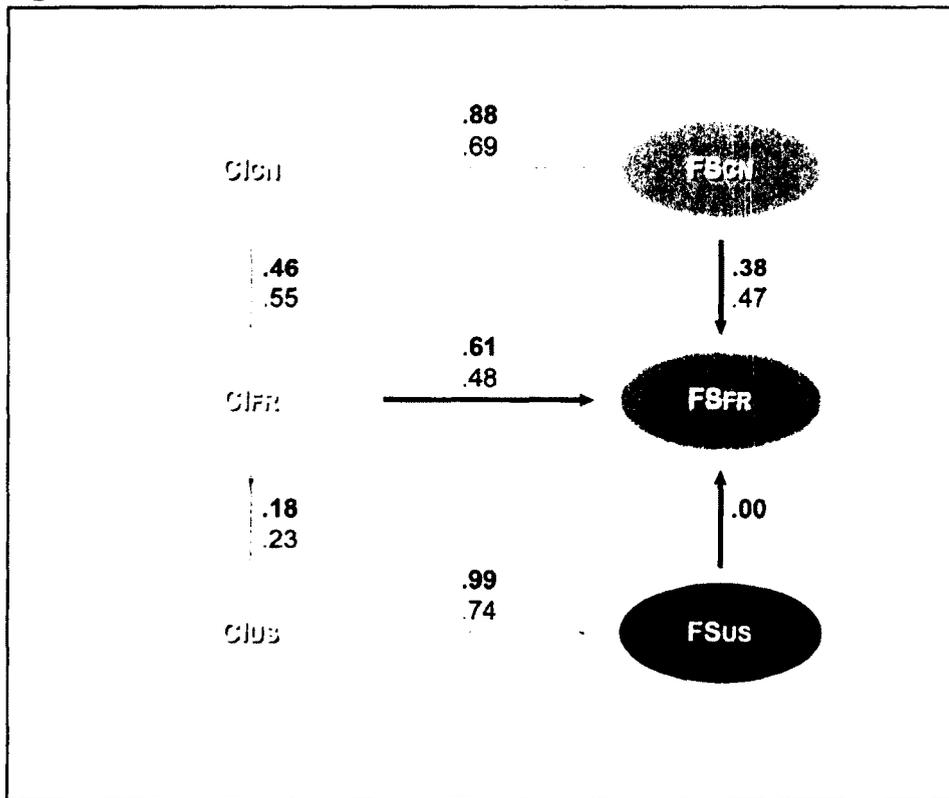
Equivalent models have identical values of the standard goodness-of-fit measures, e.g., those illustrated in Table 17 for the model with Canada as target. The model with France as target has several fit values that are identical, including RMSEA, CFI and NNFI. The chi-squared test value is not identical but differs from the Canada as target model by less than 2%. Thus the two models can be considered to be essentially equivalent, that is, they both provide very similar fits to the data. The following analysis, based on the model with France as the target country, can thus be considered as a viable approach to testing the uniqueness hypothesis.

#### ***4.2.1.3.1. Hypothesis #6***

As expected, the path coefficient linking the perception of the French country image and the quality of the French food system, which captures the COO effect, is significantly larger than the corresponding parameter in the Canadian model (the comparison is provided in Section 5.1). In relation to the COO effect, the pack membership effect depicted by the path coefficient between the food systems of either of France’s two competitors (i.e., Canada or the U.S.) and the French food system is low. Thus, since the relative importance of the country-of-origin image cue (.61) in relation to the pack membership cue (.38 or .00) is significantly higher for France in the French model than it is for Canada in the Canadian model, Hypothesis #6 is fully supported.

The added value of the French model is the insight it offers into the potential classification of the evaluated countries in the German food market. A significant overlap between the perception of the French and Canadian food systems suggests that the two countries constitute a sub-pack, the existence of which was detected in the Canadian model. However, no evidence of an association at the food system level was found between France and the U.S.

**Figure 6. SEM Model for France (Germany)**



Unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates

It should be noted that there are the slight differences in the values of the link between CIUS and FSUS for the two models illustrated in Figures 4 and 6. The slight differences

are real, and are due to the linkages between the measurement models for each of the latent variables, linkages that are propagated by the structural model parameters.

#### ***4.2.1.3.2. Model Fit***

The fit of the French model in terms of RMSEA (.084), CFI (.94), and NNFI (.066) is identical to that of the Canadian model reported in Section 4.2.1.1. The finding suggests that the selected indicators for the two measured scales (i.e. country-of-origin and the quality of the food system) perform equally well in both models. However, the  $R^2$ -value of .68 for the French model indicates that the latent variables employed by the model don't explain the variance in the perception of the quality of the French food system to the same degree as the latent variables in the Canadian model, which explain 77 percent of variance in the quality of the Canadian food system.

#### **4.2.1.4. Conclusion**

The magnitude and pattern of direct effects coupled with statistically significant path coefficients support most of the relationships postulated in the model. Thus, the results of the analyses conducted in this section have yielded strong support for hypotheses 1, 2, 4, 5, and 6. In contrast, Hypothesis #3 could not be supported by comparing the relative effect size of  $CI_{US} \rightarrow CI_{CN}$  and  $CI_{FR} \rightarrow CI_{CN}$ . While Canada was found to form a sub-pack with the U.S. based on the attributes of the food systems of these countries, the similarity at the food system level was not matched at the country level. According to the German data, Canada is associated with France as much as with the U.S. with regards to its country image.

Interestingly, familiarity seems to influence with whom Canada is most closely associated at the country level. Familiar consumers link Canada with France more than with the U.S., whereas unfamiliar consumers are more likely to associate Canada with the U.S. than with France.

#### **4.2.2. MDS Analysis (Germany)**

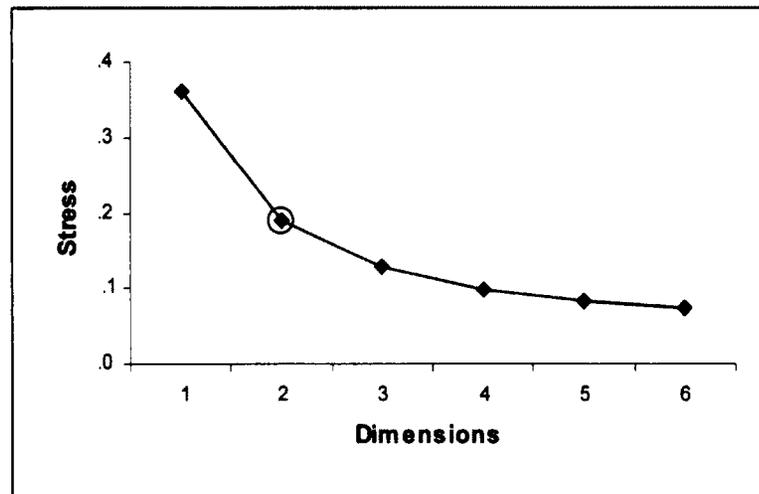
This study employs Multidimensional Scaling (MDS) technique to complement the covariance-based analysis in the previous section. As a means of obtaining “a geometric configuration of points” (Kruskal and Wish, 1978, p. 7), MDS provides insight as to the structure of relationships between variables. “The multidimensional representations resulting from MDS are also often useful as the representational basis for various mathematical models of categorization” (Steyvers, 2002, p. 1).

Since the input to the analysis includes items from two measurement scales for three countries (Canada, the U.S., and France), the interpretation of dimensions is not the objective of the analysis. Instead, the focus of this analysis is on visualization of the distance between the perceptions of the food systems of the surveyed countries in relation to their respective images at the country level. Nevertheless, rotational indeterminacy in scaling procedures involving Euclidean distances allows for a change in orientation of axes to obtain optimal interpretability of the data (Steyvers, 2002).

#### **4.2.2.1. Model Description and Interpretation**

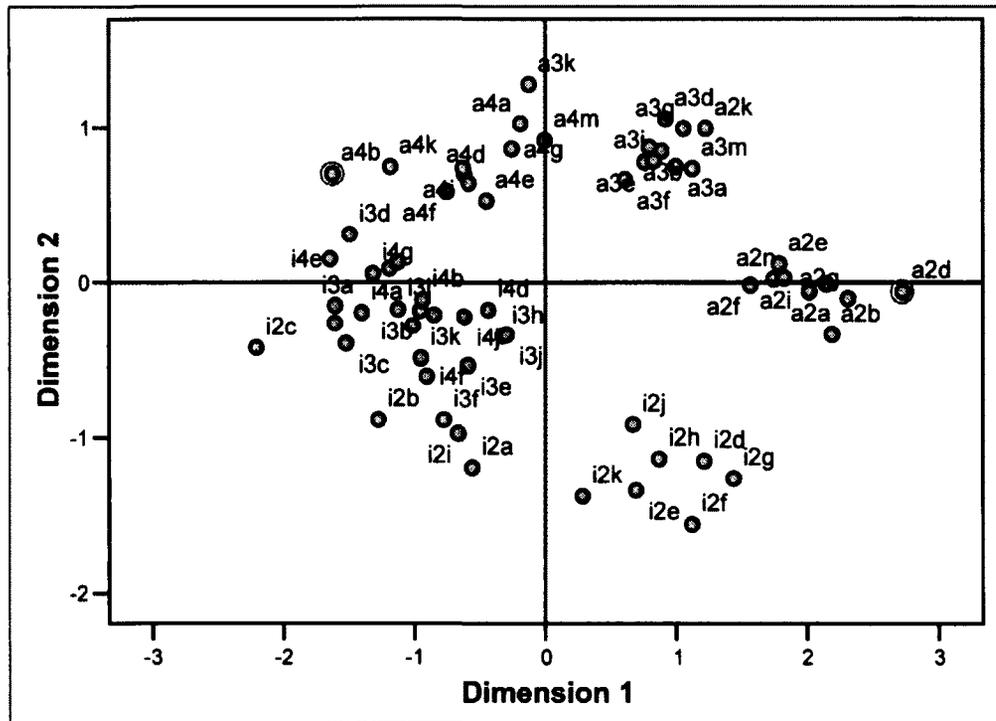
The MDS plot (Figure 8 on page 145) generated with the Euclidean distance shows the patterns of proximity among items measuring the perceptions of country image and food system for Canada, the U.S., and France (see Table 21a and 21b for a description of these items). Selection of the two-dimensional solution was based on the interpretability criteria suggested by Kruskal and Wish (1978). According to Steyvers (2002, p. 2), “A configuration with a high number of dimensions achieves very low stress values but cannot easily be comprehended by the human eye, and is apt to be determined more by noise than by the essential structure in the data.” However, the scree test, in which stress values are plotted against a number of dimensions, confirms the appropriateness of the chosen model. As seen in Figure 7, an elbow or the steepest descent appears at the two-dimensional solution.

**Figure 7. Scree Plot**



Based on two goodness-of-fit measures (i.e., stress index and squared multiple correlation), the model presented in Figure 8 reflects the assumption that all variables are at the interval level of measurement. The solution has a stress coefficient of .19 and accounts for 88% of the variance in the data. In comparison, an equivalent model based on the assumption that the data have been measured at ratio level has a stress coefficient of .34 and  $R^2$  of .68.

**Figure 8. MDS Model (Germany)**



**Table 21a. Country Image Items (Germany)**

Variables	<Country>		
	Canada	USA	France
Consumers' perceptions of <country> and its people image:			
<Country> is a stable country	i3a	i2a	i4a
<Country> has a good economy	i3b	i2b	i4b
<Country> is technologically advanced	i3c	i2c	i4c
<Country> has an environment with clean air and water	i3d	i2d	i4d
<Country> has a good way of life	i3e	i2e	i4e
<Country> is an ideal country	i3f	i2f	i4f
<Country> has a good reputation in the world	i3g	i2g	i4g
<Country's people> are well educated	i3h	i2h	i4h
<Country's people> are hard-working	i3i	i2i	i4i
<Country's people> are trustworthy	i3j	i2j	i4j
<Country's people> are likeable	i3k	i2k	i4k

**Table 21b. Food System Items (Germany)**

Variables	<Country>		
	Canada	USA	France
Consumers' perceptions of <country's> food system:			
<Country's> regulators ensure all <country's> domestically grown food is safe	a3a	a2a	a4a
<Country> has a good reputation for producing food that is good to eat	a3b	a2b	a4b
<Country> is well known for wholesome foods	a3d	a2d	a4d
<Country's> farmers are concerned about food safety	a3e	a2e	a4e
<Country's> farmers are concerned about food quality	a3f	a2f	a4f
<Country's> farmers are concerned about growing foods in ways that are good for the environment	a3g	a2g	a4g
I can be confident to get good food products from <country>	a3i	a2i	a4i
<Country's people> know how to produce safe foods	a3k	a2k	a4k
<Country's> food producers and processors are honest and trustworthy	a3m	a2m	a4m
<Country's> food is always of high quality	a3n	a2n	a4n

The MDS algorithm selects a particular orientation of items in the two-dimensional space based on numerical criteria in order to construct a graph. However, the orientation of the axes is not necessarily related to any marketing construct. The “naming” of dimensions may, in some cases, be possible after inspection, in the same way that factors in EFA are

identified. In this case, the configuration of items in the MDS plot (Figure 8) cannot be interpreted in terms of the “perceptual dimensions” that emerged as a result of the allocation of variables along the horizontal and vertical axes. However, the horizontal axis seems to separate high-scored items from low-scored items<sup>6</sup>. Point a4b (in the circle), representing the good reputation held by France for producing food that is good to eat, corresponds to the highest mean (5.4) given to an item in the food system scale across all surveyed countries. Point a2d (also in the circle) corresponds to the lowest mean value (3.5) in the data, received by the U.S. on the measure of being “well known for wholesome foods.” The distance between those two items (a4b and a2d), which is larger than the distance between any other items belonging to the food system scales, provides an intuitive rationale for the maximum separation between the French and U.S. food systems.

The second dimension seems to separate the perception of the food system of a survey country from its country image. The interpretation is particularly transparent when the configuration of items is rotated counterclockwise (approximately 25°). However, the arrangement of items within food system and country image domains is not intuitively obvious. The plausible explanation of the structure implied by the second dimension is that “country image” items that can be perceptually linked to the performance of the food system are closer to the respective “food system” items along the vertical axis. While items i4e (France has a good way of life), i4g (France has a good reputation in the world), and i4k (French people are likeable) are the closest to the spot in the space designated to

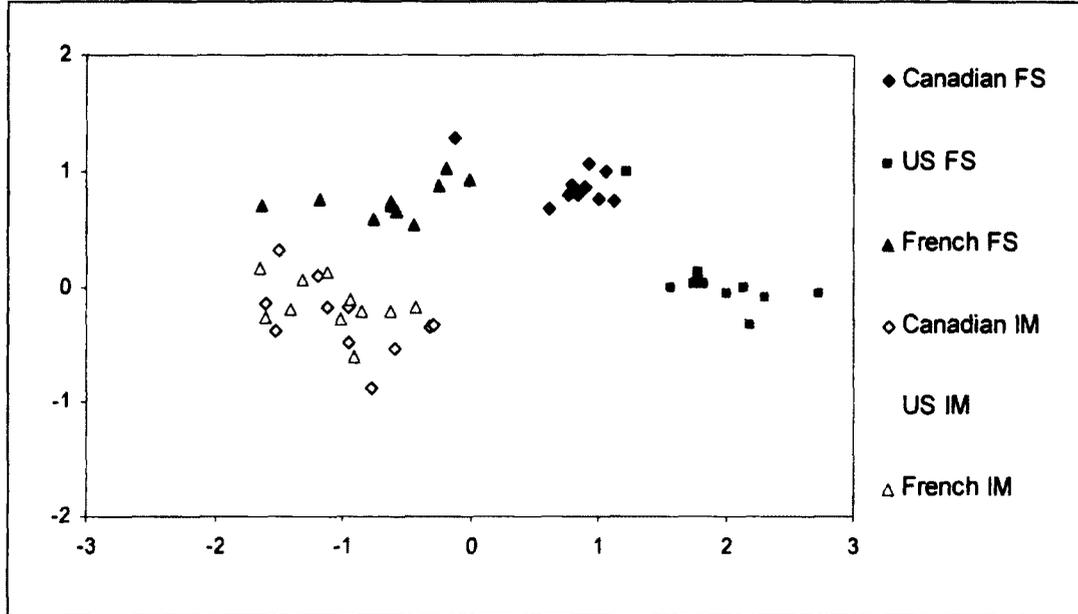
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<sup>6</sup> The means of scale measures for Canada and its competitors have been withheld due to confidentiality of the data.

the French food system (a4a-a4n), item i3d (Canada has an environment with clean air and water) is in the closest proximity to the area assigned to the Canadian food system (a3a-a3n). Finally, the shortest distance projected on the vertical axis between the centroids of the U.S. food system (a2a-a2n) and a measure of the US's country image was found for item i2c (the U.S. is technologically advanced).

Figure 9 (a simplified graphical version of the MDS plot created for ease of interpretation) illustrates that all measures of the quality of the French food system (French FS) tend to cluster on the top-left side of the diagram, while the same measures for the U.S. food system (US FS) are horizontally positioned on the opposite side of the diagram (in the middle of the right side of the graph). The Canadian food system (Canadian FS) is situated precisely between the food systems of its competitors. Whereas the items measuring the perception of the French country image (French CI) are in very close proximity to each other and to the items measuring the French food system (French FS), the measures of the U.S. country image (US CI) are rather spread out and further away from the measures of the U.S. food system (US FS). Items corresponding to the image of Canada as a country (Canadian CI) overlap with the reservoir of items measuring the French country image (French CI).

**Figure 9. Simplified MDS Model (Germany)**



**4.2.2.2. Conclusion**

The results of MDS analysis show the data in a different paradigm. The pictorial representation of the measured constructs not only exposes similarities and differences between them on the gradient scale, but also reveals sharp boundaries between some constructs, illustrating the fact that “though similar, [they] belong to different natural kinds and ... that objects of the same kind may nevertheless differ arbitrarily widely in some of their features” (Shepard, 1994, p. 23). Thus, each food system occupies a distinct place in customers’ perception of its performance along various measures of quality of comparative systems. However, with the exception of France, the two other food systems (i.e., Canadian and American) surveyed in Germany occupy a space relatively more proximate to each other than to the space claimed by their respective images at the country level. Despite the overlapping images of Canada and France at the country level, those countries don’t form a closer tie than that between Canada and the U.S. at the food

system level. In fact, geometrically, Canada's food system is located precisely in between those two food systems. While the French reputation for 'food good to eat' places its food system at the opposite end of the continuum from the US food system, which scores the lowest in terms of association with wholesome foods, Canada can be placed in a sub-category with either country.

#### **4.2.3. DFA Analysis (Germany)**

Discriminant function analysis is applied in this study to test the relationships between perceptions of the respective food industries of the surveyed countries according to consumer responses to a series of questions measuring different aspects of those food systems. The main purpose of this analysis is to determine based on mean differences which attributes of a particular food system contribute the most to the perception of difference between the quality of the Canadian food system and food systems of its competitors (i.e., the U.S. and France) in the German market. Moreover, the comparison among those countries at the food system level is expected to reveal the existence of a sub-pack or a pair of countries that are most similar with respect to the characteristics highlighted by the Discriminant Functions – a linear combination of variables that show maximum discriminability among the group means. Furthermore, the recognition of important discriminating variables helps to understand the identity of an individual country in terms of its standing in the food industry.

#### **4.2.3.1. Model Description and Interpretation**

In this study, only two discriminant functions, equal to the degrees of freedom, are estimated based on attributes of the Canadian food system and the food systems of its competitors (i.e., the U.S. and France). The first function with the largest eigenvalue ( $\lambda = .215$ ) “corresponds to the vector in the direction of maximum dispersion of the group means in the multidimensional space of the predictors” (SPSS, 1999, p. 2-35). The second function, independent of the first one, performs significantly worse in terms of the ratio of ‘between-groups’ to ‘within-groups’ sums of squares ( $\lambda = .013$ ). While the first discriminant function explains 18% of variance (the square of the canonical correlation, .421) in the discriminant scores as due to differences among the countries, the successive function explains only 1% of variance (sqrt (.101)). Though the statistically significant tests of unexplained variance (i.e., Wilks’ Lambdas) suggest the discriminatory power of variables in both functions, a value of lambda close to 1 (.990) for the second discriminant function implies that the separation among countries in terms of group means is very small or none (Norusis, 1990). Consequently, the second discriminant function will be discarded. Nevertheless, the function will be used to generate a two-dimensional graph (Figure 10), strictly for visual purposes.

**Table 22. Canonical Discriminant Functions (Germany)**

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.215(a)	94.3	94.3	.421
2	.013(a)	5.7	100.0	.113

a First 2 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.812	936.111	20	.000
2	.987	57.754	9	.000

The output of discriminant function analysis comprises two separate measures of the importance of individual variables in defining a particular discriminant function, namely, Standardized Discriminant Function Coefficients (SDFCs) and Structure Coefficients (SCs). SDFCs identify the subset of attributes that uniquely contribute to the discrimination among countries for each function. However, since each SDFC is estimated in the context of another coefficient, the stability of SDFCs can be compromised in case of high correlation among variables. In contrast, SCs indicate the pooled within-group correlations between discriminating variables and standardized canonical discriminant functions. Although SCs are not affected by multicollinearity, they don't provide information about redundancy of variables (Thomas, 1992). Thus, whereas the informational value of those coefficients is complementary, none of the coefficients can be used in isolation to produce reliable input for group discrimination. Consequently, based on a geometrical analysis, Thomas (1992) advocated the utility of

the parallel Discriminant Ratio Coefficients (DRCs) computed as the product of SDFC and SC coefficients.

**Table 23. SDFCs, SCs, and Parallel DRCs for the First Discriminant Function**

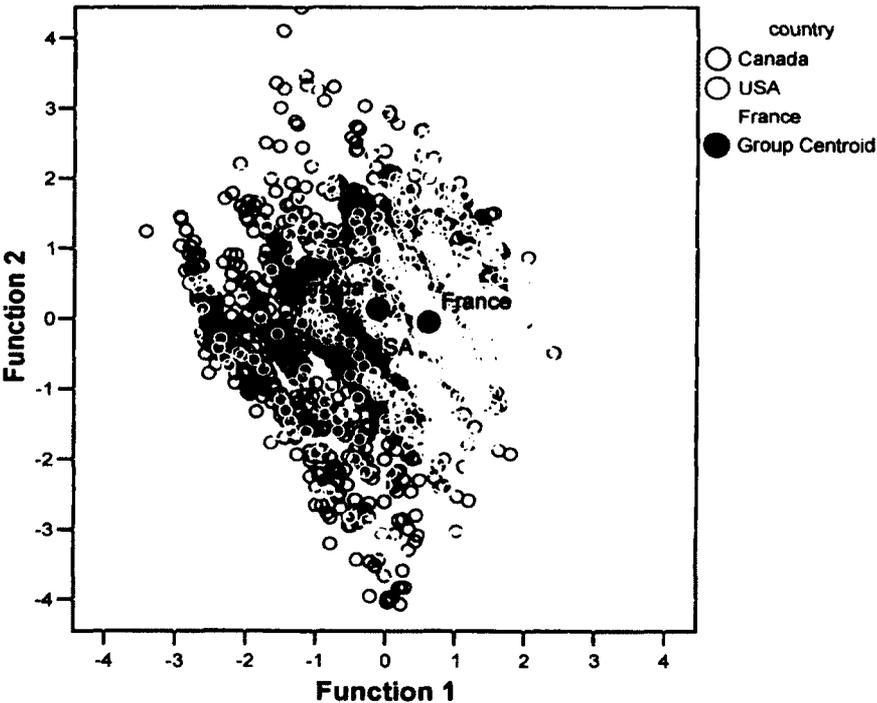
Variables	SDFC	SC	Parallel DRC <sup>1</sup>
a. <Country's> regulators ensure all <country's> domestically grown food is safe	-.117	.456	-.053
b. <Country> has a good reputation for producing food that is good to eat	.696	.902	.628
d. <Country> is well known for wholesome foods	.480	.798	.383
e. <Country's> farmers are concerned about food safety	-.087	.515	-.045
f. <Country's> farmers are concerned about food quality	-.051	.531	-.027
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.010	.533	.005
i. I can be confident to get good food products from <country>	.048	.605	.029
k. <Country's people> know how to produce safe foods	.051	.497	.026
m. <Country's> food producers and processors are honest and trustworthy	-.061	.488	-.030
n. <Country's> food is always of high quality	.132	.636	.084

<sup>1</sup> Parallel DRC = SDFC \* SC

Table 23 depicts the parallel Discriminant Ratio Coefficients (DRCs) which are used in this analysis to assess the relative importance of various attributes of the food system in accounting for the discrimination among countries. DRC's have the property of summing to one. Thomas (1992) suggested that variables having DRCs less than half the average value, that is  $1/2p$  (where  $p$  is the number of variables) be declared redundant, and also noted that small negative values can be treated as zeros. Subject to these "rules of thumb," it can be seen that only two variables remain as "important" discriminators, namely, "country has a good reputation for producing food that is good to eat" and "country is well known for wholesome foods."

Figure 10 displays the discriminant function scores for each country, together with their means (referred to as country centroids), plotted in the two-dimensional space of the discriminant functions (see Table 24 for numerical values of the centroids). It can be inferred from the plot that the first and only important function discriminates between France and the remaining two countries (i.e., Canada and the U.S.). As revealed by the classification function coefficients (Table 25), which can be used to identify the country to which an observation is most likely to belong, the relatively small difference between Canada and the U.S. along the first discriminant function is due to a difference in consumers' perceptions of how well known those countries are for wholesome foods. The "good to eat" criterion that places France in a category of its own doesn't discriminate between Canada and the US.

**Figure 10. Canonical Discriminant Functions (Germany)**



**Table 24. Functions at Group Centroids**

country	Function	
	1	2
Canada	-.117	.158
USA	-.500	-.104
France	.618	-.054

Unstandardized canonical discriminant functions evaluated at group means

**Table 25. Classification Function Coefficients (Germany)**

Variables	<Country>		
	Canada	US	France
a. <Country's> regulators ensure all <country's> domestically grown food is safe	.135	.134	.059
b. <Country> has a good reputation for producing food that is good to eat	.276	.262	.725
d. <Country> is well known for wholesome foods	.245	.005	.371
e. <Country's> farmers are concerned about food safety	.166	.168	.109
f. <Country's> farmers are concerned about food quality	.365	.413	.369
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.239	.159	.181
i. I can be confident to get good food products from <country>	.347	.362	.392
k. <Country's people> know how to produce safe foods	.745	.738	.772
m. <Country's> food producers and processors are honest and trustworthy	.320	.280	.246
n. <Country's> food is always of high quality	.398	.386	.481
(Constant)	-8.133	-6.871	-1.416

Fisher's linear discriminant functions

#### **4.2.3.2. Conclusion**

The results of DFA support Hypothesis #6 by demonstrating the distinctness of France from the other pack members. France's standing above its competitors can be traced along a discriminant function defined mostly by the country's reputation for "producing food that is good to eat" and being "well known for wholesome foods." Consequently, Canada is placed in the sub-pack with its neighboring country and trading partner, the US. It should be noted that this finding mirrors the results of the SEM analysis.

### **4.3. RESEARCH FINDINGS FOR GREAT BRITAIN**

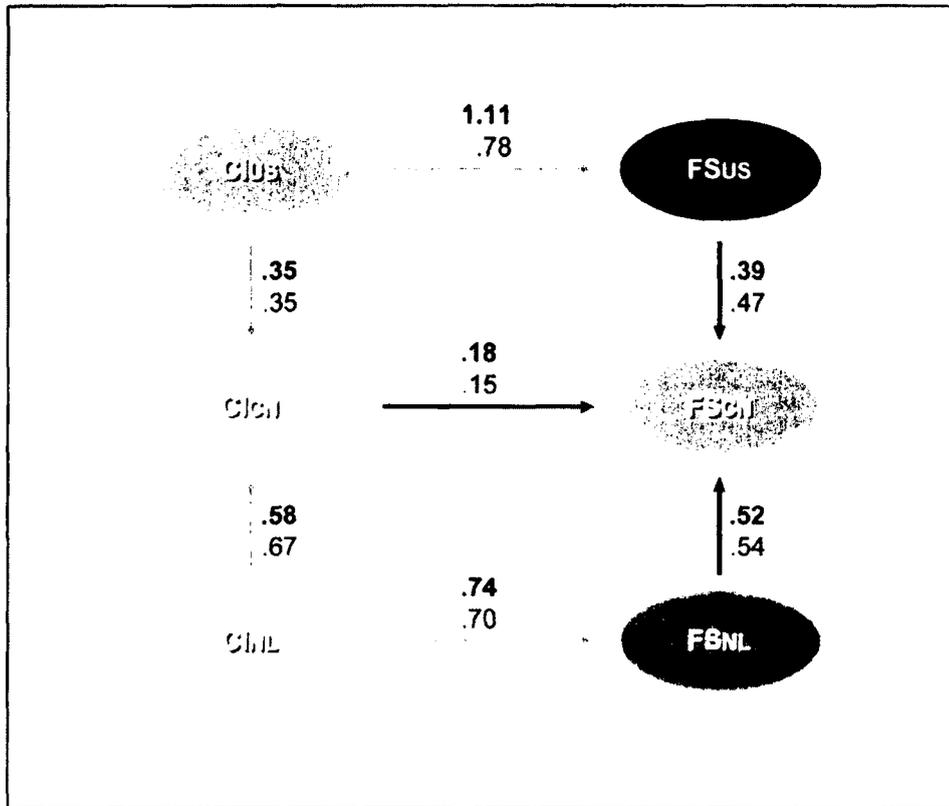
This section reports the results from the British market where the perception of Canada's image and food industry is compared with that of Canada's two competitors, the U.S. and the Netherlands. The findings are based on the responses of 1,504 British consumers, which have been subjected to SEM, MDS, and DFA analysis using the same approach as described in the previous analysis for Germany. For the purpose of multi-group analysis, the sample is split into two groups – consumers familiar with Canadian products and those who are unfamiliar (749 and 755 respectively).

#### **4.3.1. SEM Analysis (Great Britain)**

The unstandardized and standardized path coefficients for the pack membership model are shown in Figure 11 (on the next page). According to the associated t-values larger than 2.58 (see Table 26), all the coefficients are statistically significant at the .01 level. The performance of the model is assessed according to the estimated residual variances (Table 27) and fit statistics (Table 28).

As the path model shows, the direct effects of country image on the country's food system are positive and statistically significant, i.e.,  $CI_{US} \rightarrow FS_{US}$  (1.11),  $CI_{NL} \rightarrow FS_{NL}$  (.74),  $CI_{CN} \rightarrow FS_{CN}$  (.18). However, the relative contribution of the Canadian country image ( $CI_{CN}$ ) in explaining the variance in the perception of the quality of the Canadian food system ( $FS_{CN}$ ) is secondary when compared to the contribution of Canada's competitors. The latter effect, referred to as the pack membership effect, can be assessed by comparing the magnitude of the path coefficient  $CI_{CN} \rightarrow FS_{CN}$  (.18) with either of the paths  $FS_{NL} \rightarrow FS_{CN}$  (.52) or  $FS_{US} \rightarrow FS_{CN}$  (.39).

**Figure 11. Pack Membership Model (Great Britain)**



Unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates

The value of the path coefficients  $CI_{US} \rightarrow CI_{CN}$  (.35) and  $CI_{NL} \rightarrow CI_{CN}$  (.57) shows that Canada ( $CI_{CN}$ ) is more likely to be associated with the Netherlands ( $CI_{NL}$ ) than with the U.S. ( $CI_{US}$ ). Since the Canadian food system ( $FS_{CN}$ ) is perceived by British consumers as more compatible with the Netherlands' food system ( $FS_{NL}$ ) than with the U.S. food system, the associations between Canada and its respective competitors at the industry level can be attributed to the associations at the country level. Thus, the SEM model provides support for Hypothesis #1, #2, #3, and #4

**Table 26. Maximum Likelihood Parameter Estimates (Great Britain)**

Parameter	Unstandardized	SE	T-values	Standardized
CI <sub>US</sub> →FS <sub>US</sub>	1.11	.055	20.33	.78
CI <sub>NL</sub> →FS <sub>NL</sub>	.74	.033	22.12	.70
CI <sub>US</sub> →CI <sub>CN</sub>	.35	.025	14.33	.35
CI <sub>NL</sub> →CI <sub>CN</sub>	.58	.027	16.10	.67
CI <sub>CN</sub> →FS <sub>CN</sub>	.18	.025	7.54	.15
FS <sub>US</sub> →FS <sub>CN</sub>	.39	.017	22.24	.47
FS <sub>NL</sub> →FS <sub>CN</sub>	.52	.023	22.55	.54

*Note: All parameters are statistically significant at the .001 level.*

Unexplained variances for Canadian image (CI<sub>CN</sub>) and quality of the Canadian food system (FS<sub>CN</sub>) are rather low (.18 and .18 respectively). Consequently, the value of R<sup>2</sup> for the model (.85) is quite high. The fit of the model in terms of the incremental fit indices (CFI = .94 and NNFI = .94) is acceptable. However, the value of SRMR = .091 is slightly higher than the cut-off value of .09. The value of RMSEA (.11) with a 90 percent confident interval (.11; .11) indicates a problem with model specification or its complexity. The significant  $\chi^2$ -test = 37482.47 with 1882 degrees of freedom is also problematic but can be explained by the large size of the Great Britain sample and large correlations between indicators.

**Table 27. Variances (Great Britain)**

Parameter	Unstandardized	SE	T-values	Standardized
CI <sub>US</sub>	.89	.080	11.61	1.00
CI <sub>NL</sub>	1.19	.080	15.49	1.00
CI <sub>CN</sub> <sup>D</sup>	.18	.014	12.41	.20
FS <sub>US</sub> <sup>D</sup>	.71	.042	16.70	.39
FS <sub>NL</sub> <sup>D</sup>	.68	.043	16.10	.51
FS <sub>CN</sub> <sup>D</sup>	.18	.014	13.41	.15

<sup>D</sup> The estimated disturbance variance

**Table 28. Fit Statistics (Great Britain)**

Index	Value
RMSEA (90% interval)	.11 (.11 ; .11)
CFI	.94
NNFI	.94
SRMR	.091
$\chi^2$ -test	37482.47
DF	1882
$\chi^2/DF$	19.92
P-value	.000

**4.3.2. Two-Group Analysis (Great Britain)**

The comparative evolution of the configural model against the two nested models (Table 29) whose parameter constraints reflect the respective requirements of two forms of invariance assessment (i.e., metric and scalar) revealed no decline in the value of CFI (i.e., CFI = .94). Since familiar and unfamiliar groups are equivalent with respect to configuration, factor loading, and mean, they can be meaningfully compared in the two-group model.

**Table 29. Fit Statistics for Measurement Invariance (Great Britain)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
1. Configural Invariance ( $H_{form}$ )	39061.08	3750	.11 (.11; .11)	.94	.93
2. Metric Invariance ( $H_{\Lambda}$ )	39220.25	3807	.11 (.11; .11)	.94	.93
3. Scalar Invariance ( $H_{\Lambda\mu\kappa}$ )	39598.26	3864	.11 (.11; .11)	.94	.94

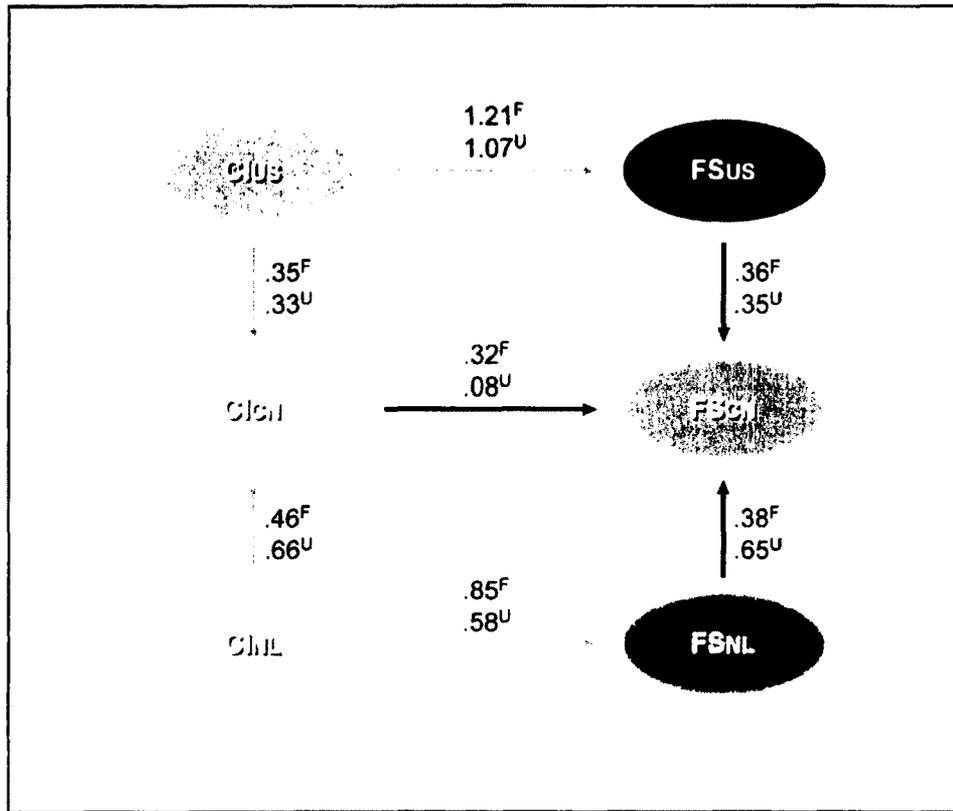
Fit indices (i.e., CFI and NNFI) for the equality-constrained direct effects model and for the unconstrained model (see Table 30) suggest that tested parameters (i.e.,  $\gamma$ 's and  $\beta$ 's) are not affected by the split of the data into familiar and unfamiliar consumers. However,

a closer look at the difference between some of the corresponding path coefficients reported in Figure 12 and Table 31 for the two groups suggests that the statistical power of the “omnibus” fit assessments may not be adequate to detect the hypothesized differences. Independent sample z-tests confirm appreciable differences between familiar and unfamiliar consumers in their utilization of the COO cue and the pack membership cue. As postulated (Hypothesis #5), familiar consumers are more likely than their unfamiliar counterparts to apply the Canadian image in their evaluation of the quality of the Canadian food system ( $CI_{CN} \rightarrow FS_{CN} = .32^F/.08^U$ ;  $z = 4.85$ ,  $p < .001$ ). At the same time, their reliance on the informational value of the quality of the food system of Canada’s immediate pack member (i.e., the Netherlands) in evaluating the Canadian food system is much lower when compared to that of unfamiliar consumers ( $FS_{NL} \rightarrow FS_{CN} = .38^F/.64^U$ ;  $z = 5.53$ ,  $p < .001$ ). The significantly lower relevance of the pack membership cue among familiar consumers can be explained by the perception of the lower degree of membership in the sub-pack formed by the Netherlands and Canada ( $CI_{NL} \rightarrow CI_{CN} = .46^F/.66^U$ ;  $z = 3.68$ ,  $p < .001$ ). In contrast, the impact of the U.S. food system on consumers’ judgment of the Canadian food system stays the same across groups ( $FS_{US} \rightarrow FS_{CN} = .36^F/.35^U$ ;  $z = .30$ ). The level of association between Canada and the U.S. is also equivalent for familiar and unfamiliar consumers ( $CI_{US} \rightarrow CI_{CN} = .35^F/.33^U$ ;  $z = .39$ ).

**Table 30. Fit Statistics for Structural Invariance (Great Britain)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
Constrained Model (H0)	39965.43	3771	.11 (.11 ; .11)	.93	.93
Unconstrained Model (H1)	39909.78	3764	.11 (.11 ; .11)	.93	.93

**Figure 12. Two-Group Pack Membership Model (Great Britain)**



<sup>F</sup> Familiar group; <sup>U</sup> Unfamiliar group

**Table 31. Estimates for Two-Group Model (Great Britain)**

Parameter	Unstandardized		SE		Standardized	
	Familiar / Unfamiliar		Familiar / Unfamiliar		Familiar / Unfamiliar	
Cl <sub>US</sub> →FS <sub>US</sub>	1.21 <sup>F</sup> / 1.07 <sup>U</sup>		.076 <sup>F</sup> / .092 <sup>U</sup>		.81 <sup>F</sup> / .72 <sup>U</sup>	
Cl <sub>NL</sub> →FS <sub>NL</sub>	.85 <sup>F</sup> / .58 <sup>U</sup> ***		.052 <sup>F</sup> / .043 <sup>U</sup>		.82 <sup>F</sup> / .57 <sup>U</sup>	
Cl <sub>US</sub> →Cl <sub>CN</sub>	.35 <sup>F</sup> / .33 <sup>U</sup>		.032 <sup>F</sup> / .039 <sup>U</sup>		.34 <sup>F</sup> / .32 <sup>U</sup>	
Cl <sub>NL</sub> →Cl <sub>CN</sub>	.46 <sup>F</sup> / .66 <sup>U</sup> ***		.033 <sup>F</sup> / .043 <sup>U</sup>		.55 <sup>F</sup> / .78 <sup>U</sup>	
Cl <sub>CN</sub> →FS <sub>CN</sub>	.32 <sup>F</sup> / .08 <sup>U</sup> ***		.042 <sup>F</sup> / .027 <sup>U</sup>		.28 <sup>F</sup> / .07 <sup>U</sup>	
FS <sub>US</sub> →FS <sub>CN</sub>	.36 <sup>F</sup> / .35 <sup>U</sup>		.024 <sup>F</sup> / .024 <sup>U</sup>		.46 <sup>F</sup> / .45 <sup>U</sup>	
FS <sub>NL</sub> →FS <sub>CN</sub>	.38 <sup>F</sup> / .65 <sup>U</sup> ***		.028 <sup>F</sup> / .040 <sup>U</sup>		.41 <sup>F</sup> / .70 <sup>U</sup>	

<sup>F</sup> Group familiar with Canadian products;

<sup>U</sup> Group unfamiliar with Canadian products

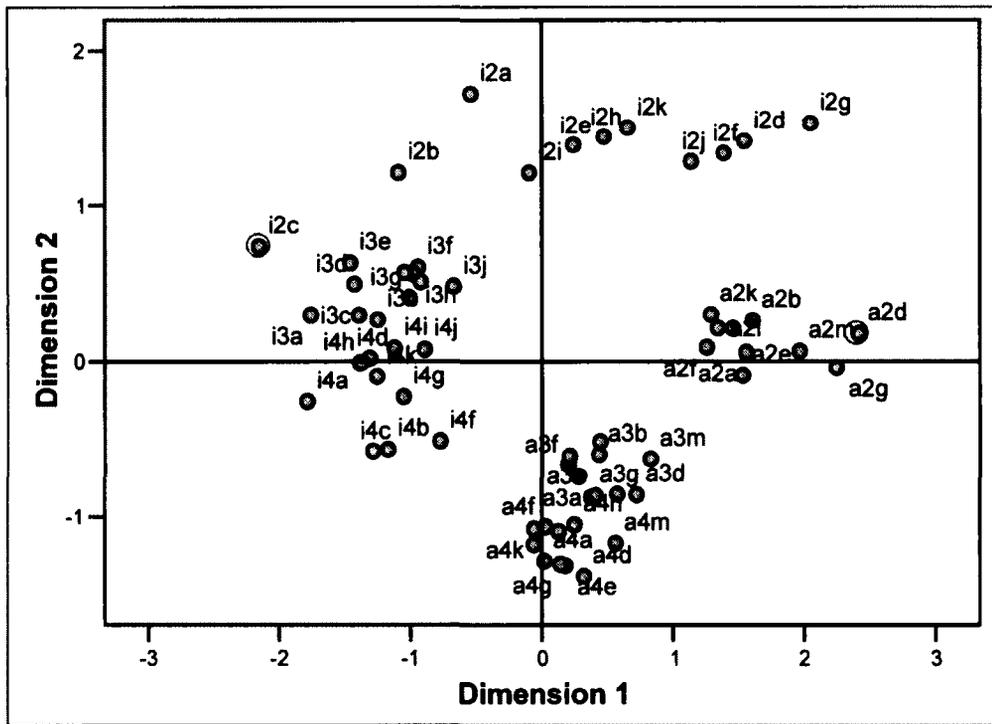
Note: Group differences are statistically significant at:

\* the .1 level, \*\* the .05 level, or \*\*\* the .01 level.

### 4.3.3. MDS Analysis (Great Britain)

The MDS model for the Great Britain data (Figure 13) shows spatial representation of the pattern of similarities or distances among items measuring the performance of three countries (i.e., Canada, the U.S., and the Netherlands) along two sets of scales. A simplified graphical version of the MDS plot is presented in Figure 14. Thus, the proximity between points in two-dimensional space is a function of their similarity in scores across all possible attributes of country image and quality of the food system. These items or attributes are labeled in Table 32a and Table 32b.

**Figure 13. MDS Model (Great Britain)**



**Table 32a. Country Image Items (Great Britain)**

Variables	<Country>		
	Canada	USA	NL
Consumers' perceptions of <country> and its people image:			
<Country> is a stable country	i3a	i2a	i4a
<Country> has a good economy	i3b	i2b	i4b
<Country> is technologically advanced	i3c	i2c	i4c
<Country> has an environment with clean air and water	i3d	i2d	i4d
<Country> has a good way of life	i3e	i2e	i4e
<Country> is an ideal country	i3f	i2f	i4f
<Country> has a good reputation in the world	i3g	i2g	i4g
<Country's people> are well educated	i3h	i2h	i4h
<Country's people> are hard-working	i3i	i2i	i4i
<Country's people> are trustworthy	i3j	i2j	i4j
<Country's people> are likeable	i3k	i2k	i4k

**Table 32b. Food System Items (Great Britain)**

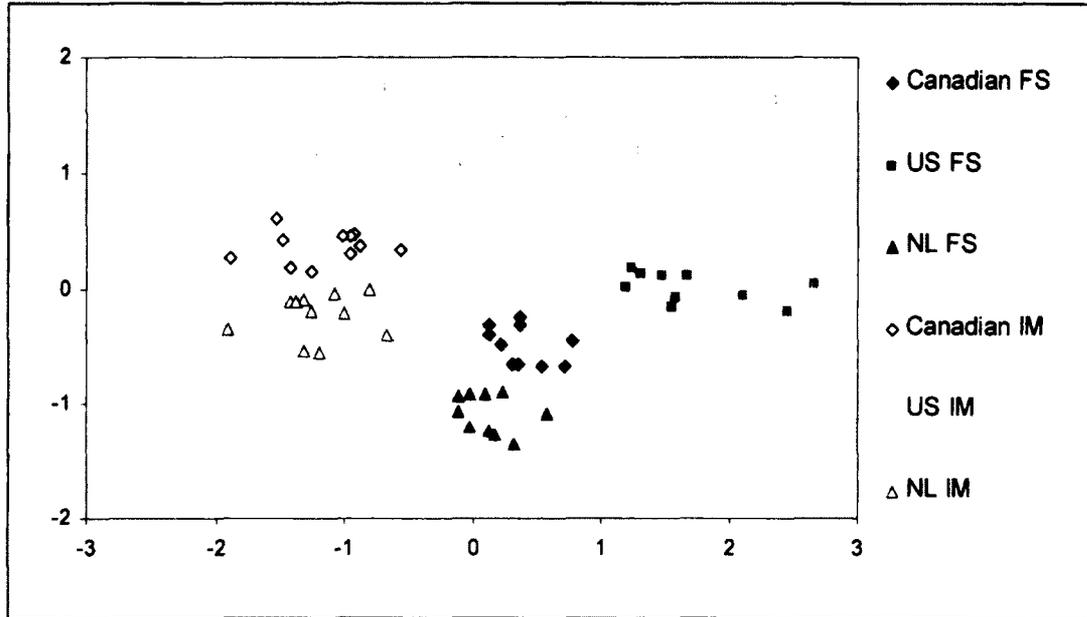
Variables	<Country>		
	Canada	USA	NL
Consumers' perceptions of <country's> food system:			
<Country's> regulators ensure all <country's> domestically grown food is safe	a3a	a2a	a4a
<Country> has a good reputation for producing food that is good to eat	a3b	a2b	a4b
<Country> is well known for wholesome foods	a3d	a2d	a4d
<Country's> farmers are concerned about food safety	a3e	a2e	a4e
<Country's> farmers are concerned about food quality	a3f	a2f	a4f
<Country's> farmers are concerned about growing foods in ways that are good for the environment	a3g	a2g	a4g
I can be confident to get good food products from <country>	a3i	a2i	a4i
<Country's people> know how to produce safe foods	a3k	a2k	a4k
<Country's> food producers and processors are honest and trustworthy	a3m	a2m	a4m
<Country's> food is always of high quality	a3n	a2n	a4n

As in the MDS plot obtained for the German data, the first dimension in the plot depicting the Great Britain data (Figure 13) appears to represent the mean scores of the enclosed indicators of country image and food system for Canada, the U.S., and the Netherlands. While the highest mean score goes to the U.S. for being a “technologically

advanced” country (i2c, in the circle), the lowest mean score goes to the U.S. for its poor reputation with regards to “wholesome foods” (a2d, in the circle). However, in contrast to the results for the German data, the Canadian food industry (a3a-a3n) is merged together with the industry of one of its competitors (i.e., the Dutch food industry, a4a-a4n). In other words, the Canadian food system overlaps with the Dutch food system along the vertical axis. The same pattern can be detected for the images of these two countries.

The U.S., as a country, can be described in terms of three “layers” of country image. The first layer encompasses the measures of the stability of the country (i2a), its economy (i2b), and technological advancement (i2c). The second layer combines variables assessing the perception of the American way of life (i2e) with the qualities of the American people, such as hard-working (i2i), well educated (i2h), and likeable (i2k). The third layer includes the items that represent the weakest aspect of the American image, namely American’s reputation in the world (i2g), the cleanliness of the American environment (i2d), the U.S. as an ideal country (i3f), and the trustworthiness of the American people (i2j). The last layer seems to be the one closest to the space assigned to the U.S.’s food system.

**Figure 14. Simplified MDS Model (Great Britain)**



#### **4.3.4. DFA Analysis (Great Britain)**

The Wilks' Lambda test (Table 33) suggests that only one discriminant function is statistically significant. The function with the eigenvalue equaling .044 explains 4.2% of variance in the discriminant scores received by the quality of the Canadian food system and food systems of its competitors (i.e., the U.S. and the Netherlands).

**Table 33. Canonical Discriminant Functions (Great Britain)**

<b>Eigenvalues</b>				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.044	95.2	95.2	.206
2	.002	4.8	100.0	.047

a First 2 canonical discriminant functions were used in the analysis.

<b>Wilks' Lambda</b>				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.956	204.876	20	.000
2	.998	9.988	9	.351

Table 34 points to the importance of three variables in discriminating among the quality of the evaluated food industries: 1) “Country’s farmers are concerned about growing foods in ways that are good for the environment”; 2) “Country is well known for wholesome foods”; and 3) “Country’s food producers and processors are honest and trustworthy”. Further analysis involving the classification function coefficients (see Table 35) reveals that no single attribute of the food system significantly distinguishes the quality of the Canadian food system from the quality of the Dutch food system. Consequently, the discriminating function is only effective in separating the U.S. food system from the remaining countries.

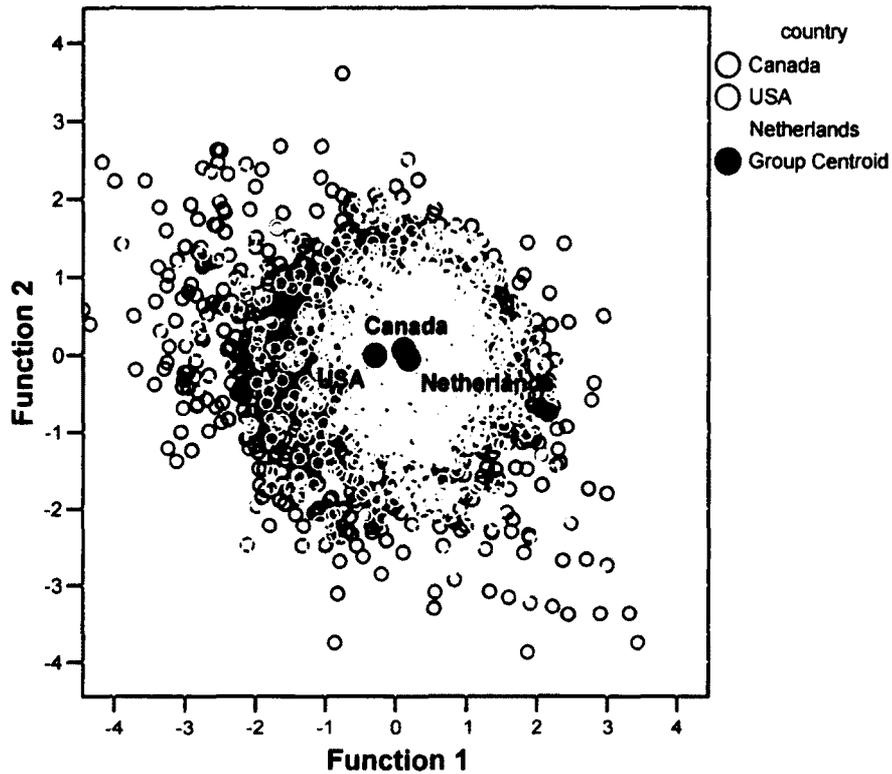
**Table 34. SDFCs, SCs, and Parallel DRCs for the First Discriminant Function**

Variables	SDFC	SC	Parallel DRC <sup>1</sup>
a. <Country's> regulators ensure all <country's> domestically grown food is safe	-.024	.227	-.005
b. <Country> has a good reputation for producing food that is good to eat	-.295	.228	-.067
d. <Country> is well known for wholesome foods	.878	.616	.540
e. <Country's> farmers are concerned about food safety	-.204	.246	-.050
f. <Country's> farmers are concerned about food quality	-.344	.221	-.076
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.999	.663	.662
i. I can be confident to get good food products from <country>	-.458	.148	-.068
k. <Country's people> know how to produce safe foods	-.234	.209	-.049
m. <Country's> food producers and processors are honest and trustworthy	.348	.402	.140
n. <Country's> food is always of high quality	-.101	.268	-.027

<sup>1</sup> Parallel DRC = SDFC \* SC

As depicted in Figure 15, the mean values of the discriminant function scores obtained by Canada and the Netherlands in close proximity to each other (.111 and .183). Thus, it can be concluded that these countries constitute a sub-pack with respect to the characteristics of their food systems. The distance between the centroid of the quality of the U.S. food system (-.294) and those of the countries in the pack along the first discriminant function seem to reflect the negative reputation of the U.S. and its food industry rather than consumer confidence in the country's ability to produce safe foods.

**Figure 15. Canonical Discriminant Functions**



**Table 35. Classification Function Coefficients (Great Britain)**

Variables	<Country>		
	Canada	US	NL
a. <Country's> regulators ensure all <country's> domestically grown food is safe	.426	.448	.449
b. <Country> has a good reputation for producing food that is good to eat	.224	.285	.186
d. <Country> is well known for wholesome foods	.162	-.046	.218
e. <Country's> farmers are concerned about food safety	.016	.049	-.022
f. <Country's> farmers are concerned about food quality	.646	.736	.630
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.170	-.067	.230
i. I can be confident to get good food products from <country>	.318	.416	.262
k. <Country's people> know how to produce safe foods	.568	.615	.533
m. <Country's> food producers and processors are honest and trustworthy	-.015	-.105	.002
n. <Country's> food is always of high quality	.351	.365	.324
(Constant)	-8.025	-7.397	-7.756

Fisher's linear discriminant functions

#### **4.4. RESEARCH FINDINGS FOR JAPAN**

The data used in the analysis include the 1,318 responses of Japanese consumers to the battery of questions assessing their perception of the country images of Canada, the U.S., and Australia as well as their perception of the quality of the food systems of those countries. For the purpose of the multiple-group analysis, the Japan sample is divided into two groups of consumers, one group familiar with Canadian products (346 cases) and the other unfamiliar with Canadian products (972 cases). The results of the MDS and DFA analysis are also reported in this section to confirm the findings of the SEM analysis.

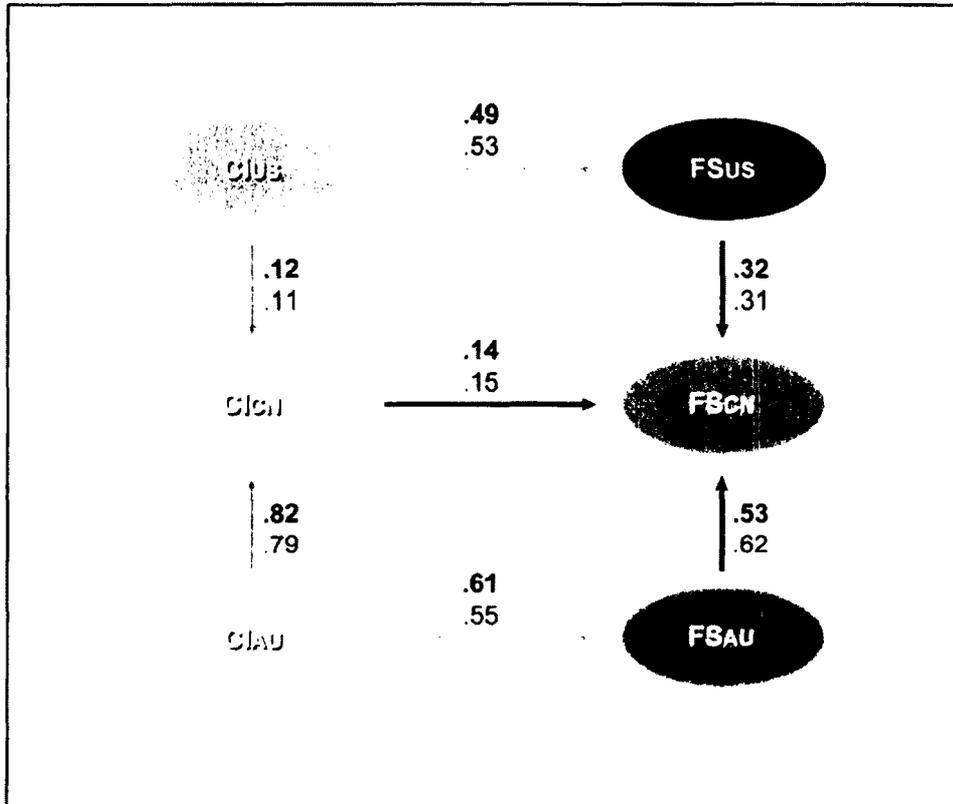
##### **4.4.1. SEM Analysis (Japan)**

The path diagram depicting unstandardized (upper numbers) and standardized (lower numbers) coefficients in the pack membership model is presented in Figure 16 (on the next page). To mirror the structure presented in the analysis of the German data, additional statistics such as standard errors and t-values are provided in Table 36. The estimated residual variances and fit indexes are reported in Table 37 and Table 38 respectively.

As hypothesised, the country image of each of the evaluated countries has a positive and significant impact on the respective food system, i.e.,  $CI_{US} \rightarrow FS_{US}$  (.49),  $CI_{AU} \rightarrow FS_{AU}$  (.61), and  $CI_{CN} \rightarrow FS_{CN}$  (.14). However, in relation to the unstandardized coefficient for the path  $FS_{AU} \rightarrow FS_{CN}$  (.53) and the path  $FS_{US} \rightarrow FS_{CN}$  (.32), the value of the unstandardized path coefficient between the perception of Canada's country image and its food system  $CI_{CN} \rightarrow FS_{CN}$  (.14) is rather low. The finding clearly supports Hypothesis

#1, #2, and #4 and points to Australia as Canada's closest competitor and a pack member in the Japanese market.

**Figure 16. Pack Membership Model (Japan)**



Unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates

The perceptual similarity between the Australian food system and the Canadian food system, captured by the path  $FS_{AU} \rightarrow FS_{CN}$  (.53), can be explained by the similarities between these two nations at the country level, represented by the path  $CI_{AU} \rightarrow CI_{CN}$  (.82). As expected (Hypothesis #3), the weaker association between the U.S. food system and the Canadian food system, depicted by the path  $FS_{US} \rightarrow FS_{CN}$  (.32), reflects a weaker association between the images of these two countries  $CI_{US} \rightarrow CI_{CN}$  (.12) than that between Canada and Australia.

**Table 36. Maximum Likelihood Parameter Estimates (Japan)**

Parameter	Unstandardized	SE	T-values	Standardized
CI <sub>US</sub> →FS <sub>US</sub>	.49	.033	14.67	.53
CI <sub>AU</sub> →FS <sub>AU</sub>	.61	.032	18.78	.55
CI <sub>US</sub> →CI <sub>CN</sub>	.12	.026	4.57	.11
CI <sub>AU</sub> →CI <sub>CN</sub>	.82	.036	23.02	.79
CI <sub>CN</sub> →FS <sub>CN</sub>	.14	.019	7.41	.15
FS <sub>US</sub> →FS <sub>CN</sub>	.32	.022	14.42	.31
FS <sub>AU</sub> →FS <sub>CN</sub>	.53	.023	23.41	.62

*Note: All parameters are statistically significant at the .001 level.*

While the CFI (.96) and NNFI (.96) statistics suggest a good model fit, the SRMR (.12), the RMSEA (.11) statistics indicate less than adequate model fit. The significant value of  $\chi^2$  (32413.21, df = 1882) also points to specification errors. The problem is most likely caused by the high correlations between variables which were not incorporated into the model specifications (see the modification index in Appendix A). The fit statistics that are affected by the average size of the correlations (i.e., CFI and NNFI) produce good fit, whereas the criteria ( $\chi^2$  and RMSEA) that are biased towards complex models with high degrees of freedom report mediocre fit.

**Table 37. Variances (Japan)**

Parameter	Unstandardized	SE	T-values	Standardized
CI <sub>US</sub>	.85	.070	12.11	1.00
CI <sub>AU</sub>	.85	.050	16.72	1.00
CI <sub>CN</sub> <sup>D</sup>	.23	.015	15.49	.24
FS <sub>US</sub> <sup>D</sup>	.54	.041	13.06	.73
FS <sub>AU</sub> <sup>D</sup>	.73	.042	17.55	.70
FS <sub>CN</sub> <sup>D</sup>	.23	.015	15.49	.29

<sup>D</sup> The estimated disturbance variance

**Table 38. Fit Statistics (Japan)**

Index	Value
RMSEA (90% interval)	.11 (.11; .11)
CFI	.96
NNFI	.96
SRMR	.12
$\chi^2$ -test	32413.21
DF	1882
$\chi^2/DF$	17.22
P-value	.000

**4.4.2. Two-Group Analysis (Japan)**

The results of cross-group invariance analysis based on testable hypotheses for three forms of equivalence (Table 39) suggest that the constructs included in the models are defined in the same way for the two groups of consumers, those familiar and those unfamiliar with Canadian products. The stability of the CFI and NNFI values (.96 and .95 respectively) across the tests of configural, metric, and scalar invariance allows the two groups to be subjected to further comparison.

**Table 39. Fit Statistics for Measurement Invariance (Japan)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
1. Configural Invariance( $H_{form}$ )	34354.19	3750	.11 (.11 ; .11)	.96	.95
2. Metric Invariance ( $H_{\lambda}$ )	34440.65	3807	.11 (.11 ; .11)	.96	.95
3. Scalar Invariance ( $H_{\lambda\mu\kappa}$ )	35459.00	3864	.11 (.11 ; .11)	.96	.95

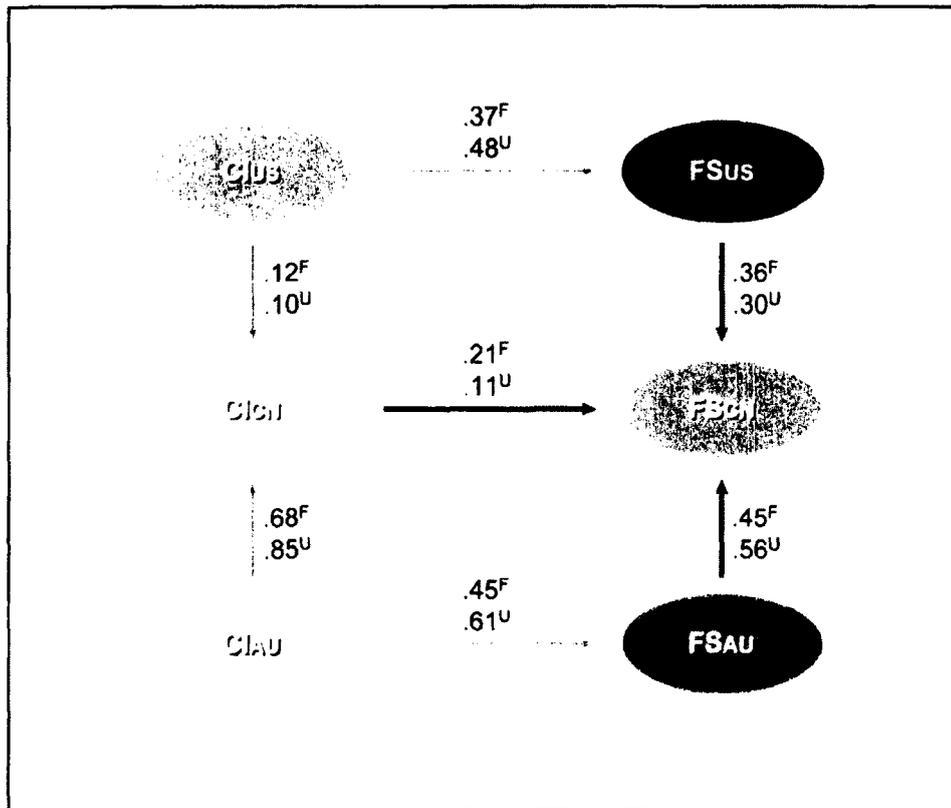
While overall model fit indices for the constrained and unconstrained models (Table 40) provide evidence that the hypothesized model structure is the same across groups, the magnitude of the differences between some of the unstandardized estimates for the

corresponding path parameters (i.e.,  $\gamma$ 's and  $\beta$ 's) suggest otherwise. According to the value of the z-test statistics and as postulated in Hypothesis #5, the importance assigned to the COO cue and the pack membership cue varies considerably by group. Thus, the effect size between the Canadian country image and its food industry is significantly higher for the familiar group than for the unfamiliar group ( $CI_{CN} \rightarrow FS_{CN} = .21^F/.11^U$ ;  $z = 2.17, p < .05$ ). The pack membership cue, expressed by the relationship between the Australian and Canadian food systems ( $FS_{AU} \rightarrow FS_{CN} = .45^F/.56^U$ ;  $z = 4.07, p < .001$ ) is weaker for the familiar group than it is for the unfamiliar group. In line with Hypothesis #3, the weaker association at the industry level is accompanied by a weaker association at the industry level. Consequently, familiar consumers are less likely to perceptually connect Canada with Australia than are unfamiliar consumers ( $CI_{AU} \rightarrow CI_{CN} = .68^F/.85^U$ ;  $z = 2.44, p < .05$ ). The relationships between Canada and the U.S are unaffected by consumer familiarity with Canadian products; the magnitude of the association between the U.S. and the Canadian country image ( $CI_{US} \rightarrow CI_{CN} = .12^F/.10^U$ ;  $z = .41$ ) and between the food systems of these countries ( $FS_{US} \rightarrow FS_{CN} = .36^F/.30^U$ ;  $z = 1.1$ ) is very similar for familiar and unfamiliar consumers.

**Table 40. Fit Statistics for Structural Invariance (Japan)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
Constrained Model (H0)	34909.83	3771	.11 (.11 ; .11)	.95	.95
Unconstrained Model (H1)	34890.45	3764	.11 (.11 ; .11)	.95	.95

**Figure 17. Two-Group Pack Membership Model (Japan)**



<sup>F</sup> Familiar group; <sup>U</sup> Unfamiliar group

**Table 41. Parameter Estimates for Two-Group Model (Japan)**

Parameter	Unstandardized		SE		Standardized	
	Familiar / Unfamiliar		Familiar / Unfamiliar		Familiar / Unfamiliar	
Cl <sub>US</sub> →FS <sub>US</sub>	.37 <sup>F</sup> / .48 <sup>U</sup> *		.051 <sup>F</sup> / .039 <sup>U</sup>		.40 <sup>F</sup> / .52 <sup>U</sup>	
Cl <sub>AU</sub> →FS <sub>AU</sub>	.45 <sup>F</sup> / .61 <sup>U</sup> **		.057 <sup>F</sup> / .038 <sup>U</sup>		.41 <sup>F</sup> / .55 <sup>U</sup>	
Cl <sub>US</sub> →Cl <sub>CN</sub>	.12 <sup>F</sup> / .10 <sup>U</sup>		.036 <sup>F</sup> / .033 <sup>U</sup>		.12 <sup>F</sup> / .10 <sup>U</sup>	
Cl <sub>AU</sub> →Cl <sub>CN</sub>	.68 <sup>F</sup> / .85 <sup>U</sup> **		.055 <sup>F</sup> / .043 <sup>U</sup>		.66 <sup>F</sup> / .82 <sup>U</sup>	
Cl <sub>CN</sub> →FS <sub>CN</sub>	.21 <sup>F</sup> / .11 <sup>U</sup> **		.041 <sup>F</sup> / .021 <sup>U</sup>		.23 <sup>F</sup> / .12 <sup>U</sup>	
FS <sub>US</sub> →FS <sub>CN</sub>	.36 <sup>F</sup> / .30 <sup>U</sup>		.047 <sup>F</sup> / .030 <sup>U</sup>		.35 <sup>F</sup> / .29 <sup>U</sup>	
FS <sub>AU</sub> →FS <sub>CN</sub>	.45 <sup>F</sup> / .56 <sup>U</sup> ***		.041 <sup>F</sup> / .027 <sup>U</sup>		.52 <sup>F</sup> / .66 <sup>U</sup>	

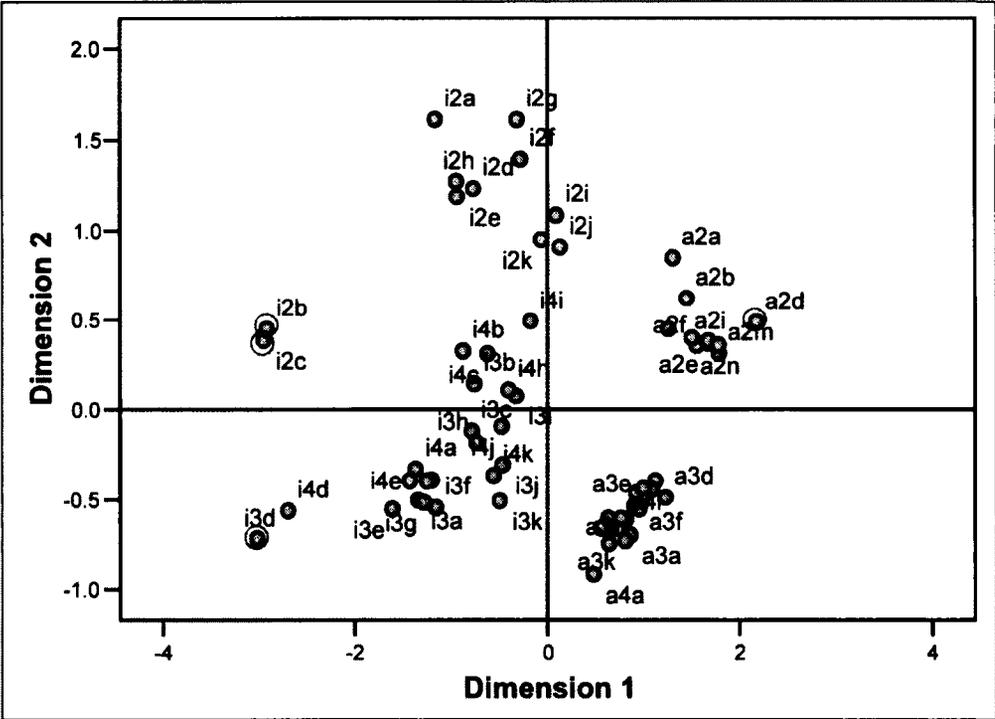
<sup>F</sup> Group familiar with Canadian products;  
<sup>U</sup> Group unfamiliar with Canadian products

Note: Group differences are statistically significant at:  
 \* the .1 level, \*\* the .05 level, or \*\*\* the .01 level.

**4.4.3. MDS Analysis (Japan)**

Figure 18 illustrates the Euclidean distance among indicators of the perceptions of country image and quality of the food system for Canada, the U.S., and Australia. A description of all points in the MDS model is provided in Table 42a and Table 42b. A simplified graphical version of the MDS plot is depicted in Figure 19.

**Figure 18. MDS Model (Japan)**



**Table 42a. Country Image Items (Japan)**

Variables	<Country>		
	Canada	USA	Australia
Consumers' perceptions of <country> and its people image.			
<Country> is a stable country	i3a	i2a	i4a
<Country> has a good economy	i3b	i2b	i4b
<Country> is technologically advanced	i3c	i2c	i4c
<Country> has an environment with clean air and water	i3d	i2d	i4d
<Country> has a good way of life	i3e	i2e	i4e
<Country> is an ideal country	i3f	i2f	i4f
<Country> has a good reputation in the world	i3g	i2g	i4g
<Country's people> are well educated	i3h	i2h	i4h
<Country's people> are hard-working	i3i	i2i	i4i
<Country's people> are trustworthy	i3j	i2j	i4j
<Country's people> are likeable	i3k	i2k	i4k

**Table 42b. Food System Items (Japan)**

Variables	<Country>		
	Canada	USA	Australia
Consumers' perceptions of <country's> food system.			
<Country's> regulators ensure all <country's> domestically grown food is safe	a3a	a2a	a4a
<Country> has a good reputation for producing food that is good to eat	a3b	a2b	a4b
<Country> is well known for wholesome foods	a3d	a2d	a4d
<Country's> farmers are concerned about food safety	a3e	a2e	a4e
<Country's> farmers are concerned about food quality	a3f	a2f	a4f
<Country's> farmers are concerned about growing foods in ways that are good for the environment	a3g	a2g	a4g
I can be confident to get good food products from <country>	a3i	a2i	a4i
<Country's people> know how to produce safe foods	a3k	a2k	a4k
<Country's> food producers and processors are honest and trustworthy	a3m	a2m	a4m
<Country's> food is always of high quality	a3n	a2n	a4n

Since the ratings of the food systems of the evaluated countries (i.e., Canada, the U.S., and Australia) are significantly lower than the ratings of the respective images of these countries, these two types of scales are separated along this first dimension. The lowest mean score (2.8), obtained by the U.S., for how well the country is known for wholesome

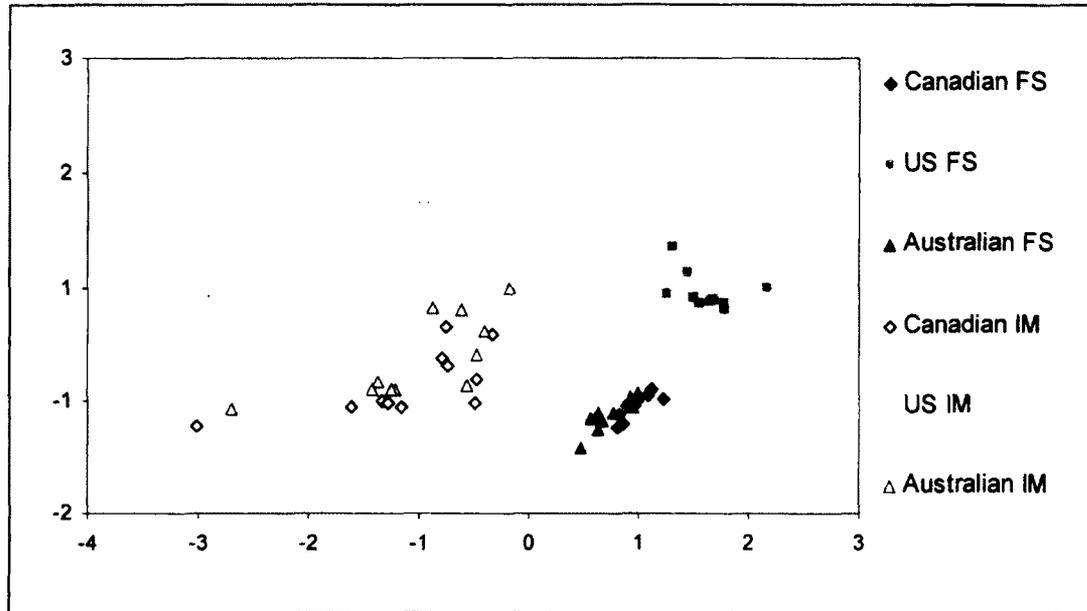
foods, corresponds to point a2d (in the circle) on the right of the plot. The highest mean scores, depicted by points i3d, i2c, and i2b (also in the circle) on the left of the plot, go to Canada for its clean air and water (5.5) and to the U.S. for being technologically advanced (5.5) and economically strong (5.4).

All items measuring the quality of the food systems of the evaluated countries are placed on the right, whereas all items related to country image are located on the left of the plot. These items are further divided along the second dimension according to the U.S. and non-U.S. indicators. Consequently, the top left side of the diagram designates exclusively the measures of the quality of the U.S. food system. All indicators of the quality of the Canadian and Australian food industries overlap with each other to the extent that they are indistinguishable as separate systems. Both these food systems seem to be separated from their respective images, which coincide in the bottom left side of the diagram. Interestingly, the items corresponding to the same attribute of the Canadian and Australian food systems are located in close proximity to each other (e.g., i3d and i4d, i3e and i4e, i3g and i4g), almost as if Japanese consumers could not perceptually separate these countries along any country-level characteristic.

The distance between the U.S. food system and the U.S.'s country image seems to be rather large. Two items (i2b and i2c), one standing for "a good economy" and the other for a "technologically advanced" country, claim their own space in the diagram, set apart from the aggregation of items relating to measures of the U.S. country image and the quality of the U.S. food industry. The item measuring the perception of Americans as

“trustworthy people” and the closest to the centroid of the U.S. food system (in comparison to other items of the country image scale) may provide an intuitive explanation for the low ratings given to Americans with regards to their food industry.

**Figure 19. Simplified MDS Model (Japan)**



#### 4.4.4. DFA Analysis (Japan)

According to the eigenvalues ( $\lambda_1 = .089$  and  $\lambda_2 = .008$ ), which measure the ‘between-groups’ to ‘within-groups’ sums of squares, only the first function explains a significant amount of variance (8%) in the discriminant scores attributable to the difference in the quality of the food systems of Canada, the U.S., and Australia (see Table 43). The second function is retained solely for the purpose of graphical representation of cross country separation.

**Table 43. Canonical Discriminant Functions (Japan)**

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.089	91.7	91.7	.286
2	.008	8.3	100.0	.089

a First 2 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.911	362.114	20	.000
2	.992	31.056	9	.000

Table 44 with the values of SDFCs, SCs, and Parallel DRCs reveals that only one variable, “Country is well known for wholesome foods” is a powerful discriminator (SDFC = .981, SC = .835, and DRCs = .819). However, the other two variables, “Country’s farmers are concerned about food safety” (SDFC = .287, SC = .652, and DRCs = .187) and “Country’s food producers and processors are honest and trustworthy” (SDFC = .314, SC = .601, and DRCs = .189), also contribute to group separation. The remaining variables used in the analysis are redundant in varying degrees. Interestingly,

an individual country's knowledge about how to produce safe foods correlated the least with the discriminant function (SC = .204).

**Table 44. SDFCs, SCs, and Parallel DRCs for the First Discriminant Function**

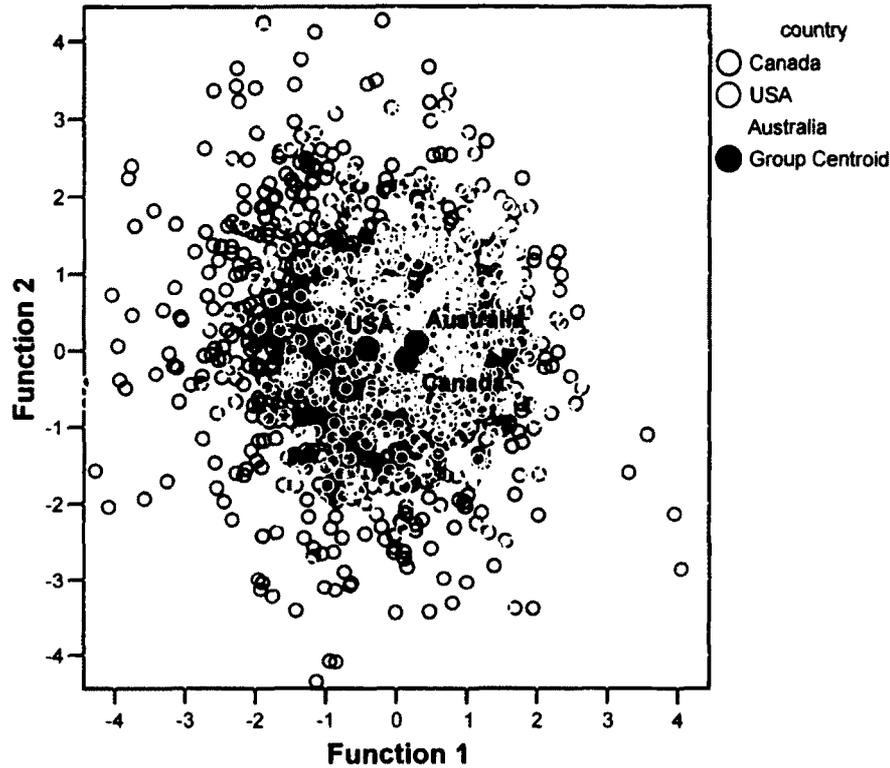
Variables	SDFC	SC	Parallel DRC <sup>1</sup>
a. <Country's> regulators ensure all <country's> domestically grown food is safe	-0.238	0.392	-0.093
b. <Country> has a good reputation for producing food that is good to eat	-0.119	0.530	-0.063
d. <Country> is well known for wholesome foods	0.981	0.835	0.819
e. <Country's> farmers are concerned about food safety	0.287	0.652	0.187
f. <Country's> farmers are concerned about food quality	-0.082	0.599	-0.049
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	0.181	0.584	0.106
i. I can be confident to get good food products from <country>	0.106	0.615	0.065
k. <Country's people> know how to produce safe foods	-0.794	0.204	-0.162
m. <Country's> food producers and processors are honest and trustworthy	0.314	0.601	0.189
n. <Country's> food is always of high quality	0.003	0.580	0.002

<sup>1</sup> Parallel DRC = SDFC + SC

Figure 20 shows that the centroids (the mean values of the discriminant function scores) of the Canadian and Australian food systems are very close together (.137 and .276), while the centroid for the U.S. food system (-.416) is some distance away from those two. Thus, Canada and Australia form a close sub-pack due to the perceived similarities of their respective food systems. The classification function coefficients (see Table 45) suggest that the Japanese hardly discriminate at all between most attributes of the quality of Canadian and Australian food systems. Very small differences in consumers' perceptions of these two systems are detected for the following measures: "Country's regulators ensure all country's domestically grown food is safe" and "Country's farmers are concerned about food quality". However, the difference in the values of the classification function coefficients is rather negligible compared to that between the U.S

and its two competitors (i.e., Canada and Australia) for the criterion of being known for wholesome foods.

**Figure 20. Canonical Discriminant Functions**



**Table 45. Classification Function Coefficients**

Variables	<Country>		
	Canada	US	Australia
a. <Country's> regulators ensure all <country's> domestically grown food is safe	.478	.691	.613
b. <Country> has a good reputation for producing food that is good to eat	.571	.625	.553
d. <Country> is well known for wholesome foods	.201	-.294	.280
e. <Country's> farmers are concerned about food safety	-.090	-.216	-.040
f. <Country's> farmers are concerned about food quality	.354	.495	.495
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.474	.326	.401
i. I can be confident to get good food products from <country>	.101	.070	.143
k. <Country's people> know how to produce safe foods	.758	1.134	.696
m. <Country's> food producers and processors are honest and trustworthy	.112	-.003	.207
n. <Country's> food is always of high quality	.401	.240	.164
(Constant)	-7.035	-6.334	-7.600

Fisher's linear discriminant functions

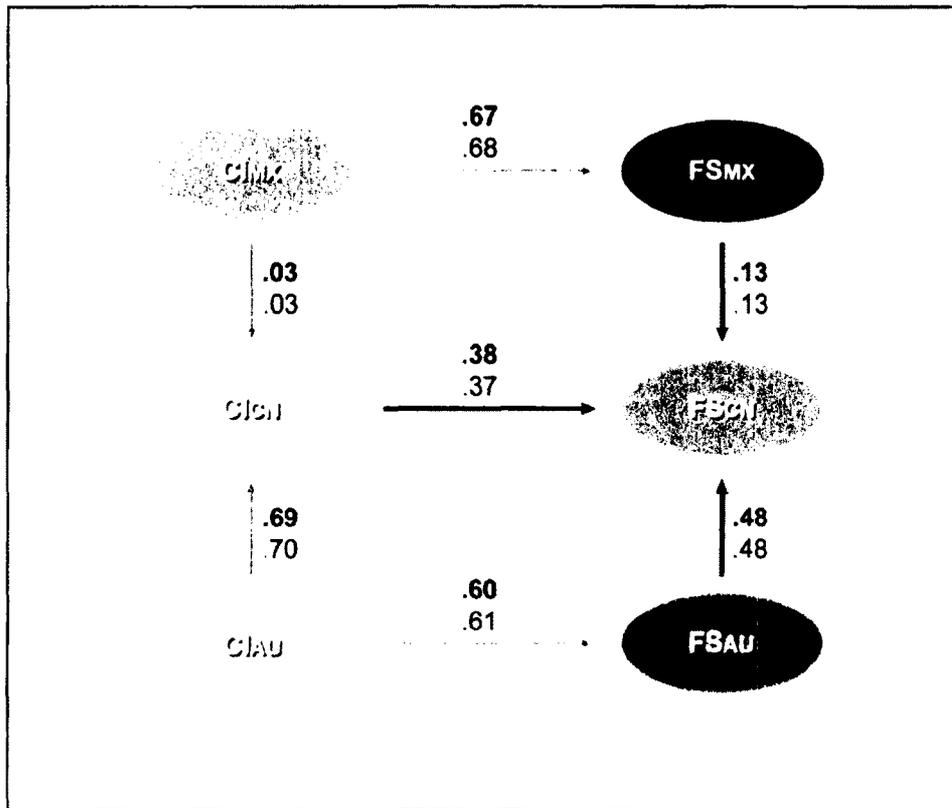
#### **4.5. RESEARCH FINDINGS FOR THE U.S.**

The analysis of this section is based on the 1173 responses of American consumers. The U.S. data includes 667 consumers who are familiar with Canadian products and 506 consumers who indicated a low level of familiarity with products originating in Canada. Unlike the data sets already discussed in the previous sections, Canada's performance at the country and industry level is compared with only one developed country (i.e., Australia). Canada's second competitor in the U.S. market (i.e., Mexico) is a developing country. Consequently, the U.S. sample provides a useful ground for testing the proposition that, at the basic level of classification, Canada is placed in the pack with other developed countries. Since Mexico is hypothesized not to belong to the pack, its food system is expected to share few similarities with the Canadian food system.

##### **4.5.1. SEM Analysis (the U.S.)**

Figure 21 depicts the path coefficients, unstandardized (upper numbers) and standardized (lower numbers) in the pack membership model. The ratios of the unstandardized estimates and their standard errors, yielding large t-values (in Table 46), suggest that all these coefficients are statistically significant at the .01 level. The estimated residual variances and fit indexes enclosed in Table 47 and Table 48 provides evidence in support of the model specification.

**Figure 21. Pack Membership Model (the U.S.)**



Unstandardized (bold, upper numbers) and standardized (not bolded, lower numbers) parameter estimates

The high values of the path coefficients  $CI_{MX} \rightarrow FSMX$  (.67),  $CI_{AU} \rightarrow FSAU$  (.60), and  $CI_{CN} \rightarrow FSCN$  (.38) clearly support Hypothesis #1 asserting the relationship between the country image of the evaluated countries and their respective food systems. The association made by American consumers (Hypothesis #2) between the Canadian food system ( $FSCN$ ) and the Australian food system ( $FSAU$ ), represented in the model by the path coefficient  $FSAU \rightarrow FSCN$  (.48), seems to mirror the association (Hypothesis #3) between Canada and Australia depicted by the path  $CI_{AU} \rightarrow CI_{CN}$  (.69). As expected (Hypothesis #4), the perception of the quality of the Australian food system is more predictive of the quality of the Canadian food system than the image of Canada as a

country (.48 vs. .38). Compared to the contribution of the Australian food system to the variance explained in the Canadian food system, the impact of the Mexican food system is rather negligible (.48 vs. .13). The low and insignificant value of the path coefficient  $CI_{MX} \rightarrow CI_{CN}$  (.03) supports the premise that those countries don't share membership in the same pack. While Canada belongs to the same sub-pack as Australia, Mexico shares membership with a group of developing countries.

**Table 46. Maximum Likelihood Parameter Estimates (the U.S.)**

Parameter	Unstandardized	SE	T-values	Standardized
$CI_{MX} \rightarrow FS_{MX}$	.67 *	.031	21.43	.68
$CI_{AU} \rightarrow FS_{AU}$	.60 *	.027	22.53	.61
$CI_{MX} \rightarrow CI_{CN}$	.03	.021	1.35	.03
$CI_{AU} \rightarrow CI_{CN}$	.69 *	.027	25.31	.70
$CI_{CN} \rightarrow FS_{CN}$	.38 *	.025	15.16	.37
$FS_{MX} \rightarrow FS_{CN}$	.13 *	.020	6.32	.13
$FS_{AU} \rightarrow FS_{CN}$	.48 *	.025	19.32	.48

\* Parameter estimates statistically significant at the .001 level.

The large value of  $R^2$  (.57) indicates that the pack membership model accounts for a significant proportion of variability in the U.S. data (see Table 47). The model also provides a reasonably good fit to the data (see Table 48). The values of all fit indexes (CFI = .98, and NNFI = .98; SRMR = .090) fall within their respective threshold of acceptance. An RMSEA of .076 is the lowest across all databases. Only the significant  $\chi^2$ -test = 14601.07 with 1882 degrees of freedom and its corresponding  $SB\chi^2/df$  ratio of 7.76 is not indicative of good model fit.

**Table 47. Variances (the U.S.)**

<b>Parameter</b>	<b>Unstandardized</b>	<b>SE</b>	<b>T-values</b>	<b>Standardized</b>
CI <sub>MX</sub>	1.26	.080	15.85	1.00
CI <sub>AU</sub>	1.15	.060	18.72	1.00
CI <sub>CN</sub> <sup>D</sup>	.54	.031	17.52	.50
FS <sub>MX</sub> <sup>D</sup>	.64	.041	15.56	.53
FS <sub>AU</sub> <sup>D</sup>	.69	.035	19.68	.62
FS <sub>CN</sub> <sup>D</sup>	.48	.027	17.69	.43

<sup>D</sup> The estimated disturbance variance

**Table 48. Fit Statistics (the U.S.)**

<b>Index</b>	<b>Value</b>
RMSEA (90% interval)	.076 (.075 ; .077)
CFI	.98
NNFI	.98
SRMR	.090
$\chi^2$ -test	14601.07
DF	1882
$\chi^2/DF$	7.76
P-value	.000

#### 4.5.2. Two-Group Analysis (the U.S.)

As reported in Table 49, the same values of the CFI (.97) and NNFI (.97) across all tested forms of invariance indicate no significant loss of fit of the nested measurements models. Consequently, cross-group equivalence at the configural, metric, and scalar levels between the two groups of consumers (i.e., consumers familiar with Canadian products and those not familiar) enables comparison of the direct effects in the two-group model.

**Table 49. Fit Statistics for Measurement Invariance (the U.S.)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
1. Configural Invariance( $H_{form}$ )	16926.07	3750	.077 (.076; .079)	.97	.97
2. Metric Invariance ( $H_{\lambda}$ )	17098.23	3807	.077 (.076; .079)	.97	.97
3. Scalar Invariance ( $H_{\lambda_{\text{uk}}}$ )	17578.56	3864	.078 (.077; .079)	.97	.97

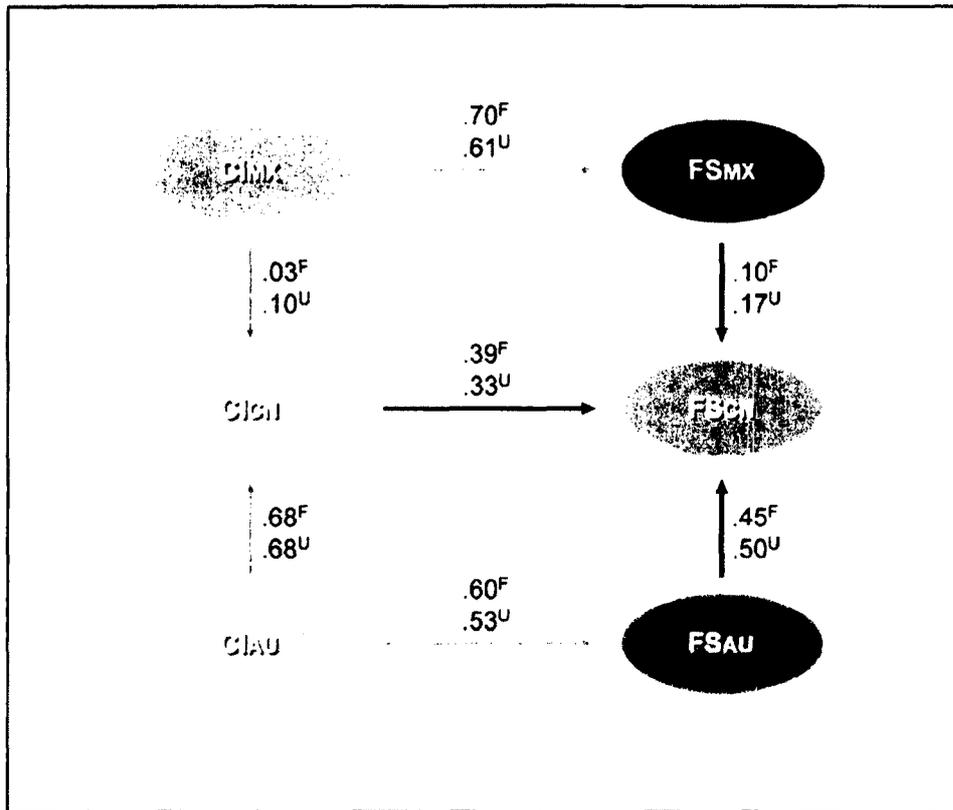
The results of the comparison of the equality-constrained direct effects model with the model that does not impose constraints on the estimates of the direct effects (i.e., all  $\gamma$ 's and  $\beta$ 's) indicate that the structural part of the pack membership model holds for both groups. Although there is no difference in direct effects across groups, as suggested by no change in the values of the CFI and NNFI statistics (see Table 50), the unstandardized estimates for some of the corresponding path coefficients seem to differ in magnitude. The larger difference between groups was found for the path between Mexico's country image and the Canadian country image ( $CI_{MX} \rightarrow CI_{CN} = .03^F/.10^U$ ;  $z = 2.77$ ,  $p < .01$ ). The difference in the perception of the country-level characteristics seems to be mirrored in the perceptual differentiation of the industry-level characteristics. However, the latter is evident in terms of the direction of relation but not in the effect size; the difference in the perception of these two food industries ( $FS_{MX} \rightarrow FS_{CN} = .10^F/.17^U$ ;  $z = 1.59$ ) failed to

pass the test of significance at the .1 level by a small margin. The result suggests that American consumers who are unfamiliar with Canadian products are more inclined to see some similarities between Canada and Mexico than are those familiar with Canadian products. The sign of the difference in estimated effects of the COO cue across groups also contributes to the support of the theoretical argument (Hypothesis #5), which holds that familiar consumers are more likely to rely on the COO cue than on the pack membership cue. However, the difference in the COO effects is not statistically significant ( $CI_{CN} \rightarrow FS_{CN} = .39^F/.33^U$ ;  $z = 1.16$ ). Similarly, the values of  $\beta$  parameters corresponding to the association between the Canadian and Australian food systems ( $FS_{AU} \rightarrow FS_{CN} = .45^F/.50^U$ ;  $z = .95$ ) support the argument by the expected direction of the change, but not by statistical significance.

**Table 50. Fit Statistics for Structural Invariance (the U.S.)**

Hypothesis	Chi-Square	DF	RMSEA	CFI	NNFI
Constrained Model (H0)	17799.46	3771	.078 (.077; .079)	.97	.97
Unconstrained Model (H1)	17204.82	3764	.078 (.077;.079)	.97	.97

**Figure 22. Two-Group Pack Membership Model (the U.S.)**



<sup>F</sup> Familiar group; <sup>U</sup> Unfamiliar group

**Table 51. Parameter Estimates for Two-Group Model (the U.S.)**

Parameter	Unstandardized		SE		Standardized	
	Familiar / Unfamiliar		Familiar / Unfamiliar		Familiar / Unfamiliar	
Cl <sub>MX</sub> →FS <sub>MX</sub>	.70 <sup>F</sup> / .61 <sup>U</sup>		.041 <sup>F</sup> / .049 <sup>U</sup>		.71 <sup>F</sup> / .63 <sup>U</sup>	
Cl <sub>AU</sub> →FS <sub>AU</sub>	.60 <sup>F</sup> / .53 <sup>U</sup>		.033 <sup>F</sup> / .043 <sup>U</sup>		.62 <sup>F</sup> / .55 <sup>U</sup>	
Cl <sub>MX</sub> →Cl <sub>CN</sub>	-.03 <sup>F</sup> / .10 <sup>U</sup> ***		.027 <sup>F</sup> / .037 <sup>U</sup>		-.03 <sup>F</sup> / .11 <sup>U</sup>	
Cl <sub>AU</sub> →Cl <sub>CN</sub>	.68 <sup>F</sup> / .68 <sup>U</sup>		.032 <sup>F</sup> / .048 <sup>U</sup>		.69 <sup>F</sup> / .69 <sup>U</sup>	
Cl <sub>CN</sub> →FS <sub>CN</sub>	.39 <sup>F</sup> / .33 <sup>U</sup>		.033 <sup>F</sup> / .040 <sup>U</sup>		.40 <sup>F</sup> / .34 <sup>U</sup>	
FS <sub>MX</sub> →FS <sub>CN</sub>	.10 <sup>F</sup> / .17 <sup>U</sup>		.024 <sup>F</sup> / .037 <sup>U</sup>		.11 <sup>F</sup> / .18 <sup>U</sup>	
FS <sub>AU</sub> →FS <sub>CN</sub>	.45 <sup>F</sup> / .50 <sup>U</sup>		.032 <sup>F</sup> / .042 <sup>U</sup>		.45 <sup>F</sup> / .50 <sup>U</sup>	

<sup>F</sup> Group familiar with Canadian products;

<sup>U</sup> Group unfamiliar with Canadian products

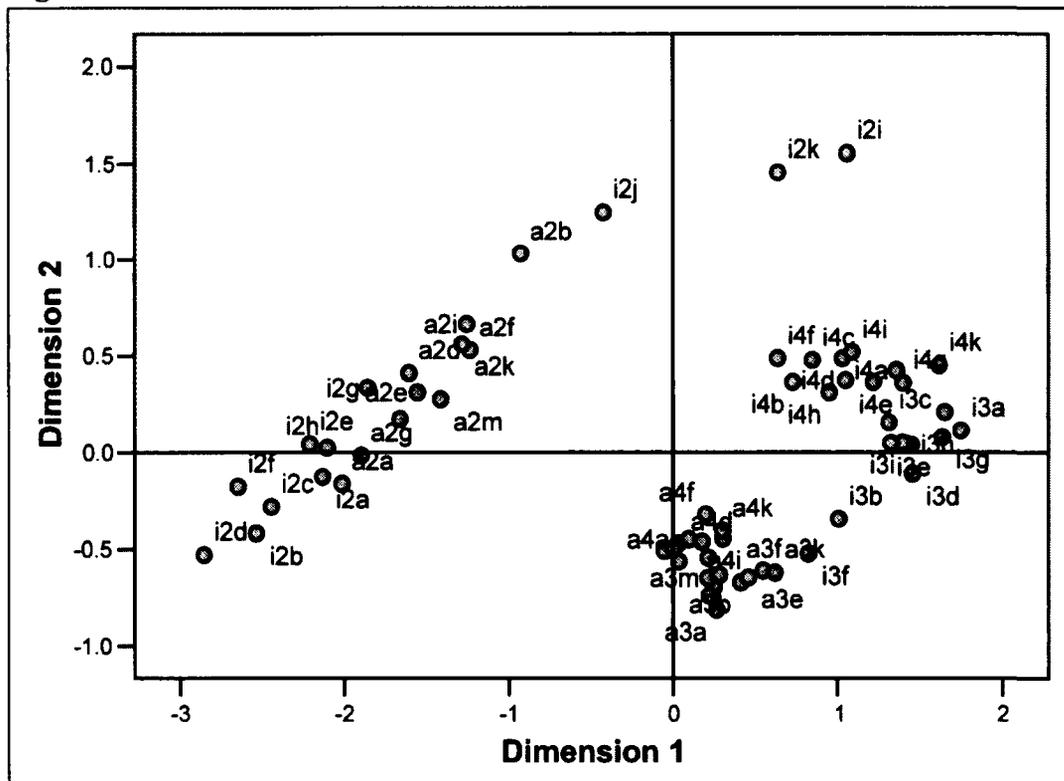
Note: Group differences are statistically significant at:

\* the .1 level, \*\* the .05 level, or \*\*\* the .01 level.

### 4.5.3. MDS Analysis (the U.S.)

Figure 23 is a graphical representation of all attributes of the country-of-origin image for Canada, Australia, and Mexico together with all indicators of the quality of the food systems of these countries. Following are two tables (52a and 52b) with labels for each item in the plot. A simplified graphical version of the MDS plot is also provided in Figure 24.

**Figure 23. MDS Model for the U.S.**



**Table 52a. Country Image Items**

Variables	<Country>		
	Canada	Mexico	Australia
Consumers' perceptions of <country> and its people image:			
<Country> is a stable country	i3a	i2a	i4a
<Country> has a good economy	i3b	i2b	i4b
<Country> is technologically advanced	i3c	i2c	i4c
<Country> has an environment with clean air and water	i3d	i2d	i4d
<Country> has a good way of life	i3e	i2e	i4e
<Country> is an ideal country	i3f	i2f	i4f
<Country> has a good reputation in the world	i3g	i2g	i4g
<Country's people> are well educated	i3h	i2h	i4h
<Country's people> are hard-working	i3i	i2i	i4i
<Country's people> are trustworthy	i3j	i2j	i4j
<Country's people> are likeable	i3k	i2k	i4k

**Table 52b. Food System Items**

Variables	<Country>		
	Canada	Mexico	Australia
Consumers' perceptions of <country's> food system:			
<Country's> regulators ensure all <country's> domestically grown food is safe	a3a	a2a	a4a
<Country> has a good reputation for producing food that is good to eat	a3b	a2b	a4b
<Country> is well known for wholesome foods	a3d	a2d	a4d
<Country's> farmers are concerned about food safety	a3e	a2e	a4e
<Country's> farmers are concerned about food quality	a3f	a2f	a4f
<Country's> farmers are concerned about growing foods in ways that are good for the environment	a3g	a2g	a4g
I can be confident to get good food products from <country>	a3i	a2i	a4i
<Country's people> know how to produce safe foods	a3k	a2k	a4k
<Country's> food producers and processors are honest and trustworthy	a3m	a2m	a4m
<Country's> food is always of high quality	a3n	a2n	a4n

The MDS plot for the U.S. data shows a very large distance between items measuring the perceptions of the Mexican food system and the food systems of Canada and Australia. Although all indicators of Mexican performance at the country level (i2a-i2k) and the industry level (a2a-a2n) are spread out from the bottom left to the top right of the plot,

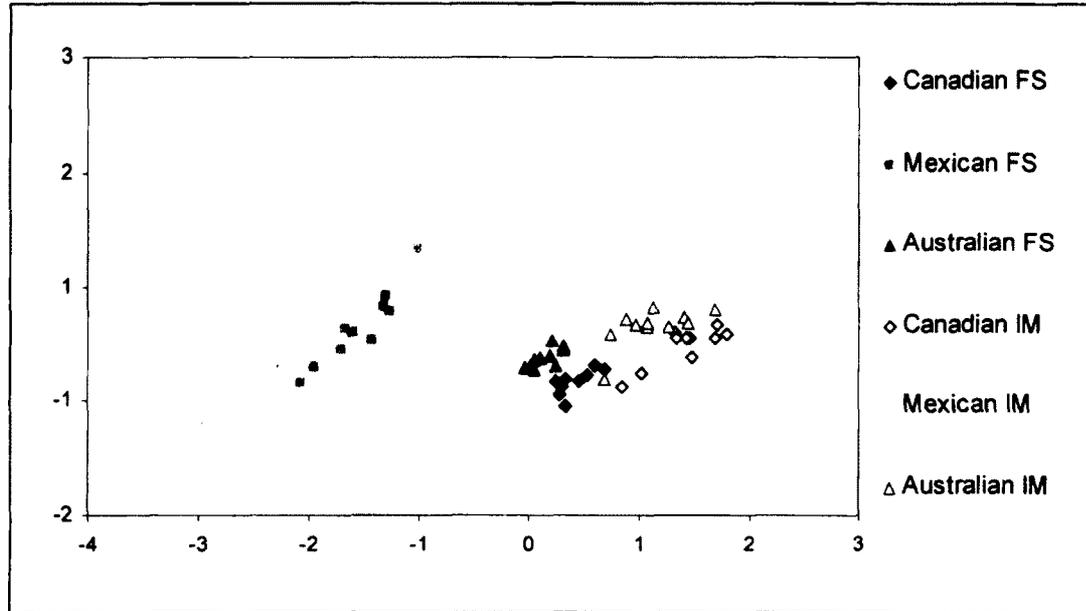
they seem to create a linear pattern. From the left, this pattern starts from the lowest scoring items in the U.S. survey: Mexico has an environment with clean air and water (i2d), Mexico has a good economy (i2b), Mexico is an ideal country (i2f), and Mexico is technologically advanced (i2c). In the middle, the pattern contains items related to the Mexican food system. The pattern ends with a long tail on the top right corresponding to the people image: Mexicans are trustworthy people (i2j), Mexicans are likeable (i2k), and Mexicans are hard-working people (i2i). The last item (i2i), the criterion of hard work, places Mexicans on a par with Canadians and above Australians.

The perception of the quality of the Canadian food industry (a3a-a3n) held by Americans is closely aligned with their perception of the quality of the Australian food industry (a4a-a4n). The respective images of these two countries (Canada: i3a-i3k and Australia: i4a-i4k) also tend to cluster together in space. However, while the Australian food system seems to be disconnected from the image of Australia as a country, the Canadian food system is perceptually linked by the item corresponding to the Canadian economy (i3b) with the remaining measures of Canada's image.

In conclusion, the MDS plot tells the story of pack and sub-pack formation. Because of its poor economic performance (a mean score of 2.6 on the 7-point scale), Mexico is not associated with either of its two competitors in the U.S. market. Consequently, it is placed outside the sub-pack formed by Canada and Australia. The perception of the quality of the Mexican food industry seems to reflect beliefs about Mexico as a country. In contrast, the quality of the Australian food system is possibly inferred based on the

quality of the Canadian system, which is better known to Americans, at least by its proximity to home.

**Figure 24. Simplified MDS Model (the U.S.)**



#### 4.5.4. DFA Analysis (the U.S.)

The first linear combination of variables (see Table 53), which produces the largest ratio of ‘between-groups’ to ‘within groups’ sums of squares ( $\lambda = .294$ ), accounts for 23% of variance in the discriminant scores. The second linear combination of variables explains only .07% of additional variance. Consequently, only the first discriminant function will be used to describe the differences in the perception of the Canadian, Australian, and Mexican food systems.

**Table 53. Canonical Discriminant Functions (the U.S.)**

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.294	97.7	97.7	.477
2	.007	2.3	100.0	.082

a First 2 canonical discriminant functions were used in the analysis.

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.767	877.414	20	.000
2	.993	22.432	9	.008

The weights, loadings and Parallel DRCs for the first discriminant function, reported in Table 54, suggest that the level of regulation in a country ensuring that all the country's domestically grown food is safe serves as the most important discriminator among the food systems (SDFC = .627, SC = .837, and DRCs = .525). Since the Classification Function Coefficients (see Table 55 at the end of this section) are similar for all attributes of the Canadian and Australian food systems, the level of regulation separates only Mexico from the rest. Other non-redundant variables that accentuate the differences between Mexico and its competitors (i.e., Canada and Australia) are: "Country's farmers are concerned about growing foods in ways that are good for the environment"; "Country's food is always of high quality"; "Country's people know how to produce safe foods"; "Country's farmers are concerned about food safety"; and "Country is well known for wholesome foods".

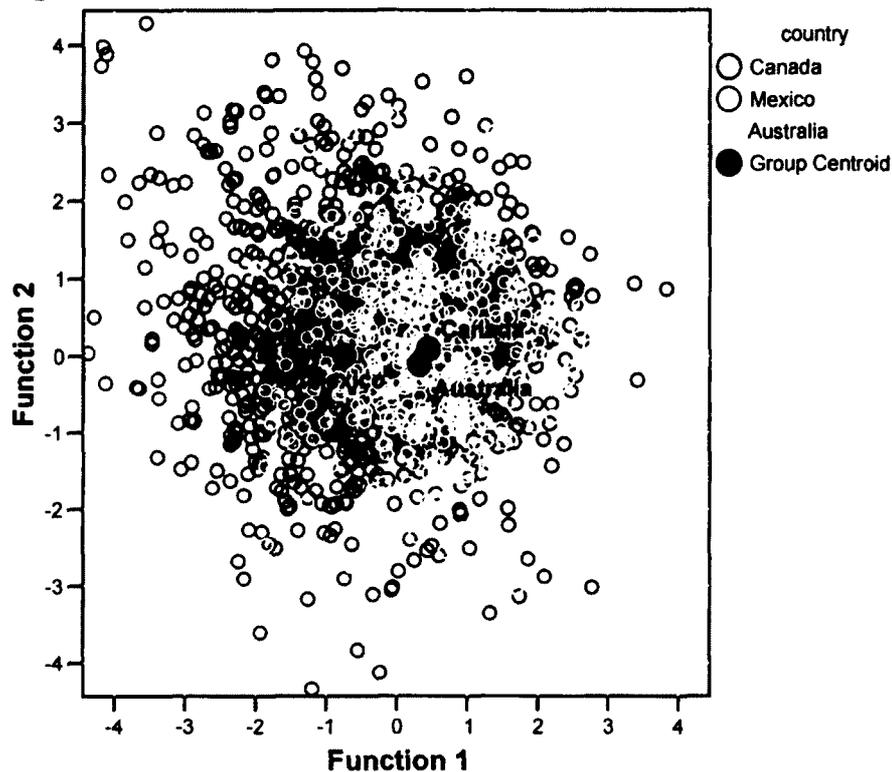
**Table 54. SDFCs, SCs, and Parallel DRCs for the First Discriminant Function**

Variables	SDFC	SC	Parallel DRC <sup>1</sup>
a. <Country's> regulators ensure all <country's> domestically grown food is safe	.627	.837	.525
b. <Country> has a good reputation for producing food that is good to eat	-.671	.349	-.234
d. <Country> is well known for wholesome foods	.193	.637	.123
e. <Country's> farmers are concerned about food safety	.359	.733	.263
f. <Country's> farmers are concerned about food quality	-.340	.581	-.198
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.398	.773	.308
i. I can be confident to get good food products from <country>	-.071	.577	-.041
k. <Country's people> know how to produce safe foods	.248	.653	.162
m. <Country's> food producers and processors are honest and trustworthy	-.308	.601	-.185
n. <Country's> food is always of high quality	.382	.724	.277

<sup>1</sup> Parallel DRC = SDFC \* SC

As displayed in the Canonical Discrimination Functions plot (Figure 25), the centroids of the Canadian and Australian food systems are in close proximity to each other (.455 and .320). Taking into account the lack of characteristics that would differentiate these countries at the food system level (see Table 55), Canada and Australia can be considered as immediate pack members. In contrast, Mexico appears to be a country whose food industry is quite distant in perceptual space (-.750) from the food systems of the countries in the pack.

**Figure 25. Canonical Discriminant Functions**



**Table 55. Classification Function Coefficients (the U.S.)**

Variables	Country		
	Canada	MX	Australia
a. <Country's> regulators ensure all <country's> domestically grown food is safe	.222	-.352	.205
b. <Country> has a good reputation for producing food that is good to eat	.344	.927	.353
d. <Country> is well known for wholesome foods	.310	.150	.346
e. <Country's> farmers are concerned about food safety	.227	-.123	.175
f. <Country's> farmers are concerned about food quality	.341	.605	.231
g. <Country's> farmers are concerned about growing foods in ways that are good for the environment	.649	.253	.587
i. I can be confident to get good food products from <country>	.282	.311	.199
k. <Country's people> know how to produce safe foods	.616	.360	.534
m. <Country's> food producers and processors are honest and trustworthy	.288	.600	.342
n. <Country's> food is always of high quality	.365	.066	.509
(Constant)	-9.313	-6.288	-8.558

Fisher's linear discriminant functions

## **5. SUMMARY, DISCUSSION, AND ASSESSMENT OF THE RESEARCH**

This section combines, explains, and assesses the results of the analyses conducted in this study. The summary of findings in section 5.1 presents the evidence underlying the acceptance or rejection of individual hypotheses. The interpretation of findings (5.2) describes the outcomes of the research in terms of the research objectives stated in the research framework (Section 3). Section 5.3 discusses the importance of the research with particular reference to the academic implications (5.3.1) and the potential impact of the findings on the management of the Canadian brand (5.3.2). The section ends with a discussion of the limitations of the study and directions for future research (5.4), followed by the conclusion of the study (5.5).

### **5.1. SUMMARY OF FINDINGS**

This study provides strong support for the proposition that consumers use a cognitive categorization process when assessing countries. Moreover, with the exception of Hypothesis #3 in the German market and Hypothesis #5 in the U.S. market, all the tested hypotheses were confirmed by the data. Even in these two instances where the empirical evidence required to bear out the tested notions could not be obtained, a plausible explanation for the inconsistency could be afforded within the tested framework. The outcomes of hypothesis testing are summarized in Table 56.

The discussion of findings in this section is organized according to the structure introduced in Section 3.2.3. While the assessment of most of the hypotheses is based on the SEM models (i.e., the pack membership models), this section also describes the

results of the MDS and DFA analyses presented in the data analysis section. The objective of the multi-method approach (i.e., the combination of SEM with MDS and DFA) is not only to confirm the results of SEM analysis, but also to further examine the nature of the hypothesized relationships. It should be stressed that, consistent with the focus of this dissertation, the evaluations of the first five hypotheses are based on the pack membership model with Canada as the target country. The last hypothesis (#6), however, necessitated a separate SEM model to be estimated for France in the German market (the details of the model with France as the target country are provided in Section 4.2.1.3).

**Table 56. Results of Hypothesis Testing**

	<b>Germany</b>	<b>GB</b>	<b>Japan</b>	<b>USA</b>
Hypothesis # 1	supported	supported	supported	supported
Hypothesis # 2	supported	supported	supported	supported
Hypothesis # 3	not supported*	supported	supported	supported
Hypothesis # 4	supported	supported	supported	supported
Hypothesis # 5	supported	supported	supported	partially supported (direction, not magnitude)**
Hypothesis # 6	supported	N/A	N/A	N/A

\* (H3) *Two countries whose country-specific attributes relevant in the assessment of their food industries along the quality dimension are perceived as similar, are also perceived as more similar at the food industry level when compared to other countries.*

\*\* (H5) *Higher product familiarity results in lower reliance on the pack membership cue in relation to the COO cue.*

### 5.1.1. Hypothesis #1

*H1: The country of origin image is positively related to the perceived quality of the respective food industries of the surveyed countries; [the more favourable the overall country image, the more positive the consumer's evaluation of the food industry of that country].*

Hypothesis #1 was supported in all international markets (i.e., Germany, Great Britain, Japan, and the U.S.). The values of the COO effects for Canada ( $CI_{CN} \rightarrow FS_{CN}$ ) and its competitors ( $CI_{COM1} \rightarrow FS_{COM1}$  and  $CI_{COM2} \rightarrow FS_{COM2}$ ), as estimated in the pack membership models presented in the previous sections, are reported in Table 57. Based on the sign and the magnitude of these COO effects, it can be concluded with a high degree of confidence that the more favourable the overall country image, the more positive the consumer's perception of the quality of the food industry of that country.

For the purpose of comparison of the COO effect within and between databases, Table 57 shows unstandardized and standardized path coefficients for the direct relationships between investigated constructs. It should be pointed out that the relationship between the Canadian country image and the quality of the Canadian food system ( $CI_{CN} \rightarrow FS_{CN}$ ) is captured in the form of a partial coefficient, whereas the relationships between the country image of each of Canada's competitors and their corresponding food systems are represented by the size of the direct effects in simple regressions.

**Table 57. Coefficients of the Pathways  $CI_{\text{COUNTRY}} \rightarrow FS_{\text{COUNTRY}}$ \***

Pathways	Surveyed Countries			
	Germany	GB	Japan	USA
$CI_{\text{CN}} \rightarrow FS_{\text{CN}}$	.26/.21	.18/.15	.14/.15	.38/.37
$CI_{\text{US}} \rightarrow FS_{\text{US}}$	.96/.72	1.11/.78	.49/.53	-
$CI_{\text{FR}} \rightarrow FS_{\text{FR}}$	.93/.74	-	-	-
$CI_{\text{NL}} \rightarrow FS_{\text{NL}}$	-	.74/.70	-	-
$CI_{\text{AU}} \rightarrow FS_{\text{AU}}$	-	-	.61/.55	.60/.61
$CI_{\text{MX}} \rightarrow FS_{\text{MX}}$	-	-	-	.67/.68

*Note: All parameters are statistically significant at the .01 level.*

\* These unstandardized/standardized coefficients are obtained from the pack membership models presented in the data analysis section.

The spatial arrangement of the items of the two scales (i.e., country image and perception of the quality of the food system), as captured by the MDS analysis, shows that some characteristics of the Canadian country image are better reflected in the evaluation of the Canadian food system than others. In Germany, the items, “Canadians are trustworthy people,” “Canadians are well educated,” and “Canada has a good way of life” are in relatively close proximity to the items measuring Canadian farmers’ commitment to the quality and safety of their food products (i.e., “Canadian farmers are concerned about food safety” and “Canadian farmers are concerned about food quality”). In Great Britain, the items belonging to Canada’ country image are divided between two clusters: the first contains indicators of Canada’s performance related to its economy; the second combines the remaining indicators of the country image construct. While Canada’s economy seems to be perceptually associated with Canadians’ “know how,” Canada’s “reputation in the

world” tends to be particularly reflected in “Canadian farmers are concerned about food quality.” In Japan, where the economy and image of the people are closely connected in perceptual space, and where the Canadian reputation and the quality of Canadian life constitute a separate entity, the basis of the relationship between the two constructs (i.e., country image and food system) is more difficult to establish.

### **5.1.2. Hypothesis #2**

*H2: The perceived quality of the food industry of a country is positively affected by the perceived quality of the food industry of another country that is perceived by consumers as a pack member.*

The pack membership model as tested in four markets provides strong and consistent support for Hypothesis #2. According to expectations, Canada was found to be strongly associated with all its competitors except Mexico. All direct effects between a competitive food industry and the Canadian food industry were positive and significant at the .01 level. However, the effects differed among the competitors, such that in each of the survey markets, the performance of one competitor was found to be more predictive of attitudes towards the Canadian food system than that of another. The relative contribution of each competitor’s food system when controlling for the food system of another competitor is reported in Table 58.

**Table 58. Coefficients of the Pathways  $FS_{COM} \rightarrow FS_{CN}$ \***

Pathways	Surveyed Countries			
	Germany	GB	Japan	USA
$FS_{US} \rightarrow FS_{CN}$	.51/.57	.39/.47	.33/.31	-
$FS_{FR} \rightarrow FS_{CN}$	.36/.29	-	-	-
$FS_{NL} \rightarrow FS_{CN}$	-	.52/.54	-	-
$FS_{AU} \rightarrow FS_{CN}$	-	-	.53/.62	.48/.48
$FS_{MX} \rightarrow FS_{CN}$	-	-	-	.13/.13

*Note: All parameters are statistically significant at the .01 level.*

\* These unstandardized/standardized coefficients are obtained from the pack membership models presented in the data analysis section.

The unstandardized and standardized coefficients reported in Table 58, as well as the corresponding path coefficients estimated in the pack membership model in each international market indicate that the direct effect between the quality of the Mexican food system ( $FS_{MX}$ ) and that of the Canadian food system ( $FS_{CN}$ ) is negligible in relation to the direct effects between the food systems of any of Canada's other surveyed competitors and the Canadian food system. The significant perceptual differences between Mexico, a developing country, and the pack consisting of developing countries, here represented by Canada and Australia in the German market, are also supported by the DFA analysis. The large separation of the Mexican food industry from the Canadian and Australian food industries along the discriminant function was found to reflect the differences in most attributes of these food systems. While American consumers' perception of how Mexican regulators ensure that all domestically grown food is safe is the main discriminator between Mexico and the pack of developed countries, Mexico's

reputation for producing food that is good to eat is not a strong separator of the Mexican food industry from the rest.

Interestingly, the level of regulation does not play a significant role in differentiating between developed countries. Moreover, “good reputation for producing food that is good to eat” is a characteristic that differentiates only the French food industry from its competitors (i.e., Canada and the U.S.) in the German market. The most important attribute that consistently separates the U.S from other developed countries, including Canada, is its poor standing with regards to wholesome foods. However, British consumers isolated the U.S. from other competitors within the pack of developed countries (i.e., Canada and the Netherlands) because of its low level of concern about growing foods in ways that are good for the environment as much as for its poor reputation in the area of wholesome foods. In Great Britain and Japan, the perceived honesty and trustworthiness of American food producers and processors also seemed to have a negative impact on how the U.S. is seen in comparison to other developed countries.

The SEM analysis (see Table 58) reveals that the magnitude of the effect the U.S. food system on the Canadian food system depends on the inclusion of another competitor in the consideration set. When compared with the French food system in the German market, the U.S. food system seems to account for a relatively high amount of variance in the Canadian food system. However, when evaluated next to the Netherlands food system, which was considered in Great Britain, the proportional contribution of the U.S.

food system in explaining variance in the quality of the Canadian food system diminished considerably. A further decline in the informational value of the U.S. food system was noted in Japan when the Australian food system explained the proportionally higher amount of variance in the quality of the Canadian food system.

### **5.1.3. Hypothesis #3**

*H3: Two countries whose country-specific attributes relevant in the assessment of their food industries along the quality dimension are perceived as similar, are also perceived as more similar at the food industry level when compared to other countries.*

It was anticipated in this dissertation that Canada would be perceptually grouped with at least one of its two competitors, based on the commonalities of country-level characteristics, in each surveyed market. The minimum and necessary requirement underlying pack formation was a similar level of economic development. Accordingly, in Germany, Great Britain, and Japan, where Canada's performance was assessed against two developed countries, one country was expected to be more closely associated with Canada than the other with respect to specific attributes of country image. If these shared attributes were relevant in the assessment of the quality of the food industry, a transfer of industry-specific attributes between the two similar countries (Canada and its competitor) was expected.

This logic, and consequently Hypothesis #3, is supported in three out of four surveyed markets. With the exception of the German data, the study shows that a country most closely associated with Canada (i.e., belongs to the same sub-pack) is more likely to

serve as a potential referent at the food system level. The values of the respective unstandardized and standardized path coefficients are reported in Table 59.

**Table 59. Coefficients of the Pathways  $CI_{COM} \rightarrow CI_{CN}$  and  $FS_{COM} \rightarrow FS_{CN}$ \***

Pathways	Surveyed Countries			
	Germany	GB	Japan	USA
$CI_{US} \rightarrow CI_{CN}$ $FS_{US} \rightarrow FS_{CN}$	.45/.46 ** .51/.57 **	.35/.35 ** .39/.47 **	.12/.11 ** .32/.31 **	
$CI_{FR} \rightarrow CI_{CN}$ $FS_{FR} \rightarrow FS_{CN}$	.52/.43 ** .36/.29 **	-	-	-
$CI_{NL} \rightarrow CI_{CN}$ $FS_{NL} \rightarrow FS_{CN}$	-	.58/.67 ** .52/.54 **	-	-
$CI_{AU} \rightarrow CI_{CN}$ $FS_{AU} \rightarrow FS_{CN}$	-	-	.82/.79 ** .59/.63 **	.69/.70 ** .48/.48 **
$CI_{MX} \rightarrow CI_{CN}$ $FS_{MX} \rightarrow FS_{CN}$	-	-	-	.03/.03 .13/.13 **

**\*\* Parameter estimates statistically significant at the .01 level.**

\* These unstandardized/standardized coefficients are obtained from the pack membership models presented in the data analysis section.

Thus, in Great Britain, Canada's high level of association with the Netherlands at the country level was proportionally reflected in a high level of association between those countries' food industries. The slightly lower level of association between Canada and the U.S. at the country level was mirrored in proportionally lower cross-industry association. In the Japanese market, the variance in Canada's country image was explained by the Australian country image to a much larger degree than by the U.S. country image. Although a similar pattern was observed for these countries' respective food industries, the association between Canada and Australia was not as strong at the industry level as at the country level. In contrast, the U.S., which explained a relatively small proportion of variance in the Canadian image when controlling for the effect of the Australian image, accounted for appreciable variance in the perception of the quality of

the Canadian food system. In the U.S., highly compatible images of Canada and Australia seemed to trigger consumer perception of similarity between their food systems. Consequently, the Australian food system is assumed to share Canada's competitive positioning in the food sector. Only in Germany, where Canada was compared with France and the U.S., was Canada's strong association with France in terms of country level characteristics not adequately reflected in perceived similarities between the Canadian and French food systems. As a result, Canada's food system was more strongly linked with the U.S. food system than with French food system. However, the failure of the German data to support Hypothesis #3 can be interpreted as additional evidence in support of Hypothesis #6, which pertains to the uniqueness of France in the food industry.

#### **5.1.4. Hypothesis #4**

*H4: The perception of the food industry of a specific country is influenced more by attitudes towards the food industries of other pack members than by the image of that country.*

This hypothesis, tested with Canada as the target country, was supported in all international markets. Consumers' perception of the Canadian food industry was found to be consistently better predicted by their perception of the food industry of a developed country considered in the study than by the Canadian country image. Thus, although the Canadian country image ( $CI_{CN}$ ) seems to make a large contribution to explaining variance in the Canadian food system ( $FS_{CN}$ ), its value is partially redundant in the context of the food systems of its competitors.

**Table 60. Coefficients of the Pathways  $CI_{CN} \rightarrow FS_{CN}$  and  $FS_{COM} \rightarrow FS_{CN}$ \***

Pathways	Surveyed Countries			
	Germany	GB	Japan	USA
$CI_{CN} \rightarrow FS_{CN}$	.26/.21	.18/.15	.14/.15	.38/.37
$FS_{US} \rightarrow FS_{CN}$	.51/.57	.39/.47	.32/.31	
$FS_{FR} \rightarrow FS_{CN}$	.36/.29	-	-	-
$FS_{NL} \rightarrow FS_{CN}$	-	.52/.54	-	-
$FS_{AU} \rightarrow FS_{CN}$	-	-	.53/.62	.48/.48
$FS_{MX} \rightarrow FS_{CN}$	-	-	-	.13/.13

*Note: All parameters are statistically significant at the .01 level.*

\* These unstandardized/standardized coefficients are obtained from the pack membership models presented in the data analysis section.

An examination of the spatial proximity between the measures of the country image of each of the surveyed countries in relation to the quality of the food systems of the competing countries leads to the conclusion that the industry-level attributes of a specific country tend to be separated from the country-level attributes of that country to a larger degree than they are from the attributes of the competitive food systems. The only exception to this pattern was found in the relationship between France's image and its food system, which signals France's unique position in the food industry. In the German data, the perceptual distance between measures of the French country image and the French food system is very short compared to that separating the French food system from the food systems of its competitors (i.e., Canada and the U.S). The Canadian food system, however, greatly overlaps with the systems of its immediate pack members (i.e.,

the Netherlands in Great Britain, and Australia in Japan and the U.S.), but is relatively distant in the two-dimensional space from the Canadian country image.

### **5.1.5. Hypothesis #5**

***H5:** Familiarity with products from a country moderates the relative importance of the country-of-origin image cue in relation to the pack membership cue. [More specifically, higher product familiarity results in lower reliance on the pack membership cue in relation to the country of origin image cue].*

The multiple group invariance tests involving the comparison of the direct effects (i.e., the effect of the Canadian image on the Canadian food system with the effect of either competitor's food system on the Canadian food system) do not support group differences in the use of the COO cue or the pack membership cue. However, because of the possibility that the absence of discernible differences at the level of the "omnibus" tests was due to lack of power, the specific parameters pertaining to Hypothesis #5 were examined by using the two-sample z-test. The results confirmed the suspected lack of power of the omnibus tests by revealing significant differences in the magnitudes of the relevant parameters between the two groups in all markets but the U.S. (see Table 61). In Germany, Great Britain, and Japan, the diagnosticity of the COO cue ( $CI_{CN} \rightarrow FS_{CN}$ ) is higher among consumers who are familiar with Canadian products than among those who are not. At the same time, the utility of the pack membership cue ( $FS_{COM} \rightarrow FS_{CN}$ ), that is, the effect of the food system of the immediate pack member on the evaluation of the Canadian food system, is lower among familiar consumers than among unfamiliar consumers. The same pattern was also observed in the U.S. data, but the difference in the values of the tested parameters was not significant.

**Table 61. Estimates of the Two-Group Pack Membership Model**

Pathways	Surveyed Countries			
	Germany	GB	Japan	USA
CI <sub>CN</sub> → FS <sub>CN</sub>	.27 <sup>F</sup> / .16 <sup>U*</sup>	.18 <sup>F</sup> / .15 <sup>U***</sup>	.21 <sup>F</sup> / .11 <sup>U***</sup>	.39 <sup>F</sup> / .33 <sup>U</sup>
FS <sub>US</sub> → FS <sub>CN</sub>	.42 <sup>F</sup> / .58 <sup>U***</sup>	.39 <sup>F</sup> / .47 <sup>U</sup>	.36 <sup>F</sup> / .30 <sup>U</sup>	
FS <sub>FR</sub> → FS <sub>CN</sub>	.37 <sup>F</sup> / .37 <sup>U</sup>	-	-	-
FS <sub>NL</sub> → FS <sub>CN</sub>	-	.38 <sup>F</sup> / .65 <sup>U***</sup>	-	-
FS <sub>AU</sub> → FS <sub>CN</sub>	-	-	.45 <sup>F</sup> / .56 <sup>U***</sup>	.45 <sup>F</sup> / .50 <sup>U</sup>
FS <sub>MX</sub> → FS <sub>CN</sub>	-	-	-	.10 <sup>F</sup> / .17 <sup>U</sup>
<sup>F</sup> Familiar group; <sup>U</sup> Unfamiliar group <i>Note: Group differences are statistically significant at:  * the .1 level, ** the .05 level, or *** the .01 level.</i>				

It is important to stress that product familiarity was found to moderate the relative difference in the magnitudes of the country-of-origin image and sub-pack membership effects. Still, the impact of the sub-pack membership effect exceeds that of the COO in both groups. Thus, the moderating role of product familiarity is not sufficiently strong to counter the importance of these two effects. Nevertheless, since the hypothesis predicts a change in relative importance rather than in absolute terms, it can be supported with a high degree of confidence.

Finally, though the two-group analysis was conducted to confirm the postulated relations between the pack membership cue and the COO cue, very interesting findings emerged as a result of this statistical enquiry. The analysis provides evidence that familiarity may change the point of reference in assessing the Canadian food system or influence the

associations made by consumers at both country and industry level. For example, consumers who consider Canada to share similarities with France can be more receptive to the idea of buying Canadian products and develop better knowledge of Canadian offerings. These findings could be used by Agriculture Canada to bring about the association between Canada and France in their promotional campaigns. After all, Canada is the home of generations of descendants of original settlers from France, one of Canada's founding nations, and many Canadian culinary specialties have a French flavour.

#### **5.1.6. Hypothesis #6**

*H6: Countries with unique standing in the food industry are less prone to category-based evaluation than countries with no such position.*

Since the estimates of the pack membership model tested in the German market with Canada as the target country don't provide sufficient information to test this hypothesis, an additional model was specified for France in Section 4.2.1.3. Table 62 reports unstandardized and standardized parameter estimates for the tested relationships (i.e., the  $\beta$  parameters) extracted from the models designed for Canada and France as target countries. As anticipated, the relative importance of the country-of-origin image cue ( $CI_{TG} \rightarrow FS_{TG}$ ) in relation to the pack membership cue (either  $FS_{COM1} \rightarrow FS_{TG}$  or  $FS_{COM2} \rightarrow FS_{TG}$ ), is significantly higher for France than for Canada. Whereas the contribution of the competitors' food systems in explaining variance in the quality of the French food system is significantly smaller than those reported for Canada, the impact of the French country image on the evaluation of the French food industry is significantly higher than

the corresponding effect for Canada in the German market. Finally, when comparing unstandardized path coefficients, the French country image accounts for a much larger proportion of variance in the perception of the quality of its food industry than the perceptions of the food systems of its competitors do. Though the data support hypothesis #6, it is fair to note that a thorough examination of the uniqueness hypothesis requires new data that are not available at this point.

**Table 62. Coefficients of the Pathways  $CI_{TG} \rightarrow FS_{TG}$  and  $FS_{COM} \rightarrow FS_{TG}$ \***

Pathways	Target Country (TG)	
	France	Canada
$CI_{TG} \rightarrow FS_{TG}$		
$CI_{FR} \rightarrow FS_{FR}$ $CI_{CN} \rightarrow FS_{CN}$	.61/.48 **	.26/.21 **
$FS_{COM1} \rightarrow FS_{TG}$		
$FS_{CN} \rightarrow FS_{FR}$ $FS_{US} \rightarrow FS_{CN}$	.38/.47 **	.51/.57 **
$FS_{COM2} \rightarrow FS_{TG}$		
$FS_{US} \rightarrow FS_{FR}$ $FS_{FR} \rightarrow FS_{CN}$	.00/.00	.36/.29 **
<b>** Parameter estimates statistically significant at the .01 level.</b>		

\* These unstandardized/standardized coefficients are obtained from the pack membership models tested in the German market, with France and Canada, as a targeted country.

All analyses of the German data point to the unique position held by France in the food industry. With the highest average scores across all aspects of its food system, its country image strongly aligned with its food system image, and a large perceptual distance between its food system and the food systems of its two competitors in the German market (i.e., Canada and the U.S.), France is placed in a perceptual spotlight. The DFA analysis reveals that France's reputation for good food system, in particular for

“producing food that is good to eat” and for “wholesome foods”, is the main discriminator between the French food system and the food systems of its competitors. Though other variables, such as “country’s food is always of high quality” and “I can be confident to get good food products from [that] country,” are highly correlated with the discriminant function, they are redundant in the model, and they don’t significantly contribute to group separation.

## **5.2. INTERPRETATION OF FINDINGS**

This section elaborates on the research findings from the perspective of the research questions, which were developed to ensure adequate coverage of the managerial objectives of the study. The discussion, aimed at the interpretation of the research findings in relation to the specific research objectives, is set out in two parts. The first part, the relevance of Canada’s country image in international agri-food markets (5.2.1.), highlights the findings pertaining to the impact of country image in shaping Canada’s position in the food sector. The second part, Canada’s competitive positioning in the food industry (5.2.2), focuses on Canada’s performance in international agri-food markets in relation to that of its competitors considered in the survey. However, these two parts are not mutually exclusive as Canada’s country image is postulated to play a dual role in consumers’ evaluation of the Canadian food industry.

### 5.2.1. Canada's Country Image

**Research questions:**

- *How relevant is Canada's country image in consumers' evaluation of the Canadian food industry?*
- *Does Canada's country image differentiate it from its competitors in international agri-food markets?*
- *To what extent is Canada's country image reflected in consumers' evaluation of the Canadian food industry in each of four surveyed countries (i.e., Germany, Great Britain, Japan, and the U.S.)?*

Canada's country image was found to be relevant in consumers' evaluation of the Canadian food industry across all surveyed markets (i.e., Germany, Great Britain, Japan, and the U.S.). As discussed in Section 5.1.1., the Canadian country image explains a significant amount of variance in the perception of the quality of the Canadian food system. However, beyond cross-industry influences, the effect of Canada's country image on consumer perception of its food industry seems to vary with the surveyed market and consumer familiarity with Canadian products. Familiar consumers tend to rely on the Canadian country image to a larger degree than unfamiliar consumers do.

Overall, Canada enjoys a strong country image across all surveyed markets. The ratings received in the survey suggest that, as a country, Canada holds a strong international position. It is appreciated for its good way of life, its good reputation in the world, and for its environment with clean air and water. Moreover, Canada is perceived by international consumers as a stable country with well educated, hard-working, and likeable people. In the competitive sense, Canada consistently leads on the environmental factor. Its air and water are seen as cleaner than those of the U.S., France, the Netherlands, Mexico, and

even Australia. However, various aspects of Canada's country image, which are either compatible with or outperform corresponding attributes of the country image of France, Australia, and the Netherlands, are not always reflected in the ratings received for its food system<sup>7</sup>.

Organizing countries into groups and subgroups is consistent with the cognitive propensity to categorize in order to simplify information and enable its quick retrieval. Even though objects are often placed in a category based on superficial or non-diagnostic features (Hutchinson and Alba, 1991), a blending effect is likely to take place. Thus, once Canada is grouped in a category with another country (i.e., a pack member), it is expected to share some characteristics of the other countries in the pack. Consequently, the food systems of pack members are related to one another through category inclusion, especially when consumers have little knowledge about the individual countries.

It has been argued in this dissertation that the most basic linkage between countries, as perceived by consumers, is their shared level of development. The strength and impact of this association is well covered in the country-of-origin literature in terms of positive bias towards developed countries. The results of the SEM, MDS, and DFA analyses conducted in this study using the U.S. data provide empirical evidence to support the assertion that there exists a large perceptual gap between "developed" and "developing" countries, and that this gap is relevant in the evaluation of the food industries of different countries. Based on the pack membership model, the average contribution of the Mexican

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<sup>7</sup> The relevant means of scale measures for Canada and its competitors have been withheld due to confidentiality of the data.

country image in explaining variance in the Canadian image when controlling for the Australian country image is zero. Accordingly, consumer perceptions of the Mexican food industry play a very small part in their evaluation of the Canadian food industry. The small degree of variance shared between the two systems most likely reflects the positive bias of Americans towards members of NAFTA. However, despite geographical proximity and consumers' equal respect for the "hard-working people" of both Canada and Mexico, they are barely connected in the minds of American consumers. Consequently, they are placed in two different categories. In terms of its economic development, Mexico belongs to a group of competitively disadvantaged countries, whereas Canada is a member of the club or pack of economic elites.

Although most consumers will associate Canada generally with economically developed countries, it is also likely that they will narrow the spectrum to a smaller consideration set and identify Canada specifically with one or more developed countries. Sub-pack membership assignment (categorization within the group of developed countries) is based on similarities between countries along a wide range of country-related attributes (discussed in Section 2.3.5), such as geography, culture, size of the economy, or unspoiled nature of the environment. According to the findings of this research, Canada is more or less associated with each economically compatible country evaluated in the survey and considered by AAFC as Canada's main competitor in a given international market. Each of these associations is triggered by different similarities and contributes independently to the evaluation of the quality of the Canadian food system. It was found that, generally, the stronger the association between Canada and its industry competitor

(i.e., pack member) at the country level, the stronger the association between Canada and its pack member at the food industry level. Hence, the overlapping of country images is postulated to provide a basis for consumers' linking of food system perceptions between countries. For example, consumers in Great Britain who linked Canada as a country with the Netherlands more closely than with the U.S. also applied this relationship in their evaluation of the Canadian food industry. Similarly, Japanese consumers' perceived association between Canada and Australia became the most relevant information in understanding their evaluation of the Canadian food industry. In both cases, the significantly weaker association between Canada and the U.S. was of secondary importance in evaluating Canada's food industry. The only exception to this pattern, found in the German data, concerned Canada's association with France. While France ranked most highly for "a good way of life" and Canada for "an environment with clean air and water," the two countries were found to be very similar with respect to most characteristics of country-of-origin image. In contrast, the U.S. shared very few anchor points with Canada in country image perceptions. Still, in the European markets (Germany and Great Britain), the two North American nations (i.e., Canada and the U.S.) seem to be tied by the perception of their shared economy (i.e., economic partnership). Other similarities may be masked by the poor ratings obtained by the U.S. for its "reputation in the world". Nevertheless, beliefs about the U.S. food system seemed to significantly affect German consumers' judgments of the quality of the Canadian food system. And even though the link between the Canadian and French food industries exists in the correlation data, France enjoys a category of its own that subsumes the performance of France along the country image and food industry dimensions.

The unique contribution of the Canadian country image in shaping consumers' perceptions of the Canadian food industry is significantly smaller than the shared country image that is postulated to govern the categorization process and, consequently, to result in a competitive food industry having a significant impact on beliefs about the Canadian food system. In sharp contrast, the uniqueness of France's country image as a partial reflection of beliefs about its food system, which reinforces its country image, is not only strong but also considerably stronger than the influence of attitudes towards competitive food systems on consumers' perception of the French food system. Accordingly, the French country image explains a very high amount of variance in the perception of the quality of the French food system. Interestingly, its country level attributes that overlap with attributes of another country do not evoke the expected perception of similarity between corresponding food systems.

### 5.2.2. Canada's Competitive Positioning

**Research questions:**

- *In a complex international environment, how are consumers' perceptions of and attitudes towards Canada's food industry in a given market influenced by or differentiated from perceptions of Canada's industry competitors in that same market?*
- *Which of Canada's industry competitors is most closely associated with Canada (i.e., belongs to the same sub-pack) and/or shares Canada's competitive positioning in the food sector in different markets?*
- *Can alignment with some competitors differentially advantage Canada's positioning in certain markets and alignment with others disadvantage Canada?*

It has been demonstrated in this research that consumers' reliance on schema evaluation (i.e., the pack membership cue) can be very rewarding in terms of information content if

applied to countries that are not well differentiated from their competitors in the food industry. Unlike France with its outstanding “reputation for producing food that is good to eat” and the U.S. with its low ranking for wholesome foods, the food industries of the other evaluated countries across the surveyed markets (i.e., Germany, Great Britain, Japan, and the U.S.) tend to be fairly compatible. They all have acceptable standards and levels of regulation, they know how to produce safe foods, and they can provide consumers with similar levels of overall satisfaction with the foods they grow or produce. Nevertheless, a large number of the surveyed consumers in each international market tended to be selective. Their preferences can be explained, at least to some degree, by the perceived uniqueness, or non-typicality, of the country of their choice.

While the pack membership (i.e., cross-industry similarities) cue can be seen as an evaluative tool that competes with the COO cue (i.e., country-of-origin image cue) in explaining food industry perceptions, being associated or compared with another country may not necessary result in negative outcomes; in fact, just the opposite can occur. For example, it seems possible that Canada could elevate its position by accentuating its association with certain competitors or, at least, with certain aspects of their images. The research indicates that there may be some competitive gain for Canada by establishing closer perceptual links with France. The linkage already exists at the country level but is hardly reflected at the industry level. Why? Because there is only one France in the world of foods. So, the ultimate question is whether and how Canada could be perceived in the food industry as being more closely linked with France. Certainly, Canada’s heritage comprises a strong component of French culture. Descendents of French settlers carry on

the French culinary tradition on Canadian soil, French-Canadian monks cultivate French know-how in cheese making (e.g., Oka cheese), and many of Canada's cultural offerings are rooted in Quebec (e.g., Cirque du Soleil).

On the one hand, Canada seems to be immune to the generalization effects that would be expected as a result of its economic partnership with its closest neighbor, whose rating for "reputation in the world" is low in comparison to the scores of the other evaluated countries. Canada's average score on the question of its "reputation in the world" is very close to that received by France in the German market. Similarly, in Great Britain, Canada's reputation as a country significantly contributes to its brand power. On the other hand, there are indications that Canada may suffer from its association with the U.S. The lower scores given by German consumers for "Canada has a good way of life" and "Canadians are well educated" correspond to the very low ratings obtained by the U.S. on the same indicators of the country image scale.

In Japan, unlike in other international markets, the factors underlying the pack formation between Canada and the U.S. seem to have little to do with their economic partnership. The U.S. seems to be admired in Japan for its robust economy and technological advancement as much as Canada is for its strong performance along environmental criteria. While the latter places Canada in a sub-pack with Australia, it also tends to separate the two countries from the U.S. Instead, what seems to constitute a bridge between the pack and the U.S. is the image of the people. All three countries appear to suffer from a very strong outward bias (i.e., stereotypical beliefs about disfavoured others) manifested in the low level of willingness on the part of the Japanese to buy their

foods<sup>8</sup>. Thus, though the penetration of the Japanese market by either Western or English speaking nations may constitute a challenge, there are examples in the press pointing to very successful acceptance of Australian food products (Hori et al., 2003). The Japanese data also show that Australian food products are better received than products from Canada and the U.S. Consequently, if Canada wants to compete successfully with Australia in the Japanese market, it must find its own place and distinctive identity. Its current image as an environmentally clean country combined with its good reputation in the world could be more rewarding in a marketing sense if enhanced with the image of economic and technological superiority, attributes that could be borrowed by association from its North American neighbour. After all, despite very close links between Canada and Australia at the country level, observed in particular among Japanese consumers unfamiliar with Canadian products, attitudes of consumers towards the Canadian food system are still significantly affected by their perception of the American food system.

Although Canada is more likely to be associated with another evaluated country than with the U.S., it seems quite apparent that Canada and the U.S. constitute a sub-pack with regards to geographical proximity. For Canada, the association may be problematic, but only if it's left unmanaged. The bottom line is that Canada is already connected "by default" with the U.S. in the minds of consumers around the world, and that, despite many differences in the way Canada is perceived, the country remains one of the two prosperous nations in North America (Anholt, 2005). However, as long as Canada's foreign policy can be perceptually separated from that of its politically and militarily

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<sup>8</sup> The average ratings obtained by Australia, Canada, and the U.S. on a willingness scale ranging from 1 to 7 are 3.3, 3.1, and 2.8 respectively.

powerful neighbour, America's "spells of unpopularity" (Anholt, 2005) will not leak across the border. The main area of concern for Canada involves the spillover effect triggered by economic association or potential technological association.

### **5.3. IMPORTANCE OF THE RESEARCH**

Years of academic country-of-origin research has resulted in little comprehension of the cognitive processes behind the use of the COO cue (Knight and Calantone, 2000). The pack membership construct, introduced in this dissertation, sheds light on one aspect of the human cognition factor that may guide consumer product evaluation and selection in the global setting. Country image seen through the pack membership prism may play an important role in buyer choice, a role that is not fully appreciated in current marketing literature. Thus, it is hoped that bringing the findings embedded in categorization theory into COO research will have an impact on the existing marketing theory concerned with consumer product evaluation processes. Moreover, the theory development takes place in the international arena, namely Great Britain, Germany, Japan, and the U.S., where the effect of Canada's image on the perception of the Canadian food industry is evaluated in the context of Canada's competitors in each of those markets. Understanding Canada's standing vis-à-vis its competitors should be of interest to Agriculture and Agri-Food Canada (AAFC) and Canadian industry producers.

#### **5.3.1. Academic Implications**

The pack membership construct introduced in this dissertation is hypothesized to serve as a heuristic utilized by consumers to "make global assessments of a product" (Johansson, 1989). As a manifestation of categorization theory-in-use, the construct reflects a means

to streamline the decision-making process and “reduce cognitive efforts.” Stored in the memory as chunk information (Miller, 1956), pack membership association may be activated when a consumer attempts to assess a product or brand of a pack member whose products are not well known on the market or whose presence is undetected due to the blending effect. For example, a Japanese consumer’s familiarity with Australian products or brands, particularly in a specific product category (e.g. food), would result in that consumer’s relying on information abstracted about those products when evaluating Canadian products. In such a case, inferences about Canadian products would be based on the pack membership cue.

One of the implications of the research is its potential contribution to a better understanding of the theoretical framework advanced by Han (1989). It is expected that the utility of the “halo effect” would be considerably lessened if consumer familiarity with a product from a specific country is indirectly acquired by familiarity with products from a country regarded (by the consumer) as similar in its capability to produce qualitatively comparable products. Thus, while most research assumes the impact of country image on consumer product evaluation via the halo effect, this effect may not be as strong as previously thought in the era of globalization if the consumer uses the attributes of products from countries they perceive as similar in the product evaluation process. Within the frame of pack and sub-pack membership, common or shared aspects of country image (in contrast to unique aspects of country image) may play a significant role, though indirect and less appreciated, in product evaluation. In congruence with categorization theory, general country image may serve mostly as an input in cognitive

reasoning or in the process of making associations between countries. For example, for the consumer, the food system of one country can take on characteristics of the food system of another country in the pack or sub-pack because of the connection made between corresponding attributes of the respective country images, which can be seen as predictive of the sector's performance.

The study also provides valuable insights into the literature concerned with product familiarity. The findings of this research suggest that product familiarity moderates the extent to which consumers rely on various cues. Even more importantly, the research points out the impact that product familiarity has on the relative importance of these cues. Having compared the relative contribution of the COO effect and the pack membership effect in explaining consumers' perceptions of the Canadian food system in four international food markets, the study concludes that the importance of the COO cue increases in relation to the pack membership cue as consumers become more familiar with products of the evaluated country. In other words, consumers familiar with Canadian products were found to be less influenced by schema evaluation of the Canadian food industry than their counterparts who were unfamiliar. Instead, familiar consumers were more likely to use information about Canada signified by the Canadian country image. Thus, the research clearly provides support for the categorization literature which holds that familiarity negatively affects the strength of categorization schema in the assessment of stimuli. Moreover, the research findings may contribute to the debate about familiarity that has engaged many scholars in the country-of-origin literature. While many of these scholars assume a negative relationship between familiarity and the COO cue, the

relation seems to be highly positive when explored in the context of other heuristics. Since the implications of this study with regards to the impact of familiarity on the importance of national brands seem to be better grounded in the branding literature than in the COO literature, the study may suggest the need to reconcile these two streams of research.

The study also empirically confirms and validates the impact of the non-typicality of a member within a category as postulated by psychologists. According to the findings of this research, a country (i.e., France in this study) perceived as unique with regards to its standing in an industry, tends to be evaluated based on individual indicators of performance (e.g., country image) rather than schematic structures. Although this study explores a country's uniqueness or non-typicality in terms of positive characteristics, it also provides evidence that negative perception of a country may impact pack membership association and its effects. For example, the negative reputation of the U.S. in the world and specifically in the food industry seems to perceptually separate the country from other developed nations. Consequently, its membership in the North American sub-pack with Canada is less well defined than anticipated.

Finally, this study may provide some insights into other research domains which traditionally have not employed the concept of categorization to explain investigated phenomena. For example, sub-pack membership, whereby an evaluated foreign country is placed in the same category as the home country on the basis of proximity, culture, economy, or politics, may provide an explanation for extended domestic bias. Similarly,

the notion of grouping countries according to consumer affect may shed some light on the evaluative processes explored in animosity studies.

### **5.3.2. Managerial Implications**

Guided by the research objectives stated in Section 3, the study provides the AAFC with an assessment of Canada's competitiveness in international agri-food markets. In contrast to the traditional emphasis on a single-focus evaluation of Canada's performance in terms of its country image, the findings of this research offer valuable insight into different influences underlying the formation of international consumer attitudes towards the Canadian food system. Thus, various perspectives on Canada's performance vis-à-vis its main competitors presented by the study are expected to have important implications for the focus and scope of the international Canada Brand initiative.

Moreover, the study points to the danger of assuming the adequacy of simplicity in the food product evaluation process. First, an evaluation of Canada's international position solely in terms of its country image may create too optimistic an outlook on Canada's ability to capitalize on its overall positive reputation. Second, ratings obtained for Canada's food system may create a false sense of competitive advantage in some survey markets, while indicating negatively distorted prospects in others. Consequently, the AAFC's efforts dedicated to the enhancement of Canada's National Brand in the food industry should be grounded in an understanding of the complexity surrounding the role of country image in Canada's positioning in international agri-food markets. The findings of this study suggest that AAFC's strategy should be tailored not only to each

international agri-food market but also to product categories with different international competitors.

Finally, the findings of the study conducted in three international markets diverge considerably from Anholt's (2005) view that Canada is inherently linked with its North American neighbour and the most branded country in the world. While Canada may be tied to the United States by a regional image, the linkage is not as strong as might be anticipated. In fact, German, British, and Japanese consumers tend to closely associate Canada with a country other than the U.S.

#### **5.3.2.1. Importance of Canada's National Brand**

According to Anholt (2005), Canada is one of the most admired and respected countries in the world. Yet, "unlike Sweden, Germany, or Italy," he points out, Canada is not recognized for "loved and world-famous brands. Unlike Britain, [Canada has no] internationally prominent or respected political figures, [nor] is it an especially prolific or prominent contributor of cultural offerings on the world stage" (Anholt, 2005). Rather, Anholt (2005) attributes Canada's national brand power to a kind of "purity" which, he observes, extends "beyond the environment into the moral and the political sphere" (Anholt, 2005).

Based on the data obtained from four international food markets surveyed in the study, this research confirms the prevalent image of Canada as a country enjoying clean air and water and a solid reputation in the world resting upon respect and affection towards its

people. The remaining indicators of Canada's national performance evaluated in this study suggest that Canada holds a strong position among other developed countries, specifically France, the Netherlands, Australia, and the U.S. However, it is difficult to point to the areas of weakness in Canada's image that could explain the lower scores obtained by Canada along the indicators of the quality of its food system. In Germany, most aspects of Canada's image overlap with the image of France, yet these two countries are not on the same footing with respect to their food systems. To explain the difference in terms of the ratings, we may need to focus on the item on the country image scale that places these countries quite far apart in the perceptual space as seen by German consumers. Unquestionably, the perception of "a good way of life" separates France from Canada more than other measures of country image do. In the case of France, this aspect of country image may include French lifestyle, culture, landscape, architecture, and cuisine. While all these items may contribute to France's positive image, it is French cuisine in particular that is expected to have direct relevance in the evaluation of the French food system. French wine, cheese, pastry, and culinary arts are testimonials of French uniqueness in the world of food in terms of exceptional quality, product variety, and international fame. Thus, France's country image seems to represent a "summary construct" reflecting, in part, the country's performance in the food industry. In contrast, Canada's edge on the environmental factor is not matched by internationally recognized branded products of Canadian origin that could provide a much desired link between the environment and product quality. Consequently, the ratings obtained for Canada's perceived performance in the food industry reflect its potential to deliver quality food products, a promise accompanied perhaps by some uncertainty. For example, the logo

depicting the iconic Matterhorn which is seen on many Swiss offerings, including food products, serves as an image of Switzerland's environmental beauty and purity, but it also symbolizes the consistency of Swiss quality and excellence. A striking image depicting an aspect of Canada's natural environment might serve as a cognitive logo on Canadian food products promoting a strong sense of Canadian identity and helping to strengthen the country's positioning in the international agri-food market, but the image would need to be substantiated by superior product quality to effectively attract consumers over the long term.

#### **5.3.2.2. Influence of Canada's Competitors**

In the context of Canada's competitive positioning in the food sector, it is very important to understand how Canada as a country is perceived in the global marketplace. However, Canada's general country image as perceived in a particular market may tell only part of the story about the country's ability to deliver high quality food products. Moreover, taking into account Canada's low international presence in other product categories, Canada's country image is not likely to reflect attitudes towards any specific sector of the Canadian economy (Interbrand\_BCB2006).

Given the limited international presence and visibility of Canada's products, consumer expectations of Canada's capabilities in the food sector will likely be based on their experiences with products made in other developed countries with whom Canada is closely associated (i.e., Canada's fellow sub-pack members). In terms of categorization theory, Canada can be cognitively linked with various international players. Moreover,

Canada can be present in many country categories at once in the same target market. Each category triggers different associations and points to the importance of different competitors.

The significance of an individual competitor is contingent on its performance as well as its contribution to category formation. Nonequivalence of category members implies that Canada's standing in a given category depends on whether it is perceived as prototypical or as a lesser member. According to Eysenck and Keane (2000), a prototypical member serves as a benchmark for the rest of the members in a category or as a stimulus providing a base of generalization that affects other stimuli (as postulated by the universal law of generalization). For example, among U.S. respondents, Canada may enjoy the benefits of a prototypical member in a category based on environmental purity; however, lack of awareness of Canadian products in the Japanese market may put Canada in the position of being compared to Australia as the category's prototypical country. The association between Canada and Australia may be stronger among respondents for whom the environment is an important factor in product evaluation. However, consumers who do not have a mental image of both countries as similarly green and pure may place both countries in distinct categories. Those with conflicting information about the environmental performance of the two countries may place them in multiple overlapping categories following the principle of indeterminacy of category membership.

While the pack membership effect can provide benefits, it can also pose threats to the positioning of Canadian food products in specific markets. At the main level of

categorization, Canada is expected to share the advantages of the positive bias that consumers hold towards developed countries generally and towards specific pack members. However, taking into account within-category variability (Cohen, 1982), it must be assumed that the perceived degree of typicality among developed countries varies widely. Consequently, at the lower level of categorization, Canada's food system may be grouped with systems of other countries on the basis of similarities and differences along one or more dimensions. Thus, the characteristics of Canada's country and people images that overlap with those of other countries can serve primarily as the basis for further consumer comparison, categorization, and generalization. In such a case, unique aspects of Canada's inherent endowments can play a direct role in product evaluation.

Although people tend to rely on pre-existing associations to organize information (Lachman, Lachman, and Butterfield, 1979), categorization is a dynamic process influenced by learning. Consequently, when new Canadian food products are introduced, a change in the country image in absolute terms or in relation to the image of other countries (Nagashima, 1977) should be anticipated. Thus, once Canada introduces its "made in Canada" products to the global market, they will contribute to the process of shaping the Canadian image and position Canadian products among those of its competitors. This information will also enter into the categorization process. Still, the Canadian image projected in a given market and the positioning strategy employed by Canadian producers can be used to emphasize either commonalities or differences between Canadian products and the products of its competitors.

### **5.3.2.3. Strategy Formulation**

Current research points to two ways for Canada to improve its performance in the food industry: first, through the informational value of Brand Canada in the evaluation of the Canadian food industry, and second, through association with its competitors. According to the main highlights of the environmental scan conducted in this study, the impact of Brand Canada on Canada's competitive position depends on consumer familiarity with Canadian products and awareness of Canada's uniqueness or positive differentiation.

According to the findings of this study, Canada's image is an asset that should be utilized more effectively by participants in the Canadian food industry. To generate the full benefits of a positive country image, Canada needs to realign its country image with its industrial performance. Currently Canada's image seems to convey merely the promise of good performance; consequently, the introduction of truly distinctive brands featuring a "made in Canada" label is crucial to raising Canada's profile in the international food markets. However, the success of marketing initiatives that emphasize "made in" while promoting Canadian food products seems to be contingent on the contextual relevance of the promoted image. Recognizing that the various aspects of Canada's country image may be reflected differently in attitudes towards Canada's food products depending on the food category, technological complexity required to produce the evaluated food product, or ease with which a product can be assessed, AAFC should understand the impact of Canada's country image in a given market in terms of its contribution to product evaluation.

Since Canada is praised for the cleanliness of its air and water more than any other country evaluated in the surveyed markets, the environment may be considered a key factor in articulating Canadian identity. Moreover, it can be argued that this aspect of the Canadian image should be of great value to the Canadian food industry, in the same way as it appears to be for the food systems in Australia and New Zealand (see Section 2.2.4.2). Consequently, the image of environmental purity may not be unique to Canada in the presence of countries with a similar promotional image.

Generally, the overlapping image does not indicate competitive advantage. However, taking into account consumer lack of experience with Canadian products, Canada may benefit from the transfer of attributes related to industry performance. For example, the association with Australia, a country with a long track record in the Asian market, could mitigate Japanese consumers' uncertainty when deciding to buy Canadian products. Similarly, the linkage between Canada and the Netherlands in the Great Britain market may blur the perception of Canada as an outsider in the European market. Finally, the most promising association for Canada reported in this study was based on the historical tie with France. If the linkage between Canada and France is seen by marketers of particular Canadian products or product categories as beneficial to improving consumer perception of those products in specific international markets, the similarities between the two countries could be enhanced by the use of promotional tools referring to Canada's vibrant French heritage.

The main lesson learned from the data analyzed in this research is that there are many industry players with whom Canada can be associated. Most of these associations already exist in the minds of international consumers; other can be created. In this effort, a recent success story which could serve as an example is Korea's adventure in the technology sector. While Korean cars resemble German cars (e.g., Hyundai Sonata and Volkswagen CC) and display slightly modified Japanese logos (e.g., Hyundai's logo and Honda's logo), Korean hand-held electronic products are modeled on Apple products (e.g., iPhone and iPad). The promotional message, positioning on store shelves and placement in catalogs and flyers seem to be equally important in getting out the message that Korean products are equivalent in quality to those made in Japan, Germany, and the U.S. Most importantly, the Korean marketing efforts have been supported by Korean investment in the quality of its products. Each technical report comparing Korea with its dominant competitors in a given market was a testimony to the fact that there is more to Korean products than their look. Consequently, the Korean example provides evidence that, in the global market, borrowing an image from the best in a given product category can improve product acceptance, industry perception, and country image.

For Canada, building associations with some of its industry competitors could serve a double purpose. First, being linked with a selected industry competitor could help to avoid or undo a connection with a less reputable competitor that might cast a shadow on the perception of Canada's performance in the food industry. In the case of Korea, being associated with a developed country such as Japan was critical to diminishing its image as a member of a pack of developing countries and, more specifically, of a region-based

sub-pack with China. Second, the association with a competitor who holds a prominent position in a given market could help Canada to enhance its country image.

Though the reliance on the image of major players in an industry may have its benefits, it may also imply a secondary position in the marketplace. As a follower, a country cannot expect to generate the same level of recognition as a leader. Consequently, the question is how to borrow desired attributes from an industry competitor and still maintain a strong sense of identity and a unique position in the food industry. In contrast to Korea's humble beginning as a developing country, Canada already has a strong image to protect and build on.

According to the study results, the informational value or effectiveness of Brand Canada, captured in this study as a linkage between the Canadian country image and its food industry, is affected by consumer familiarity with Canadian products. Consumers in Great Britain, Germany, and Japan, who claim to have at least moderate knowledge of Canadian offerings, tend to apply information conveyed by Brand Canada in their judgments of the Canadian food industry to a significantly larger degree than consumers who assess their knowledge of Canadian products as little or none. Moreover, as the value of the COO cue increases with product knowledge, the strength of and reliance on the pack membership cue associated with a country sharing a similar competitive position diminishes.

While the level of association between Canada and other countries may be strategically sound in the short run, the ultimate goal for the creation of a strong national brand should rest on incorporating the desired characteristics transferred from these competitors into Canada's permanent country image. A concept developed by the categorization theorists Sujan and Bettman (1989) could offer some guidance for the AAFC efforts in expanding and enriching Brand Canada:

*"[P]erceptions that a brand is strongly discrepant result in a subtyped (or niche) position, whereas perceptions that a brand is moderately discrepant result in a differentiated position within the general category"* (p. 454).

Applied to Canada, it means that the Canadian image promoted on the grounds of environmental purity may help Canada to become a prototypical leader in a sub-pack based on environmental associations. However, for Brand Canada to be considered unique, it must convey that it offers something that its competitors in a given international market cannot deliver. Establishing this unique position may call for sophisticated branding, promotional, distribution, and segmentation strategy as well as depth and breadth of product offerings. Uniqueness implies that Brand Canada is distinct from other national brands in a given international food market; thus, Canada should look to tailoring its uniqueness according to the competitive environment.

In conclusion, Canada's opportunities to improve its position in international agri-food markets may rest on its ability to capitalize on its image as much as on using the image to build on the success of its competitors. For Canada, the uniqueness could reside in a

stronger projection of its clean and pure environmental image into its performance in the food industry. However, a truly differentiated position in the food system calls for the enhancement of other features of Canada's image as well.

#### **5.4. LIMITATIONS OF THE STUDY AND DIRECTIONS FOR FUTURE RESEARCH**

The limitations of the research stem from the fact the data were not collected specifically to test the hypotheses laid out in this thesis. As a result, the set of indicators of country image employed in the study and drawn from the country-of-origin literature may not be sufficient to explain similarity judgments at the country level. Although it was proposed in Section 2.3.5 that several characteristics of a country may constitute a basis for pack membership, the similarity structure of the country attributes considered in this research is limited to the indicators of the construct measuring the country-of-origin image. Since some of the country characteristics overlap with the indicators of the country image construct, country image can be considered a sub-set of country-level characteristics that have an impact on perceived similarities at the food system level. Thus, it will be the task of future research to incorporate a wider range of characteristics at the country level (e.g., political, cultural, and historical ties) that might better explain the transfer of attributes at the food system level. Nevertheless, this limitation seems to have had a negligible impact, if any, on the pack membership model in accounting for variability in the data considered in the study. Moreover, the overall model's fit to the data suggests that the sets of variables considered in the research are strong indicators of the constructs employed in the study to explain the relationships implied by the tested hypotheses.

Another limitation of the study is due to the small set of Canadian competitors surveyed in this research. While the data collected by AAFC provides the agency with the information necessary to assess Canada's position vis-à-vis its two closest competitors in each of the surveyed markets, the design places restrictions on the validation of individual research findings within the survey. For example, the inclusion of France among countries surveyed in each of the international markets would help to validate and strengthen the conclusion about the impact of uniqueness (Hypothesis #6), which was tested only in Germany. Similarly, having a developing country (e.g., China) among Canada's competitors evaluated in each single market would help to support the findings obtained from the U.S. data based on Mexico – the only developing country considered in the survey. Moreover, with a consistent set of countries (e.g., Australia, France, the U.S., and China) being employed in each single surveyed market, additional hypotheses could be tested. For instance, assuming the measurement invariance of the pack membership across surveyed countries, future research could explore the stability of pack and sub-pack membership assignments in various international settings, from one market to another.

It would also be interesting to test the findings of the study using a slightly different approach often utilized by psychologists. Building on the theoretical and empirical analysis covered in this study, which points to the subset of variables playing the most important role in explaining the pack membership phenomenon, the validity of the research findings could be further confirmed by research using the data obtained by means of direct ratings of similarities. However, the benefits of this alternative approach

might be seriously outweighed by the practical challenges that would accompany the implementation of such a research design. The main problem with a study involving pairwise similarity ratings is the large number of comparisons required to assign similarity judgments (Hutchinson and Farrand, 1982). Furthermore, the data obtained in the form of the proximity matrix would not allow for the use of the multiple techniques implemented in this study.

It is hoped that further research will validate the findings of this research with an extended set of variables at the country level and a larger set of evaluated countries, and also test the notion of pack membership and its contextual impact on industry evaluation in different industries. The main question is whether the categorization structure of countries (i.e., sub-pack assignment) is stable across industries or whether different classification mechanisms are activated depending on the evaluated industry. However, while the extended data may allow for substantiation of the proposed relations and exploration of additional hypotheses, the data used in this study appear to have been adequate to provide a fairly substantial test and confirmation of the role of competitors in assessing Canada's positioning in several major markets.

## 5.5. CONCLUSION

Some researchers suggest that, in the age of globalization, the global marketplace has given rise to global societies. It has been argued that “cultural homogenization . . . will limit the ability of countries to maintain their cultural distinctiveness” (Potter, 2002, p. 6). Consequently, image-building campaigns at the national level seem more critical than ever: “In our globalized world, no state can afford a bad image and a shaky reputation” (van Ham, 2001, p. 2). On the one hand, the core image needs to be constantly enhanced to convey the country’s competitive position in the global economy. On the other hand, it may be just as important to maintain the uniqueness of the country’s image, described by Anholt (2005) as “competitive identity,” in order to stand above other countries, particularly those in the same competitive league.

The study offers a comparison between Canada, a relatively small country with a resource-based economy and positive international country image, and its North American partner, the U.S., a global superpower whose sectors and brands are known all over the world but whose reputation in the world is highly mixed. Though geographical proximity and cultural similarities between Canada and the U.S. were expected to strongly influence the relative homogeneity effect taking place in consumers’ minds, Canada was examined for comparison and categorization effects with other developed countries in terms of the size of its economy (e.g., the Netherlands), its environmental purity (e.g., Australia), or its historical ties (e.g., France).

The results of this study support the notion that countries are grouped into different units and subunits that share common characteristics relevant to the product evaluation

process. As an evaluation factor, belonging to a group, referred to in this dissertation as “sub-pack membership,” was found to affect consumer perception of the industry of a country beyond the influence provided by the COO cue or general country attractiveness. Moreover, the reliance on a country’s scores obtained in a singular evaluation process can be very misleading since, to a large extent, they may reflect attitudes towards members of the whole club.

According to this study, in all tested markets, Canada as a country is cognitively linked with another developed country, and this linkage tends to be reflected in the evaluation of its food industry. Interestingly, in a given market, Canada’s country image is more likely to be associated with the image of its competitor other than the U.S. In Great Britain, Canada is seen as more compatible with the Netherlands than it is with its North American partner. In Japan, Canada is perceptually connected with Australia, whereas in Germany, the association between Canada and France is stronger than that between Canada and the U.S., but only at the country level. Contrary to the hypothesized relationships, Canada’s ties with France at the country level are not mirrored in strong perceived similarities at the industry level.

The findings of this dissertation, obtained using different statistical tools and validated across four international markets, point to the soundness of the theoretical propositions advanced in the dissertation. While the country-of-origin effect was found to be practically and statistically significant in all tested markets, the magnitude of the pack membership effect was consistently larger across all surveyed markets. However, the

contribution of the pack membership cue in proportion to the COO cue in explaining variance in consumers' perception of the quality of the Canadian food system tends to diminish with higher levels of product familiarity. Nevertheless, the impact of familiarity with Canadian products on consumers' evaluation of the quality of the Canadian food system is not sufficiently large to change the relative importance of the COO cue and the pack membership cue. As demonstrated in the case of the French food system, the impact of the pack membership effect can be offset by the strength of a national brand only when the evaluated country is perceived as having a unique position in the industry.

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## **APPENDIX A. SPECIFICATION OF THE CFA MODEL**

The objective of this section is to demonstrate possible sources of improvement in overall fit of the pack membership model described in the main body of this dissertation. Since most of the degrees of freedom are associated with the measurement model, analyses of the linkages among indicators of the investigated constructs are based on confirmatory factor analysis (CFA). The CFA model combines three latent variables underlying the quality of the food systems of three countries (i.e., Canada and its two competitors) and three latent variables related to the country image of each of these countries.

The fit statistics of the CFA model (i.e., the pack membership model without direct causal effects between latent variables) suggest that some changes to the measurement model (e.g., freeing parameters to be estimated), guided by empirical and theoretical rationales, should be considered. However, signs of the model's misspecification vary considerably by country. The fit of the model to the U.S. data is quite good, judging by the high value of the CFI (.98) and NNFI (.98) statistics, the low value of the SRMR (.062), and the acceptable value of the RMSEA (.075) statistics. The model seems to perform almost equally well when applied to the German data (CFI = .95; NNFI = .94; SRMR = .055; RMSEA = .082). The conclusion regarding the model's ability to fit the Great Britain and Japan data sets depends on the fit index. According to the incremental fit indices, CFI (.95/.96) and NNFI (.94/.96), and the SRMR (.064/.055) statistic, the model provides a very good fit to both data sets (i.e., Great Britain/Japan). At the same time, the values of RMSEA (.11 and .11, respectively) exceeds the 0.1 rule of thumb beyond which the fit is regarded as not satisfactory. It is worth noting that the  $\chi^2$ -test is

significant for all countries. However, taking into account the corresponding well known sensitivity of this statistic to a large sample size (Fornell and Larcker, 1981; Bagozzi, 2010), its utility in this case may be questionable.

Modification indices, pinpointing the areas of possible improvement to the fit of the model, reveal large correlations between error terms. According to the indices, the corresponding indicators of a specific aspect of country image and food system across targeted countries share systematic variance besides the variance explained by their underlying factors. For example, the observed correlation between the knowledge of how to produce safe foods possessed by Canada and its competitors (a4k - a2k and a4k - a3k) or between regulatory systems ensuring that food is safe (a4a - a3a and a3a - a2a) seem to be stronger than the correlations between the factors that presumably underlie these attributes (see Table 63). Similarly, unspecified correlations between individual country-level attributes, reflecting similarities in the perception of the Canadian and Australian environments (i4d - i3d) or similarities in the perception of the trustworthiness of Canadians and Americans (i4j - i3j), seem to capture common variances in addition to that attributable to the country image construct. Moreover, in some surveyed markets (i.e., Japan and the U.S.), items within each scale exhibit high correlations. These items seem to share a common theme, such as the level of development of a country manifested in terms of economic factors and technological advancement (i3c - i3b, i4c - i4b, and i2c - i2b). The correlation between items belonging to the same scale can also be explained by the common wording, such as “farmers are concerned about” either food safety or food quality (a2f - a2e).

**Table 63. Modification Indices**

Germany		Great Britain		Japan		USA	
Variables	$\Delta\chi^2$	Variables	$\Delta\chi^2$	Variables	$\Delta\chi^2$	Variables	$\Delta\chi^2$
a3k - a2k	517	i4a - i3a	741	i3c - i3b	602	i2k - i2j	483
a4k - a3k	433	a4a - a3a	735	i3k - i3j	576	i2k - i2i	404
a3e - a2e	391	a4g - a3g	631	i4c - i4b	570	i2j - i2i	298
a4g - a3g	380	a4m - a3m	631	a3b - a3a	493	i4f - i3f	289
a3a - a2a	361	a3m - a2m	626	a2f - a2e	467	i4c - i3c	231
a3f - a2f	349	a4k - a3k	615	i2c - i2b	459	a4k - a3k	191
i4j - i3j	336	i4j - i3j	612	i4d - i3d	426	i4a - i3a	184

Thus, the findings suggest that the strength of the association between, for example, regulatory systems of any two countries may not be fully represented in this model, which treats these variables as one of the indicators of the quality of the respective food systems of the evaluated countries. By the same token, the linkage between the cross-country indicators of country image may be ignored by the model, which assumes independence of measurement errors. However, while the misspecification can be corrected by allowing the correlations between error terms in the individual data set, there is no universally parsimonious solution for the entire body of data.

Although some of the highly correlated measurement errors can be defended theoretically, the specification of correlated error terms “has implications for the identification of CFA models” (Kline, 2005, p.168). Moreover, according to Brown (2006), “as the result of examining modification indices, the researcher might determine that freeing some correlated errors in a CFA solution would improve a ‘borderline’ value of a given fit index. However, in addition to lacking a substantive basis, this practice may introduce other problems, such as biasing other parameters in the model” (p. 124).

Finally, Bagozzi (1983) describes correlated measurement residuals as “fall-back options [that] nearly always detract from the theoretical elegance and empirical interpretability of the study” (p. 450). Consequently, the relationships between measurement errors are treated in this study as unanalyzed associations and, as such, are not specified in the pack membership model. Nevertheless, the pack membership model described in the main text, whose specifications do not include covariance errors, still yields large values of  $R^2$  across surveyed markets, indicating that the linkages of theoretical interest are still fully evident.