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Ph.D.

Business Administration

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A CONTINGENCY FRAMEWORK FOR GLOBAL BRANDING: A MULTI-LEVEL INTERACTION MODEL

By

Burcu Tasoluk

A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Marketing and Supply Chain Management

ABSTRACT

A CONTINGENCY FRAMEWORK FOR GLOBAL BRANDING: A MULTI-LEVEL INTERACTION MODEL

By

Burcu Tasoluk

This dissertation builds and tests a contingency model for global branding and explores the factors which influence the likelihood of global brand ownership. Drawing on the contingency approach from strategic management, this study expands our understanding of both specific dimensions of global brands which appeal to consumers across countries and specific characteristics of consumers across countries who are most receptive to global brands.

Global brands are among the most important intangible assets a company can have. According to the Interbrand/Business Week Study, the financial value of the top 100 global brands exceeds \$1 trillion in 2004. In line with its importance, many researchers have investigated different aspects of global branding. Still, the literature lacks a framework that analyzes global brand perceptions of consumers within the broader development context of these perceptions.

This thesis develops a contingency model where the relationship between the global brand perceptions of consumers and the likelihood of global brand ownership is hypothesized to be dependent on consumer characteristics. Consumer characteristics include both demographic (age and income) and psychographic (personal values) variables. Schwartz's value system is used to classify consumers along two bipolar

dimensions: self-enhancement versus self-transcendence and openness to change versus conservation. The national economic development of the countries (GDP per capita) is included as a macro-level variable to explain the variation in the characteristics of global brand-prone consumers across countries. By incorporating both consumer-level and country-level variables into a single model, the interactions between micro and macro units are analyzed. Hierarchical Linear Modeling is employed as the research method to deal with the existence of multiple units of analysis in the same model and to show how variables at one level influence relationships occurring at another. The hypotheses are empirically tested by using data from more than 31,000 consumers across 31 countries.

This study is an in-depth consumer research study with important managerial implications. It will not only reveal how various dimensions of global brands relate to the likelihood of global brand ownership contingent on consumer characteristics, but also will help to identify the consumer characteristics that define consumers most receptive to global brands.

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This dissertation is dedicated to my Mom and Dad, who have always supported me for going after my dreams; and to my brother, who has always brought joy and happiness to my life: I love you all very much.

ACKNOWLEDGEMENTS

I would like to acknowledge the guidance and support of many people who have been with me throughout this long Ph.D. process. My greatest thanks goes to my advisor, Roger Calantone. He has been a patient mentor to me and he was with me in every step of the way. Whenever I got nervous, he knew how to calm me down and make things seem a lot less complicated under a different light. He always pushed me harder though, so that I would exceed my limits. As a researcher, he is always after excellence; as a mentor, he knows how to motivate and encourage; and as a person, he is very understanding and considerate. I learned a lot from him. Tamer Cavusgil also deserves special acknowledgment; he was the reason why I applied to MSU in the first place and his support gave me confidence at the hardest times of this journey. Cornelia Dröge is a very smart and capable researcher; I would like to thank her for the care and attention she showed toward my work, as well as for her sincere efforts to teach. I am grateful to David Griffith for his recommendations of the positioning of my research, as well as for preparing me for my job search and job interviews. I'd also like to thank Regina McNally and Chris White for spending their time providing valuable insight into the best way of presenting my work at job interviews.

I am so grateful to our department secretaries: Kathy Mullins, Kathy Waldie, Sherry Danner, Laurie Fitch, and Cheryl Lundeen. They were so helpful during the most stressful times. They always smile and make you feel good.

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My fellow classmates know very well what it takes to spend such a long time with such challenges in a Ph.D. program. It was fun to be with them and knowing that you would be understood when you complain. Thou shant be alone in tough times ⁽²⁾

I'd like to especially acknowledge and thank my dear friends Nilufer Agirdir, from Istanbul, and Nazan Ugur and Halide Sayar, from Brussels. Their love and support was very important to get me going. Whenever I needed a friend, they were there ready to help me. They taught me that friendships can stay alive even across continents and physical distance is not important if you want to be near your friend. The friends I made here in the U.S. were also very supportive and made these years pass a lot more pleasantly and with more fun than what would have been without them. I am very glad that I met them. They are certainly among the most important rewards that I gained in these four years.

My parents Ayse Tasoluk and Cevdet Tasoluk, and my brother, Berker Tasoluk, to whom this dissertation is dedicated, made me feel their love and support always nearby. I know that they would prefer me to be not so far away, but they respected the path I chose, and once I was on the way, they supported me always. Words cannot express my gratitude towards them.

I am very glad that I undertook this mission. I am very glad that I completed it. It was an experience that taught me so many things, not only academically, but also about life. Thank you to everyone who has helped me achieve this.

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Chapter 1

INTRODUCTION

1.1 Background

Global brands can be defined as brands that consumers can find under the same name in multiple countries; these brands have generally similar and centrally coordinated marketing strategies (Steenkamp et al. 2003; Yip 1992).

The key supply-side trends that are responsible for the rise of global branding are identified by researchers as economies of scale effects, exploitation of experience curves and knowledge transfers, capitalizing on geographic image spillover, seeking new growth opportunities, consolidation and globalization of the retail trade, and decreased time to market in the absence of local modifications (Gregory and Wiechmann 2002; Neff 1999; Yip 1992). The demand-side factors suggested by researchers are the emergence of a global consumer culture and global consumer segments (Dawar and Parker 1994; Hassan and Katsanis 1994; Kapferer 1997; Levitt 1983; Walker 1996), and consumer preference for brands with a global image (Aaker 1991; Kapferer 1997; Shocker et al. 1994; Steenkamp et al. 2003; Yip 1992).

Several scholars suggest that the perception of a brand as global enhances brand equity (Gregory and Wiechmann 2002; Kapferer 1997; Shocker et al. 1994). Indeed, Alden, Steenkamp, and Batra (1999) found that corporations take advantage of imageenhancing effects by positioning brands as "global" in their communications.

1.2 Gaps in Previous Research

The global branding literature is fragmented. Divergent topics have been investigated by researchers in this literature. Main research streams can be summarized as standardization/adaptation of global brands (usually in the broader context of marketing strategy), country of origin and brand origin studies, global brand management strategy and organizational coordination issues, global brand personality studies, cultural influences of global brands, global brand associations, global brand image and positioning strategies, global brand equity measurement issues, corporate social responsibility of global brands, and many case studies investigating individual global branding cases.

A niche, but very important area that has been recently investigated, is to what extent globalness of a brand actually matters and what specific global brand associations consumers value worldwide. Global branding practices undertaken by companies rest on the widely held belief that globalness of a brand signals certain characteristics to consumers. The first empirical research on this topic was presented at MSI's Global Branding Conference in Milan (Batra et al. 2000b). Later, the same researchers published a paper which investigated consumers' perceptions about global brands (Steenkamp et al. 2003), where they tested the effect of perceived brand globalness (PBG) on brand purchase likelihood. Their findings show that PBG is positively associated with both perceived brand quality and brand prestige, and higher perceived quality and prestige are key sources of enhanced consumer value for global brands. The direct effect of perceived brand globalness on brand purchase likelihood was not found significant.

The other empirical study on dimensions of global brands was conducted by Holt, Quelch, and Taylor (2004a; 2004b). Their empirical analyses show that most people prefer one global brand over another because of differences in the brands' global dimensions. They identified the four dimensions of global brands as quality, global status symbol, best-in-class, and social responsibility.

Lastly, Johansson and Ronkainen (2005) tested the effect of globalness of a brand on brand esteem and found that a brand's globality is associated with greater esteem after controlling for perceived quality and familiarity. They concluded that the globality of a brand had a definite role in building sustainable competitive advantage.

These pioneer studies identify a number of global brand associations and imply that the globalness of a brand matters; however, they do not state for what type of consumers. The literature lacks a framework that analyzes global brand perceptions of consumers within the broader development context of these perceptions. Furthermore, although researchers have suggested that consumers may choose global brands because they want to be part of a special culture, global consumer culture (Alden et al. 1999), the argument that there are consumers who buy global brands consistently has not been empirically tested, either.

1.3 Purpose of the Study

This study uses recent global branding studies as a starting point and introduces consumer-level and country-level contingencies. The main premise is that the effect of different global brand associations on the likelihood of global brand ownership will be

different for different types of consumers. Furthermore, the assertion that there is a specific segment of consumers that is most prone to global brands will be empirically tested. The robustness of this "global brand-prone" consumer segment across countries will also be investigated.

1.4 Methodological Basis for Answering Research Objectives

The model proposed in this study includes variables that belong to multiple units of analysis: global brand perceptions of consumers and consumer characteristics are the level-1 units; these are nested within countries, the level-2 units.

Two basic statistical assumptions, independence of observations and homoscedasticity, are violated when different units of analysis are combined in the same model. Hierarchical Linear Modeling (HLM), also known as multilevel modeling, was developed to deal with such hierarchical (nested) data. Each of the levels in the data structure has its own sub-model, which indicates the relationships among variables within a given level, and specifies how variables at one level influence relations occurring at another (Raudenbush and Bryk 2002).

Although the nested data structure is quite common in marketing and international business, HLM is not a familiar method of analysis in these disciplines. Scholars from sociology, biometrics, econometrics, statistics, and education research historically have employed and contributed to the development of this technique. A more specific version of HLM, Hierarchical Generalized Linear Modeling (HGLM), will be utilized in this

study and both the theoretical foundations and the practical application of this method will be presented.

1.5 Research Questions Addressed

Based on the objectives set forth, the following three research questions will be investigated:

1. Which dimensions of global brands are more effective for what type of consumers?

2. Can we identify a "global brand-prone" consumer segment? If we can, what are the demographic and psychographic characteristics of these consumers?

3. Is this consumer segment robust across countries?

1.6 Summary and Overview of Remaining Chapters

Chapter 1 provides an overview of this study. Background information about global branding and a review of gaps in the literature were presented. The research objectives of the study, a brief overview of the method used, and specific research questions addressed were also provided. Chapter 2 presents a review of the literature and provides the theoretical rationale for the development of hypotheses relevant to the research objectives. This chapter also summarizes previous research limitations, discusses gaps in the literature, and presents the research hypotheses to be tested. Chapter 3 gives information on the theoretical background of the method used in this study.

Chapter 4 presents empirical results. Lastly, Chapter 5 presents conclusions and contributions of the study. It also discusses the implications of the study results for managers. Future research directions and limitations of the study are also presented.

Chapter 2

REVIEW OF LITERATURE AND HYPOTHESIS DEVELOPMENT

2.1 Overview of Global Branding Research

Global brands are among the most important intangible assets a company can have. According to the Interbrand/BusinessWeek Study (2004), the financial value of the top 100 global brands exceeds \$1 trillion. In line with its importance, many researchers have investigated different aspects of global branding.

Of these, the standardization/adaptation research is probably the oldest. The majority of the studies in this stream investigated promotion strategies of global brands, e.g., international advertising. Agrawal (1995) traced the beginning of this debate to the 1920s, when Goodyear's manager for advertising, David L. Brown, and Bausch & Lomb's manager of sales promotion, Carl F. Propson, took two opposite sides. Brown (1923) argued for standardization because he viewed humans as possessing common attributes, whereas Propson (1923) insisted on the need for adaptation to appeal to divergent local markets. The debate that concerned practitioners at first then appealed to scholars. The late 1950s saw the first academic engagement on the issue by Pratt (1956). Since then, international marketing strategy standardization has been the central focus of both academics and practitioners (Agrawal 1995). As acknowledged also by a recent literature review on the standardization/adaptation literature by Ryans, Griffith, and White (2003), a vast amount of studies has been conducted in the field (e.g., Boddewyn

et al. 1986; Calantone et al. 2004; Calantone et al. 2006; Cavusgil and Zou 1994; Jain 1989; Kotler 1986; Levitt 1983; Samiee and Roth 1992; Wills et al. 1991; Wind 1986; Zou and Cavusgil 2002).

The central research question in this line of research has been whether a standardized or an adapted international marketing strategy is more effective. Agrawal (1995) identified three schools of thought: standardization, adaptation, and the contingency perspective. Proponents of the standardization school of thought (Fatt 1967; Levitt 1983) stressed the benefits of standardization, mainly stemming from cost reductions. Their assumption was that consumers around the world were not very different and universal attributes appealing to all consumers could be found. This school of thought argued that cost reductions would outweigh revenue loss, if any. Proponents of the adaptation school of thought (Britt 1974; Nielsen 1964; Ricks and Arpan 1974) argued that inter-country differences were too big to ignore and applying the same marketing strategy worldwide would result in revenue loss, which would far outweigh cost reductions. As the debate went on unresolved, a third group took a moderate approach and acknowledged that the evaluation of possible factors that might affect the success of a strategy in a particular country would be necessary when deciding on the degree of standardization/adaptation (Kotler 1986; Walters 1986). Today, even after a vast amount of studies has been conducted on the same issue, the debate has still not been resolved (Ryans et al. 2003).

The second oldest main stream of research addresses the effects of country of origin (the country with which a firm is associated) and country of manufacture (the location of manufacture or assembly of a product) on consumer attitude and behavior

(Ashill and Sinha 2004; Batra et al. 2000a; Bilkey and Nes 1982; Han 1989; Johansson et al. 1985; Kaynak and Cavusgil 1983; Samiee 1994; Samiee et al. 2005; Thakor 1996; Thakor and Lavack 2003; Tse and Gorn 1993; Tse and Lee 1993). The earlier studies rarely make a distinction between country of origin and country of manufacture. The general name used in the literature is "country of origin (CO)" and CO effects are defined as "intangible barriers-to-entry in the form of negative consumer bias toward products of foreign origin" (Wang and Lamb 1983, p. 71). Although these studies have divergent findings (Al-Sulaiti and Baker 1998), the great majority of country of origin studies found that in general, consumers display a preference for products made in some countries more than others (Samiee 1994).

Johansson et al. (1985) concluded that there was little evidence of stereotyping based on country of origin and suggested that the impact of country of origin on product evaluations might be substantially more complex than had been previously assumed. Later studies evolved in complexity. Han (1989; 1990) showed that familiarity of consumers with a country's products was an important moderator. When consumers are not familiar with a country's products, country image serves as a halo from which consumers infer a brand's product attributes, which in turn impact their attitude toward the brand. On the contrary, when consumers are familiar with a country's products, country image summarizes consumers' beliefs about product attributes and directly affects their attitude toward the brand. This presents an evolutionary perspective; consumers form the image of the country through experience with their products.

As global companies started to use off-shore outsourcing and shift their factories overseas to take advantage of lower costs, the distinction between country of origin and

country of manufacture is stated more clearly in the literature and another construct appeared: brand origin. The country a brand is associated with, or the perceived headquarters of the company of the brand, determines brand origin. This conceptualization is independent of country of manufacture (Samiee et al. 2005; Thakor and Lavack 2003).

The first studies done on this topic found sourcing country stimuli to have greater effects than brand name on consumer attitudes toward bi-national products (Han and Terpstra 1988). In one study, Tse and Gorn (1993) concluded a well-known global brand–Sony, in their experiment–could not override the country of origin effect. Subjects perceived electronic products made in Japan to be significantly higher in quality than those made in Indonesia. The authors' suggestion to managers was to develop new products made in a favorable country of origin. However, in another study, Tse and Lee (1993) decomposed the negative country image into component and assembly origins, and considered effects of both global branding and product experience. They obtained a contradictory result this time; a strong positive brand was found to override negative assembly origin effects. After the product experience, the negative component origin effect was also gone.

A recent study also showed that the brand effect might outweigh the country of origin effect. Ashill and Sinha (2004) showed that the effect of brand equity was three times more important than country of origin effects on consumers' purchase intentions. Their suggestion to marketing managers was to choose a country of manufacture for cost efficiencies regardless of any associations consumers may have with that country.

Yet in another recent study, Samiee et al. (2005) questioned the basic assumption of all these studies, i.e., that consumers actually know brand origins. They claimed that previous research might have overstated the effect of brand origin on consumer attitude and behavior since the studies were mostly experimental designs in which the brand origins of the hypothetical brands were manipulated. They used actual brands in a national survey. Their argument was that if brand origin played a salient role in consumers' everyday decision making, then consumers would know the brand origins reasonably accurately. The opposite result they obtained indicated that this was not the case.

Looking at other widely researched topics on global branding, one notices quite a variety: global brand management strategy and organizational coordination issues (Aaker and Joachimsthaler 1999; Das 1993; Farquhar 2005; Gregory and Wiechmann 2002; Hamel and Prahalad 1985; Quelch 1999; Quelch and Hoff 1986; van Gelder 2004; van Gelder 2003; van Gelder 2005), global brand personality studies (Aaker 1997; Sung and Tinkham 2005), cultural influences of global brands (Klein 1999; Smart 1999; Thompson and Arsel 2004), global brand associations (Batra et al. 2000b; Holt et al. 2004a; Holt et al. 2004b; Steenkamp et al. 2003), global brand image and positioning strategies (Alden et al. 1999; Hsieh 2002; Hsieh et al. 2004; Roth 1992; Roth 1995a; Roth 1995b), global brand equity measurement issues (Aaker 1996; Hsieh 2004), corporate social responsibility of global brands (Macrae et al. 2003; Werther and Chandler 2005), global marketing universals and global consumer segments (Dawar and Parker 1994; Hassan and Katsanis 1994; Holt et al. 2004a; Holt et al. 2004b; Levitt 1983), and many case studies investigating individual global branding cases (Abratt and Motlana 2002; Buri

and Findlay 1996; Crippen et al. 1995; Kanter and Dretler 1998; Kapferer 2002; Kern et al. 1990; Kish et al. 2001; Raman 2003; Rozin and Magnusson 2003; Strong 1987; Wright and Nancarrow 1999).

Although all these studies address a variety of global branding issues, the common effort is to understand what works best for global brands under what circumstances. In order to be able to give an answer to this question, it is very important that world consumers' attitudes and behaviors toward global brands are known. However, the main limitation of conducting such studies is the difficulty in obtaining data from consumers. As a result, with a few exceptions (e.g., Holt et al. 2004a; Holt et al. 2004b; Steenkamp et al. 2003), either experimental designs with student subjects were used, or global brand managers were surveyed and asked information about their consumers. Even when actual consumers were used, the number of countries included in the studies was naturally limited.

A niche, but very important area, is the value in the "globalness" and the global brand associations consumers value worldwide. The idea that "globalness" of a brand may be a value-added for consumers was suggested by researchers before (Gregory and Wiechmann 2002; Kapferer 1997; Shocker et al. 1994). However, this was empirically tested only recently, in the 2000s (Batra et al. 2000b; Holt et al. 2004a; Holt et al. 2004b; Johansson and Ronkainen 2005; Steenkamp et al. 2003).

Steenkamp et al. (2003) tested the effect of perceived brand globalness (PBG) on brand purchase likelihood in two countries (United States and South Korea) across four product categories. Their findings show that PBG is positively associated with both perceived brand quality and brand prestige; higher perceived quality and prestige are key

sources of enhanced consumer value for global brands. The strongest effect on PBG, however, is through perceived quality. The direct effect of perceived brand globalness on brand purchase likelihood (what they called "belongingness pathway") was not found significant.

Johansson and Ronkainen (2005) tested the effect of globalness of a brand on brand esteem. They used data from eight countries: France, Germany, Italy, Spain, Sweden, UK, USA, and Japan. Their results show that the reach of a brand is associated with higher esteem when brand familiarity is controlled. They concluded that the globality of a brand has a definite role in building sustainable competitive advantage. "Esteem" is a major construct coming from Landor Associates' global surveys of brand strength.¹ The exact items were not provided in the study; however, it was reported to be based on multiple items, including the question, "In what personal regard do you hold this brand? By 'personal regard' we mean how highly you think and feel about the brand."²

However, one caveat concerning their research is that the data used for esteem and familiarity variables were only the rankings, not the actual scores. This casts some doubt on the validity of their results. Furthermore, their operationalization of the globalness of a brand was questionable, as will be discussed next.

There are different conceptualizations of what "global brands" means. Although there is a shortage of formal definitions of "global brands" in the literature (Steenkamp et

¹ Landor Associates is a brand consultancy affiliated with the Young & Rubicam advertising agency. The survey data is used to build their proprietary Brand Asset Valuator (BAV®) model.

² The final score for brand esteem was derived from a factor analysis and a weighing together of the multiple indicators. The level of familiarity was, likewise, derived from several items, one of the items being, "What is your overall awareness and understanding of what kind of product this brand represents?" The perceived quality score was derived from a rating of the degree to which the respondent associates 'high quality' with the brand.

al. 2003), global brands can be defined as brands that consumers can find under the same name in multiple countries, with generally similar and centrally coordinated marketing strategies (Steenkamp et al. 2003; Yip 1992). Consultancy companies' definitions are more specific. ACNielsen (2001) classifies brands as global if they are present in the four major regions of the world–North America, Latin America, Europe/Middle East/Africa, and Asia–with at least 5 percent of sales coming from outside the home region, and total revenues of at least \$1 billion. Interbrand (2004) has slightly different criteria; a brand should derive about a third of its earnings from outside its home country and have a value greater than \$1 billion to qualify for The 100 Top Global Brands list published by Interbrand and NewsWeek.

Global branding research has borrowed from different definitions when operationalizing global brands. For example, Steenkamp et al. (2003, p. 58) stated that "consumers can form the perception that a brand is 'global' if they come to believe that the brand is also available in other countries through media coverage, word of mouth, or travel and/or if they see brand communications stressing 'globalness' through associations with global consumer culture (GCC) symbols." They operationalized perceived brand globalness (PBG) by measuring the degree to which consumers thought the same brand was marketed in countries other than their own, and used the following items: "To me, this is a global brand," "I do think consumers overseas buy this brand," and "This brand is sold all over the world" (Steenkamp et al. 2003, p. 64). Johansson and Ronkainen (2005, p. 340) defined global as "the multi-market reach of products that are perceived as the same brand worldwide both by consumers and internal constituents"; however, their operationalization included only 8 countries, not "the world." They

analyzed data from 8 countries, with approximately 150 global and local brands coming from each. They calculated "reach" as a measure of globality in these 8 countries; therefore, if a brand was listed in one country (i.e., included in the Top 150 list of Landor), it was assigned the value "1." If it was listed in all eight countries, it was assigned the value "8." The other pioneer study in the field done by Holt et al. (2004a; 2004b) did not use a separate measure of globalness, but analyzed only global brands, all but one of which came from Interbrand's Top 100 list.

The most recent study on this subject (Holt et al. 2004a; Holt et al. 2004b) conducted an exploratory qualitative research in 41 countries, followed by a survey with 1,800 people in 12 countries. Seventeen global brands were evaluated across 5 dimensions: quality signal (international success), global myth (global status symbol), social responsibility, best-in-class, and American values.³ Their empirical analyses show that most people prefer one global brand over another because of differences in the brands' global dimensions. They identified the four dimensions of global brands as quality, global status symbol, best-in-class, and social responsibility (Holt et al. 2004b). This study is especially interesting because the quotations they report from consumers worldwide are very rich. Some examples include (Holt et al. 2004b, p.186-189):

"Global brands must be very good in order to sustain a global presence. Some local brands are good too, but they don't have the ambition to venture into other countries. They are not as successful." (Hong Kong)

"The more people who buy a brand, ... the better quality it is." (Russia)

³ The authors use different construct names in their two papers; the alternated names are provided in parentheses.

"When you think of an international brand, you already assume it has better quality." (United Kingdom)

"They (global brands) are very dynamic, always upgrading themselves." (India)

"They (global brands) are more exciting because they come up with new products all the time, whereas you know what you will get with the local ones." (Australia) As is evident from the examples above, global brands symbolize "quality" and "innovativeness."⁴

They also convey "belongingness," e.g., consumers may choose global brands because they feel themselves being part of a special group connected via the brand:

"Global brands make you feel part of something bigger and give you a sense of belonging." (New Zealand)

Global brands also give the consumers the feeling of "prestige"; consumers may feel themselves in a higher class when they use global brands:

"If you buy something because Americans use it, you feel at their same level."

(Mexico)

"You appear to be of the same class when you use global brands." (Nigeria)

Another key factor consumers consider when buying global brands is

"genuineness," e.g., consumers may think that the brand is from a country that has a particular expertise in the product category, and that's why they may buy them:

"If it is electronics, I will go for Japanese products because they are the best, but for clothing I prefer American labels and British made." (Nigeria)

⁴ Both Holt et al. (2004b) and Steenkamp et al. (2003) treated quality and innovativeness as if they were the same association. This will be the first study where the two are acknowledged to be distinct.

"German cars are very reliable. They are produced by employing the highest technology." (Turkey)

Consumers expect global brands to act in a socially responsible manner, thus "social responsibility" is another key dimension of global brands on which consumers base their purchasing decisions:

"McDonald's pays back locally, but it is their duty. They are making so much money, they should be giving back." (Australia)

The results of all these studies identify the global brand associations. A list includes: quality, innovativeness, belongingness, prestige, genuineness, and social responsibility (Batra et al. 2000b; Holt et al. 2004a; Holt et al. 2004b; Steenkamp et al. 2003). Even though the names of the associations differ between studies, the distinction is semantic more than conceptual. For example, brand prestige in one study becomes global status symbol in another; what is called perceived brand genuineness in this study is called best-in-class in another, etc.

In sum, research so far has shown that consumers attribute to global brands certain associations. However, no international study has been conducted yet on which attributes are more effective for which types of consumers.

The increasing interconnectedness of local cultures and the emergence of a world culture (Hannerz 1990), theories about global cultural flow (Appadurai 1990), the wide-spread influence of media, and certain consumers (e.g., teenagers) displaying similar consumption signs like jeans or sneakers led the researchers to the idea that a global consumer culture is emerging (Alden et al. 1999). Alden, Steenkamp, and Batra (1999, p.

76) state that "From the semiotics perspective, it can be argued that certain consumers (e.g., elite, post-World War II [WW II] consumers, teens) will desire consumption experiences and objects that they consider 'signs' of these scripts (of imagined lives) in order to act out imagined or real participation in the more cosmopolitan global consumer culture communicated by the media." Global brands are argued to symbolize this global consumer culture (Batra et al. 2000b).

However, it has not been empirically investigated whether there are, in fact, specific consumers who are global brand-prone, that is, consumers who systematically buy global brands, or whether such a segment of consumers is robust across countries. These questions will be empirically tested in this study by using data from more than 31,000 consumers across 31 countries. The model is shown in Figure 2.1.





2.2 Theoretical Foundation and Hypothesis Development

2.2.1 Associative Network Memory Model

A brand can be defined as "a name, term, sign, symbol, or design, or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors" (Kotler 1991, p. 442). A broad literature has investigated the effects of brands on consumer behavior and marketing program effectiveness (for a review, see Hoeffler and Keller 2003; Yoo et al. 2000). Research so far reveals that there are many advantages to creating a strong brand, where brand strength may reflect both macro-level brand targets such as market leadership or market share position, and micro-level targets such as consumer familiarity, consumer knowledge, preferences, or loyalty (Keller 2002).

Brand equity can be defined as the differential effect that brand knowledge has on consumer or consumer response to the marketing of a brand (Keller 2002). The associative network memory model can be used to explain how brand associations influence consumer responses toward a brand (Keller 1993). The associative network memory model (see Anderson 1983; Srull and Wyer 1989) views knowledge as a set of nodes and links. Nodes are stored information connected by links, which vary in strength. While a spreading activation process from node to node determines the extent of retrieval in memory (Collins and Loftus 1975; Raaijmakers and Shiffrin 1981; Ratcliff and McKoon 1988), it is the strength of the association between the activated node and all linked nodes that determines the extent of the spreading activation. In this context, brand associations are viewed as the informational nodes that are linked to the brand node in memory and contain the meaning of the brand for consumers (Keller 1993).

The global brand associations identified by previous research, namely quality, innovativeness, belongingness, prestige, genuineness, and social responsibility are all hypothesized to be positively related to the likelihood of global brand ownership (GBO). Perceived brand globalness is also included in the model as a separate variable to test both its direct effect on the likelihood of GBO, and its interaction with other global brand associations. More formally, the hypotheses are:

H₁: Perceived brand quality is positively related to the likelihood of GBO.
H₂: Perceived brand innovativeness is positively related to the likelihood of GBO.
H₃: Perceived brand belongingness is positively related to the likelihood of GBO.
H₄: Perceived brand prestige is positively related to the likelihood of GBO.
H₅: Perceived brand genuineness is positively related to the likelihood of GBO.
H₆: Perceived brand social responsibility is positively related to the likelihood of GBO.

H₇: Perceived brand globalness is positively related to the likelihood of GBO.
 H₈: Perceived brand globalness strengthens the effects of all other perceived brand associations on the likelihood of GBO.

However, not all the associations can be expected to have the same effect on the likelihood of GBO for all types of consumers. The contingency approach will thus be introduced in the next section and it will be hypothesized that the relationship between global brand perceptions of consumers and the likelihood of GBO is dependent on consumer characteristics.

2.2.2 Contingency View

Contingency approaches are positioned within management as mid-range theories between the two extreme views which state either that management is a science where universal principles and laws can be found, or that it is an art where each case is unique and each situation must be analyzed separately. Contingency theories stand in between, and state that the appropriateness of different strategies depends on various factors (Zeithaml et al. 1988). Such theories stress: "It depends."

This thesis rests on the contingency view, borrowed from the strategic management literature. Consumer-level contingencies included in the model consist of both demographic (age and income) and psychographic (personal values) variables. Schwartz's values inventory is used to classify consumers along two bipolar dimensions: self-enhancement versus self-transcendence and openness to change versus conservation.

2.2.3 Consumer Demographics

Several researchers emphasized the importance of using demographics variables to classify consumers (Gatignon and Robertson 1985; Gupta and Chintagunta 1994; Zeithaml 1985). Past research suggests that age and income levels of consumers may influence consumer behaviour (Green and Cunningham 1975; Holbrook and Schindler 1994; Zeithaml 1985).

For example, Zeithaml (1985) finds that older shoppers plan more for shopping than younger consumers, tend to use information more, and economize more. Shopping time, number of supermarkets visited weekly, and number of weekly shopping trips are all higher for older consumers. Older consumers see shopping as more important than do
younger consumers. These findings suggest that older consumers may be more selective and thus more sensitive to the existence or lack of existence of brand attributes than younger consumers. Respectively, the effects of quality, prestige, and genuineness associations of global brands on purchasing decisions can be expected to be stronger for older consumers than younger consumers. Therefore, it is hypothesized that:

*H*₉: The effect of perceived brand quality on the likelihood of GBO is stronger for older consumers than younger consumers.

 H_{10} : The effect of perceived brand prestige on the likelihood of GBO is stronger for older consumers than younger consumers.

 H_{11} : The effect of perceived brand genuineness on the likelihood of GBO is stronger for older consumers than younger consumers.

According to Kohlberg's (1981) cognitive moral development theory, our cognition, emotion, and judgment change as we move through stages of moral development. Terpstra et al. (1993) have also argued that people tend to become more ethical as they grow older. It is suggested that as people age, they tend to become less concerned with wealth and more interested in personal growth (Singhapakdi et al. 2001). Thus, it can be hypothesized that older consumers are more sensitive to the existence of social responsibility than younger consumers and the existence or lack of existence of this attribute will have a higher impact on older consumers' purchasing decisions than it will have on younger consumers' purchasing decisions. Thus, it is hypothesized that:

 H_{12} : The effect of perceived brand social responsibility on the likelihood of GBO is stronger for older consumers than younger consumers.

Studies on new product adoption and consumer innovativeness suggest that younger consumers are more open to innovative products. Steenkamp et al. (1999) show a strong negative association between age and consumer innovativeness. In an empirical study, Im et al. (2003) found that consumers who are younger are more likely to adopt new products than consumers who are older. Previously identified relationships between younger age and innovativeness-friendly consumer behavior suggest that the effect of perceived brand innovativeness on the likelihood of GBO may be higher for younger consumers than for older consumers. Therefore, it is hypothesized that:

 H_{13} : The effect of perceived brand innovativeness on the likelihood of GBO is stronger for younger consumers than older consumers.

In a cross-cultural empirical study of consumer tendencies, Keillor et al. (2001) found that older consumers are more likely to have a higher sense of national identity and to be more ethnocentric than younger consumers. They concluded that, regardless of culture and national background, younger consumers might indeed be more similar and have less marketplace prejudice than older consumers. They argued as these consumers age and older consumers drop out of the market, the existence of a globalized consumer might become a reality.

Global media is often held responsible for this trend. Studies on consumerism and young people suggest that global media is influential in promoting particular brand images, and through encouraging brand identity, it provides young people with a common language among their peers (Anderson and Miles 1999). Global advertising is one way through which this influence occurs. Lifestyle advertising, e.g., associating a pair of sneakers with an adventurous lifestyle to make the consumer identify himself with

the product's personality, and emotional branding are among the best practices in branding. These practices are used by global brands, which can be seen as successful actors of branding. Thus, one can expect this influence to become even stronger for global brands. Anderson and Miles (1999) suggest that the television campaigns emphasizing the values of individuality and freedom, like Reebok and Nike's advertising campaigns "Let UBU" and "Just Do It," in fact appeal to young people by satisfying their needs for conformity and their desire to feel part of a group. Therefore, it is hypothesized that:

 H_{14} : The effect of perceived brand belongingness on the likelihood of GBO is stronger for younger consumers than older consumers.

Indeed, global brands were reported to provide an added-value to young people such as confidence. Anderson and Miles (1999, p. 109) report quotations from a qualitative research study funded by the Economic and Social Research Council (ESRC) conducted in Yorkshire and Strathclyde, UK:

"Danny: 'Yeah, brands like Levi's give you confidence and that. If you like what you're wearing and if you've spent a lot of money on it like, it gives you a lot of confidence... I don't know. Like I'd buy stuff like that bottle of Jack Daniels. I wouldn't drink it, I'd just have it in my bedroom. Just because I like it. I like how it looks and that. And it makes me happy."

Cote and Allahar (1996) criticize global media in selling young people an element of identity they taught them to crave. The argument is that standardizing young people's consuming habits is seen by the global media as an allowance to getting more advertising income or increasing the appeal of their youth-oriented programs. Standardization of the

media images young people consume is thought to be instrumental for that reason. Their argument is open to debate; however, the importance of the media, and by implication the idealized images of which global brands are part, is straightforward. "The media play a key role as an arbiter of consumption, in a young person's life during which they are struggling to find a focus" (Anderson and Miles 1999, p. 110). So do global brands, it is suggested. Therefore, it is hypothesized that not only the globalness association of global brands has a stronger effect on the likelihood of GBO for younger consumers than for older consumers (i.e., a moderator role of age on the relationship between perceived brand globalness and the likelihood of GBO), but also younger consumers are more likely to buy global brands in general (i.e., a direct effect of age on the likelihood of GBO).

 H_{15} : The effect of perceived brand globalness on the likelihood of GBO is stronger for younger consumers than older consumers.

 H_{16} : Age is negatively related to the likelihood of GBO.

Cote and Allahar (1996) argue that consumption ethos is poured out upon young people by the mass media. "Since they are bombarded with tantalizing images of the 'good life,' it is not surprising that the young are dispirited by the reality of their poor prospects" (Cote and Allahar 1996, p. 148). The gap between the idealized life and the actual life is expected to be even wider in less-developed countries than in moredeveloped ones. Thus, the differences between younger and older people in terms of their behavior towards global brands may be argued to be wider as well. This suggests that the marginal effect of age on the likelihood of global brand ownership is higher in lessdeveloped countries than in more-developed countries. Thus, ceteris paribus, the negative

effect of age on the likelihood of GBO can be expected to be stronger in less-developed countries than in more-developed countries. Therefore, it is hypothesized that:

 H_{17} : The negative effect of age on the likelihood of GBO is stronger in lessdeveloped countries than in more-developed countries.

Classification of consumers based on their income categories rests on the assumption that more income results in more disposable income and this leads consumption away from subsistence products toward material goods. This also suggests that as consumer income increases, consumers may expect more from their purchases and be more sensitive to additional product attributes. Zeithaml (1985) indeed shows that income affects the amount of time spent shopping, the number of supermarkets visited weekly, the extent of planning, the amount of purchase, and the importance of shopping. Higher income consumers plan less and they spend more time shopping.

Gupta and Chintagunta (1994) find that income and household size significantly affect the segment membership probabilities and lower income consumers tend to be price and promotion sensitive. Granzin (1981), for example, suggests that stores which serve younger shoppers with larger households and lower incomes should stock a wide selection and large quantities of generic products. Im et al. (2003) found that higher income consumers are more likely to adopt new products than lower income consumers.

Related with the more disposable income argument above, higher income consumers can also be expected to want more from their products, be more willing to pay premiums for products with many attributes, and be more sensitive to the existence of these attributes. Thus, it can be argued that higher income consumers are more sensitive to the existence of global brand associations when making their purchasing decisions than

lower income consumers (i.e., income positively moderates the relationships between global brand associations and the likelihood of GBO).

 H_{18} : The effect of perceived brand quality on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

 H_{19} : The effect of perceived brand innovativeness on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

 H_{20} : The effect of perceived brand belongingness on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

 H_{21} : The effect of perceived brand prestige on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

 H_{22} : The effect of perceived brand genuineness on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

 H_{23} : The effect of perceived brand social responsibility on the likelihood of GBO is stronger for higher income consumers than lower income consumers.

Keillor et al. (2001) argued that as consumers' income increase, they tend to consume a wide range of products, thus their participation in the global marketplace is more likely than that of lower income consumers. They found that higher income consumers have a weaker sense of national identity than lower income consumers and they suggested that higher levels of income might be associated with a global consumer, a consumer who is similar across countries in terms of their psychological tendencies in the global marketplace.

Other studies investigating the relationship between income and consumer behavior found that higher income consumers hold relatively more favorable attitudes toward and are more likely to accept non-local products than do lower income consumers

(Bilkey and Nes 1982; Hyllegard et al. 2005; Schooler 1971; Wall et al. 1991), suggesting a more positive attitude toward global brands.

Another factor that may be argued as important is ability; higher income consumers may be more able to afford the price premiums global brands command.

Therefore, it is hypothesized that not only the globalness association of global brands has a stronger effect on the likelihood of GBO for higher income consumers than for lower income consumers (i.e., a moderating effect of income on the relationship between perceived brand globalness and the likelihood of GBO), but also higher income consumers are more likely to buy global brands in general (i.e., a positive direct effect of income on the likelihood of GBO). Therefore, it is hypothesized that:

 H_{24} : The effect of perceived brand globalness on the likelihood of GBO is stronger for higher income consumers than lower income consumers. H_{25} : Income is positively related to the likelihood of GBO.

In developing countries, imported brands are preferred to national goods (Usunier 2000). Batra et al. (2000a) showed that developing country consumers who had a greater admiration for lifestyles in economically developed countries had a stronger preference towards non-local, especially western, brands than other consumers who did not have such an admiration. Therefore, we can expect that in less-developed countries, the marginal effect of income on the likelihood of GBO will be higher than in more-developed countries. Thus, the positive effect of income on the likelihood of GBO can be expected to be stronger in less-developed countries than in more-developed countries. Therefore, it is hypothesized that:

 H_{26} : The positive effect of income on the likelihood of GBO is stronger in lessdeveloped countries than in more-developed countries.

2.2.4 Consumer Psychographics: Personal Values Research and Schwartz's Values Theory

Psychographics examine consumer motivations when purchasing products. Rokeach (1973, p. 5) defines personal value as an "enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence." Values serve as guiding principles in everyday life (Rokeach 1973). They are abstract social cognitions and they provide a foundation for both attitudes and behaviors (Homer and Kahle 1988). While demographics provide a basic means of categorizing consumers, psychographic variables such as values can also be used to assess the similarities between consumers (Kahle et al. 2000). Indeed, research shows that values can be illuminating to explain why consumers purchase certain products (Rose and Shoham 2000) and can be used as a basis for consumer segmentation.

The centrality of the value concept is probably proclaimed best by Rokeach (1973, p. 3): "The value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behavior." Personal values have been shown to be the underlying determinant of consumer attitudes and consumption behavior (Homer and Kahle 1988; Scott and Lamont 1977; Vinson et al. 1977). Allen (2001) investigates the impact of personal values on product preferences in a recent study and finds that values influence product preference both directly and indirectly via prioritizing the importance of product attributes.

Schwartz (1992) has focused on the search for a fundamental set of basic human values. Through an extensive series of studies across more than 40 countries, he constructed a values inventory representing the values that are universally important and identified 10 general value types (Schwartz and Sagiv 1995). These values are power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security (see Table 2.1). He developed a circumplex model by arranging these 10 values in a two-dimensional circular structure oriented by two axes: (1) selfenhancement versus self-transcendence and (2) openness to change versus conservation (see Figure 2.2). The first dimension indicates the degree to which values are selforiented (hedonism, power, achievement) versus other-oriented (benevolence, universalism). The second dimension shows values that emphasize change (stimulation, self-direction) versus preservation of the status quo (conformity, tradition, security) (Burroughs and Rindfleisch 2002). Complementary values stand next to each other and competing values stand opposite (e.g., 180 degrees) from each other. Value conflicts happen when individuals' value systems include competing values, which in turn causes psychological tension. "The pursuit of each type of value [has] psychological, practical, and social consequences that may conflict or may be compatible with the pursuit of other value types" (Schwartz 1994, p. 23).

Table 2.1 – Schwartz's 10 Value Types

Power: Social status and prestige, control or dominance over people and resources.
 Achievement: Personal success through demonstrating competence according to social standards.

3. Hedonism: Pleasure and sensuous gratification for oneself.

4. Stimulation: Excitement, novelty and challenge in life.

5. Self-Direction: Independent thought and action-choosing, creating, exploring.

6. Universalism: Understanding, appreciation, tolerance and protection for the welfare of all people and for nature.

7. Benevolence: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.

8. Tradition: Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self.

9. Conformity: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.

10. Security: Safety, harmony, and stability of society, of relationships, and of self.

Source: Schwartz and Sagiv (1995)





Source: Schwartz (1992)

Schwartz's value dimensions express fundamental motivational goals which reflect existential needs and which, in turn, relate theoretically to potentially any attitude and behavior. In fact, Clark (1987) suggests that values provide an important link between consumers and marketers; successful marketers are able to develop brands that work effectively across borders because they understand both consumer values and brand values.

Consumers with different values can be expected to prioritize different associations of global brands. For example, people whose dominant values lie closer to the self-enhancement pole rather than the self-transcendence pole tend to be motivated by their own personal interests, even at the expense of others. Their main value types are hedonism, power, and achievement. On the other hand, people whose dominant values are closer to the self-transcendence pole rather than the self-enhancement pole tend to be motivated by promoting the welfare of others. Benevolence and universalism are their main values (Schwartz 1992). Resultant self-enhancement (RSE) construct, which is the importance attached by the consumer to self-enhancement minus the importance attached to self-transcendence (Feather 1995; Steenkamp et al. 1999), will be used in this research to indicate the dominant value types of the consumers.

It was suggested that new and functionally better products and brands have the potential to improve consumption (Steenkamp et al. 1999) and to help gain social status (Rogers 2003). It can be hypothesized that global brands are also a way of enhancing one's status and improving consumption experience. Thus, it can be expected that the effects of quality, innovativeness, prestige, genuineness, and globalness associations of

global brands on the likelihood of GBO are stronger for higher RSE consumers than lower RSE consumers (i.e., a positive moderator role of RSE). It can also be hypothesized that higher RSE consumers are more likely to buy global brands in general than lower RSE consumers (i.e., a direct effect of RSE on the likelihood of GBO). On the other hand, belongingness and social responsibility associations are aligned more with the dominant values of lower RSE consumers and these associations can be expected to have a stronger effect on the likelihood of GBO for lower RSE consumers than for higher RSE consumers (i.e., a negative moderator role of RSE).

Therefore, it is hypothesized that:

 H_{27} : The effect of perceived brand quality on the likelihood of GBO is stronger for higher RSE consumers than lower RSE consumers.

 H_{28} : The effect of perceived brand innovativeness on the likelihood of GBO is stronger for higher RSE consumers than lower RSE consumers.

 H_{29} : The effect of perceived brand belongingness on the likelihood of GBO is stronger for lower RSE consumers than higher RSE consumers.

 H_{30} : The effect of perceived brand prestige on the likelihood of GBO is stronger for higher RSE consumers than lower RSE consumers.

 H_{31} : The effect of perceived brand genuineness on the likelihood of GBO is stronger for higher RSE consumers than lower RSE consumers.

 H_{32} : The effect of perceived brand social responsibility on the likelihood of GBO is stronger for lower RSE consumers than higher RSE consumers.

 H_{33} : The effect of perceived brand globalness on the likelihood of GBO is stronger for higher RSE consumers than lower RSE consumers.

 H_{34} : RSE is positively related to the likelihood of GBO.

Just as was the case with higher income consumers, again the marginal effect of RSE on the likelihood of GBO can be expected to be higher for consumers in lessdeveloped countries than consumers in more-developed countries. In less-developed countries, consumers may see global brands as a means for self-enhancement (Friedman 1990). Such an effect of global brands may not be present for consumers from moredeveloped countries, thus the purchasing decisions of global brands may be more sensitive to consumer RSE in less-developed countries than in more-developed countries. Therefore, it is hypothesized that:

 H_{35} : The positive effect of RSE on the likelihood of GBO is stronger in lessdeveloped countries than in more-developed countries.

The second bipolar dimension is openness to change versus conservation. People whose dominant values lie closer to the openness to change pole rather than the conservation pole tend to be motivated by following their own intellectual and emotional interests in unpredictable and uncertain directions. Their main value types are stimulation and self-direction. On the other hand, people whose dominant values are closer to the conservation pole rather than the openness to change pole tend to be motivated by preserving the status-quo and the certainty it provides in relationships with close others, institutions, and traditions. Conformity, tradition, and security are their main values (Schwartz 1992). Resultant conservation (RC) construct, which is the importance attached to openness to change (Feather 1995; Steenkamp et al. 1999), will be used in this research to indicate the dominant value types of the consumers.

Innovativeness association of global brands is aligned with the values of lower RC consumers. Past research indeed has identified a negative association between conservation and consumer innovativeness (Steenkamp et al. 1999). Thus, it can be expected that the effect of innovativeness association on the likelihood of GBO is higher for lower RC consumers than higher RC consumers. Furthermore, global brands are the symbols of modernity and change, which again align with the values of lower RC consumers. Thus, we can expect globalness association to have a stronger effect on the likelihood of global brand ownership for lower RC consumers than higher RC consumers (i.e., a moderator role of RC on the relationship between perceived brand globalness and the likelihood of GBO) and lower RC consumers to be more likely to buy global brands in general (i.e., a direct effect of RC on the likelihood of GBO). For the other associations, no differences between higher RC and lower RC consumers are expected.

The hypotheses for the effect of RC are:

 H_{36} : The effect of perceived brand quality on the likelihood of GBO is not different for higher RC consumers vs. lower RC consumers.

 H_{37} : The effect of perceived brand innovativeness on the likelihood of GBO is stronger for lower RC consumers than higher RC consumers.

 H_{38} : The effect of perceived brand belongingness on the likelihood of GBO is not different for higher RC consumers vs. lower RC consumers.

 H_{39} : The effect of perceived brand prestige on the likelihood of GBO is not different for higher RC consumers vs. lower RC consumers.

 H_{40} : The effect of perceived brand genuineness on the likelihood of GBO is not different for higher RC consumers vs. lower RC consumers.

 H_{41} : The effect of perceived brand social responsibility on the likelihood of GBO is not different for higher RC consumers vs. lower RC consumers.

 H_{42} : The effect of perceived brand globalness on the likelihood of GBO is stronger for lower RC consumers than higher RC consumers. H_{43} : RC is negatively related to the likelihood of GBO.

Consistent with the arguments discussed for higher RSE consumers, the perceptional symbolic value, e.g., modernity, of global brands can be expected to be higher for consumers in less-developed countries than for consumers in more-developed countries. Hence, the marginal effect of resultant conservation on the likelihood of GBO may be higher in less-developed countries than in more-developed countries. Thus, the negative effect of RC on the likelihood of GBO can be expected to be stronger for consumers in less-developed countries than consumers in more-developed countries. Therefore, it is hypothesized that:

 H_{44} : The negative effect of RC on the likelihood of GBO is stronger in lessdeveloped countries than in more-developed countries.

Lastly, it can be hypothesized that average global brand ownership is higher in more-developed countries than less-developed countries, since it is the more-developed countries that are homes of global brands in general and consumers in developed countries have on average greater purchasing power. Thus, it is hypothesized:

 H_{45} : GDP per capita is positively related to the likelihood of GBO.

In the next section, the theoretical background for the research method is presented.

Chapter 3

RESEARCH METHOD

3.1 Unit of Analysis

Model variables describe both consumers and countries. These variables belong to different units of analysis that form a hierarchical structure; namely consumers are nested within countries. Two common traditional methods to deal with such a data structure have been:

1. To disaggregate all higher order (group level) variables to the individual level, and do the analyses on the individual level,

2. To aggregate the individual level variables to the group level and do the analyses on the group level.

The problem with the first approach is that the consumers in the same country will have the same value on each of the country variables. Therefore, the "independence of observations" assumption, which is basic for classical statistical techniques, does not hold (Raudenbush and Bryk 2002).

The second approach aggregates consumer characteristics over countries, and does a higher level analysis. However, all the within-group information is lost, the relations between aggregated variables often seem to be much stronger than what they actually are, and the relations between the aggregate variables can be very different from the relations between the nonaggregate variables. Waste of information and distortion of interpretation are the downsides of this second approach (Raudenbush and Bryk 2002).

Individuals in the same group are often closer or more similar than individuals in different groups. Consumers in different countries can be independent, but consumers in the same country share the same value on certain variables. If unaccounted for, these unobserved variables vanish into the error term of the linear model and cause correlation between disturbances. The disturbances have a group and an individual component. Group components are correlated within groups and independent between groups, whereas individual components are all independent. In addition, some groups may be more homogeneous than other groups, thus the variance of the group components can differ (Raudenbush and Bryk 2002).

Therefore, combining all variables that belong to different levels of analysis into one regression equation undermines two basic assumptions of traditional linear model analysis: homoscedasticity and independence.

One approach to solve these problems is to include an effect in the model that corresponds to the grouping of the lower-level units, thus employing ANOVA or ANCOVA. However, there are a number of problems with this approach (Luke 2004). As the number of groups increase, there are more parameters to estimate, the model has less power, and greater complexity. The treatment of group parameters as fixed effects ignores the random variability of the group characteristics. Furthermore, ANOVA methods are not very flexible in handling missing data or unbalanced designs (Luke 2004).

Hierarchical Linear Modeling (Bryk and Raudenbush 1992; Raudenbush and Bryk 2002) was developed to deal specifically with hierarchical (nested) data in education research. This method avoids the weaknesses outlined above. Each of the

levels in the data structure has its own sub-model, which indicates the relationships among variables within a given level and specifies how variables at one level influence relations occurring at another (Raudenbush and Bryk 2002). Disciplines such as sociology, biometrics, econometrics, and statistics have all contributed to the development of such models for nested data structure. Although not very common, organizational behavior (see Hofmann 1997; Hofmann and Gavin 1998; Klein et al. 1994) and strategic management research (see Song et al. 2002) also utilize this technique. Other names used in different literatures include multi-level linear models, mixed-effects models, random-effects models, random-coefficient regression models, covariance components models, etc. A more generalized version of HLM is called "Hierarchical Generalized Lincar Modeling (HGLM)" and is employed when the dependent variable is discrete (see Goldstein 1991; Wong and Mason 1985). Both HLM, and HGLM are quite new to the marketing discipline.

3.2 Hierarchical Linear Modeling (HLM)

A simple example of HLM follows for a 2-level model, where there are individual- (level-1) and group-level (level-2) variables.

To first isolate and then account for the effects of group-level variables, the individual-level variables are modeled as having a separate regression equation for each group. The parameters of these regression equations are then regressed on the group-level variables. This procedure lets group-level variables be used to explain variation in the

individual-level parameters and allows testing for main effects and interactions within and between levels.

Assume there are 2 level-1 variables (χ_1 and χ_2) and 1 level-2 variable (ω_1). The value of the dependent variable (Y_{ij}) can be predicted from the values of level-1 independent variables. The regression equation is:

$$Y_{ij} = \beta_{0j} + \beta_{1j} * \chi_{1ij} + \beta_{2j} * \chi_{2ij} + r_{ij} \qquad [3.1]$$

"i" refers to the person number and "j" refers to the group number.

Each group will have a separate regression equation, and the coefficients β_0 , β_1 , and β_2 will be allowed to change from group to group. Further analyses can explain their variability. Thus, level-2 regression equations are formed to predict the value of the level-1 parameters using values of the level-2 independent variable:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} * \omega_{1j} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} * \omega_{1j} + u_{1j}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21} * \omega_{1i} + u_{2i}$$

$$(3.4)$$

Note that there is a separate equation for each parameter in Equation [3.1].

If the level-2 equations [3.2], [3.3], and [3.4] are substituted into the level-1 equation [3.1], the combined model is:

$$Y_{ij} = \gamma_{00} + \gamma_{01} * \omega_{1j} + u_{0j}$$

+ $(\gamma_{10} + \gamma_{11} * \omega_{1j} + u_{1j}) * \chi_{1ij}$
+ $(\gamma_{20} + \gamma_{21} * \omega_{1j} + u_{2j}) * \chi_{2ij} + r_{ij}$ [3.5]

Coefficients that are allowed to vary from group to group, e.g., β_{0j} , β_{1j} , and β_{2j} are referred to as random coefficients. Coefficients " $\gamma_{..}$ " are not assumed to vary across groups (and hence they lack the subscript j); therefore, they are referred to as "fixed"

coefficients (Hox 1995). Standard OLS cannot be used to estimate this equation. As reviewed above, one necessary condition to conduct OLS is that the random errors are independent, normally distributed, and have constant variance. Note that the random error in Equation [3.5], which is $[u_{0j} + (u_{1j} * \chi_{1ij}) + (u_{2j} * \chi_{2ij}) + r_{ij}]$, is not independent across groups since the components u_{0j} , u_{1j} , and u_{2j} are common to every individual within group j. The errors do not have equal variances either, since u_{0j} , u_{1j} , and u_{2j} vary across groups and χ_{1ij} and χ_{2ij} vary across individuals. Although standard regression analysis is inappropriate, iterative maximum likelihood procedures can be used to estimate such models (Raudenbush and Bryk 2002).

Note that if u_{0j} , u_{1j} , and u_{2j} were null for every j, Equation [3.5] would be equivalent to an OLS regression model.

3.3 Hierarchical Generalized Linear Models (HGLM)

In the focal model of this study, the outcome variable, global brand ownership, is dichotomous. When the dependent variable is dichotomous, linear regression methods should not be employed for two reasons (Snijders and Bosker 1999). First, although the range of dichotomous variables is restricted, the ordinary linear regression model might give a fitted value which is outside this allowed range. For example, global brand ownership can be represented as 0 (failure; the consumer does not own the brand) and 1 (success; the consumer owns the brand). A fitted value of "0.80" can be interpreted as a probability of 80% for success (owning the brand) and a probability of 20% for failure

(not owning the brand). Getting a fitted value of "1.1," however, would not be meaningful.

Second, the mean and the variance of a Bernoulli distribution are related; the variance is determined by the mean (Snijders and Bosker 1999). For a dichotomous variable Y that has probability p for outcome 1 (success), the probability for outcome 0 (failure) is 1-p. The mean and variance are:

$$E(Y) = p$$

Var (Y) = p (1-p) [3.6]

Thus, the parameters in the fixed part and the parameters of the random part of the model are related. The variance is not a free parameter, but it is determined by the mean. The variance of the level-1 random effects is a function of the predicted value; higher predicted values are associated with larger residual variance (Raudenbush and Bryk 2002).

Two assumptions of HLM are linear relationship between the predictors and the dependent variable, and normality of the random effects (Raudenbush and Bryk 2002). These assumptions are violated when the dependent variable is dichotomous. The level-1 random effect cannot be normally distributed since it can take only two values contingent on the predicted value of the outcome. This can be shown as follows:

In a multi-level setting, the dichotomous outcome, Y_{ij} for level-1 unit i in group j, can be represented as the sum of the probability (average proportion of successes) in group j plus a residual for the individual i (assuming the probability of success is constant in each group).

$$\mathbf{Y}_{ij} = \mathbf{P}_j + \mathbf{R}_{ij} \tag{3.7}$$

The residual R_{ij} has a mean zero; however, it can have only the values $-P_j$ and $1-P_j$, since Y_{ij} must be 0 or 1. Given the value of the probability P_j , the variance of the residual is:

$$Var(R_{ij}) = P_j(1-P_j)$$
 [3.8]

When the outcome variable is dichotomous, the linearity assumption does not hold either. That the dependent variable must lie between the (0, 1) interval requires a nonlinear transformation of the predicted value. Thus, the outcome is modeled as a nonlinear function of explanatory variables. The analysis of nonlinear structural models and nonnormally distributed errors is accomplished by hierarchical generalized linear models (HGLMs). The level-1 model in HGLM consists of three parts: a sampling model, a link function, and a structural model.

1. Level-1 Sampling Model

It is assumed that the level-1 outcome variable arises from a specific probability distribution, holding constant the level-1 expected value. This level-1 probability distribution is called the level-1 sampling model.

$$Y_{ij} | \varphi_{ij} \sim \mathbf{B}(m_{ij}, \varphi_{ij})$$
 [3.9]

In the Equation 3.9, Y_{ij} is defined as the number of successes in m_{ij} trials and φ_{ij} as the probability of success in each trial. Y_{ij} has a binomial distribution with m_{ij} trials and probability of success per trial as φ_{ij} . The expected value and variance of Y_{ij} are shown in Equation 3.10.

$$E(Y_{ij}|\varphi_{ij}) = m_{ij}\varphi_{ij}, \quad Var(Y_{ij}|\varphi_{ij}) = m_{ij}\varphi_{ij}(1-\varphi_{ij})$$
[3.10]

When $m_{ij} = 1$, Y_{ij} can only take a value of zero or one. This distribution is also known as the Bernoulli distribution and it is the focal case here.

2. Level-1 Link Function

Instead of the probability of some event, e.g., global brand ownership, one can consider the odds (Snijders and Bosker 1999). The odds of success are defined as the ratio of the probability of success (φ_{ij}) to the probability of failure (1- φ_{ij})

$$Odds = \left(\frac{\varphi_{ij}}{1 - \varphi_{ij}}\right)$$
[3.11]

Unlike probabilities, odds can take any value from zero to infinity.

"Link function" is the general term for a transformation function. It links the expected values of the dependent variable to the explanatory variables. "Log-odds" is one of the most frequently used link function for probabilities. The logit function is an increasing function defined for numbers between 0 and 1, and its range goes from $-\infty$ to $+\infty$. The level-1 predicted value, φ_{ij} , is transformed via this link function to ensure that the predicted values lie in the given interval. Equation 3.12 shows the logit link function.

$$\eta_{ij} = \ln(\frac{\varphi_{ij}}{1 - \varphi_{ij}}), \qquad [3.12]$$

where η_{ij} is the log-odds (natural logarithm) of the odds of success.

When the probability of success, φ_{ij} , is .5, the odds of success are $\varphi_{ij} / (1 - \varphi_{ij}) = .5/.5 = 1$ and the log-odds is 0. When the probability of success is less than .5, the odds are less than 1 and the logit is negative, whereas when the probability of success is more than .5, the odds are more than 1 and the logit is positive. By forming the link function, φ_{ij} is constrained to stay in the interval (0, 1), whereas η_{ij} can take any real value.

3. Level-1 Structural Model

The level-1 link function, η_{ij} , can be equated to a linear model having level-1 coefficients. Level-1 structural model refers to this linear model. A predicted log-odds is converted to an odds by taking the exp (η_{ij}), whereas it is converted to a predicted probability by the logistic function stated in Equation 3.13. The logistic and logit functions are the inverses of each other.

$$\varphi_{ij} = \frac{\exp(\eta_{ij})}{1 + \exp(\eta_{ij})} = \frac{1}{1 + \exp(-\eta_{ij})}$$
[3.13]

Please note that the value of φ_{ij} will be in the interval (0, 1).

HLM can be considered as a special case of HGLM where the sampling model is normal, the link function is the identity link, and the structural model is linear (Raudenbush and Bryk 2002).

3.4 Data

For level-1 variables, proprietary data were obtained from a large, global marketing research consultancy. The data were collected in late 2003 via one-hour closed-ended interviews with consumers. The samples were designed to represent the national population aged 13-65. A multistage, stratified area probability sample was used. For the selection of households, interviewers followed randomly selected, predetermined interviewing routes with skip intervals. All interviews were conducted face-to-face at respondents' homes. The sample size was 31,397 respondents from 31 countries. The countries included in the research are: Argentina, Australia, Brazil, Canada, China, Czech Republic, Egypt, France, Germany, Hong Kong, Hungary, India, Indonesia, Italy, Japan, South Korea, Mexico, Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Taiwan, Thailand, Turkey, U.K., U.S.A., and Venezuela.

The research includes thirty-six global brands, which span 6 categories: automotive, technology, media services, consumer goods, personal care, and financial services.

Public secondary data were used for the level-2 variable. Gross domestic product (GDP) per capita values were taken from The World Factbook (2004) of the Central Intelligence Agency (CIA).

3.5 Model Variables and Their Descriptions

The variables used in the model were global brand associations (Quality, Innovativeness, Belongingness, Prestige, Globalness, Genuineness, and Social Responsibility), consumer characteristics (Age, Income, RSE, and RC) and country characteristics (GDP per Capita). All the brand variables are dichotomous; consumer and country variables are continuous. The names and descriptions of the variables are provided in Table 3.1.

 Table 3.1 – Description of Variables

Variable	Description			
Level-1 Variables				
Perceived Brand Quality	QUALITY is a dichotomous, uncentered variable, coded			
	1 if the brand is perceived as high quality and 0 if it is not.			
Perceived Brand	INNOVATI is a dichotomous, uncentered variable, coded			
Innovativeness	1 if the brand is perceived as innovative and 0 if it is not.			
Perceived Brand	BELONGIN is a dichotomous, uncentered variable, coded			
Belongingness	1 if the consumer feels s/he is part of a group connected			
	by the brand and 0 if s/he is does not.			
Perceived Brand Prestige	PRESTIGE is a dichotomous, uncentered variable, coded			
	1 if the brand is perceived as prestigious and 0 if it is not.			
Perceived Brand	GLOBAL is a dichotomous, uncentered variable, coded 1			
Globalness	if the brand is perceived as global and 0 if it is not.			
Perceived Brand	GENUINE is a dichotomous, uncentered variable, coded			
Genuineness	1 if the brand is perceived as genuine and 0 if it is not.			
Perceived Brand Social	SOCRESP is a dichotomous, uncentered variable, coded 1			
Responsibility	if the brand is perceived as being socially responsible and			
	0 if it is not.			
Age	AGE is a continuous variable. It is grand-mean centered			
	and expressed in 10s.			
Income	INCOME is a continuous variable calculated by using			
	Purchasing Power Parity (PPP) for consumers from			
	different countries. It is grand-mean centered and			
	expressed in 1,000s.			
Resultant Self-	RSE is a continuous variable calculated from Schwartz's			
Enhancement (RSE)	value dimensions. It is grand-mean centered.			
Resultant Conservatism	RC is a continuous variable calculated from Schwartz's			
(RC)	value dimensions. It is grand-mean centered.			

Table 3.1, cont.

Variable Description				
Level-2 Variable				
GDP per Capita	GDPCAPIT is a continuous variable; it is GDP on a purchasing power parity basis divided by population. It is grand-mean centered and expressed in 1,000s.			

While dichotomous variables were left uncentered, all of the continuous variables were grand-mean centered. Grand-mean centering of a predictor was done by subtracting the grand mean of the predictor from the original predictor for each level-1 case. Grand-mean centering makes the interpretation of the intercept term meaningful (Raudenbush and Bryk 2002). The intercept term is interpreted as the expected value of the outcome variable when the values of explanatory variables are zero. For example, if AGE were left uncentered, the intercept would show the log-odds of brand ownership for a consumer who is zero years old, which is not meaningful. Grand-mean centering makes the intercept the expected value of the outcome variable for an individual with an "average" level of explanatory variable, e.g., average age. Previous research found that grand-mean centered models provide a computational advantage by reducing the correlation between the intercepts and slopes can help to mitigate potential level-2 estimation problems due to multicollinearity (Kreft et al. 1995).

GDPCAPITA variable used purchasing power parity (PPP) basis instead of official exchange rate. GDP at PPP is the total value of all goods and services produced in the country, valued at market prices in the United States. According to the CIA (2004),

"This is the measure most economists prefer when looking at per-capita welfare and when comparing living conditions or use of resources across countries."

The level-1 INCOME variable that was originally coded in local currency was also converted to its PPP equivalent. The World Bank's 2004 World Development Indicators were used. PPP Conversion Factor is "the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a U.S. dollar would buy in the United States" (WorldBank 2004). By making this conversion, comparison of the income levels between consumers from different countries is made meaningful.

Transformation of Resultant Self-Enhancement (RSE) and Resultant Conservation (RC) were calculated as follows. First, mean values for each of the 10 value types were calculated by averaging the importance scores of individual values. Then, the mean of the value types for each domain was calculated (Table 3.2). This method ensures equal weighting of the value types in the formation of the value domains (Schwartz 1992). As proposed by Feather (1995), the score for resultant selfenhancement/conservation was computed by subtracting the mean importance score for self-transcendence/openness to change from the mean importance score for selfenhancement/conservation (Table 3.3).

Value Domain	Value Types		
Self-transcendence	Universalism, benevolence		
Self-enhancement	Power, achievement, hedonism		
Openness to change	Stimulation, self-direction		
Conservation	Tradition, conformity, security		

Table 3.2 – Value Domains

Table 3.3 – Value Poles

Value Poles	Calculation		
Resultant self-enhancement (RSE)	Self-enhancement – Self-transcendence		
Resultant conservation (RC)	Conservation – Openness to Change		

Finally, a list of interaction terms is provided in Table 3.4.

Table 3.4 – List of Interaction Terms

Level-1 Interaction Term Notation	Description
INCQUAL	INCOME*QUALITY
INCINNOV	INCOME*INNOVATI
INCBELON	INCOME*BELONGIN
INCPREST	INCOME*PRESTIGE
INCGLOBA	INCOME*GLOBAL
INCGENUI	INCOME*GENUINE
INCSOCRE	INCOME*SOCRESP
AGEQUAL	AGE*QUALITY
AGEINNOV	AGE*INNOVATI
AGEBELON	AGE*BELONGIN
AGEPREST	AGE*PRESTIGE
AGEGLOBA	AGE*GLOBAL
AGEGENUI	AGE*GENUINE
AGESOCRE	AGE*SOCRESP
RSEQUAL	RSE*QUALITY
RSEINNOV	RSE*INNOVATI
RSEBELON	RSE*BELONGIN
RSEPREST	RSE*PRESTIGE
RSEGLOBA	RSE*GLOBAL

Table 3.4, cont.

Level-1 Interaction Term Notation	Description
RSEGENUI	RSE*GENUINE
RSESOCRE	RSE*SOCRESP
RCQUAL	RC*QUALITY
RCINNOV	RC*INNOVATI
RCBELONG	RC*BELONGIN
RCPRESTI	RC*PRESTIGE
RCGLOBAL	RC*GLOBAL
RCGENUIN	RC*GENUINE
RCSOCRES	RC*SOCRESP
GLOBQUAL	GLOBAL*QUALITY
GLOBINNO	GLOBAL*INNOVATI
GLOBBELO	GLOBAL*BELONGIN
GLOBPRES	GLOBAL*PRESTIGE
GLOBGENU	GLOBAL*GENUINE
GLOBSOCR	GLOBAL*SOCRESP

3.6 Model Specification

3.6.1 Fully Unconditional Model

Formulation of a fully unconditional model, where no predictors are specified at either level, is suggested as the first step by Raudenbush and Bryk (2002). The purpose of this stage is to see how much variation in the outcome lies within and between countries. The level-1 model is given in Equation 3.14, and level-2 model is given in Equation 3.15.

$$\eta_{ij} = \beta_{0j} \tag{3.14}$$

$$\beta_{pj} = \gamma_{00} + u_{0j}$$
 $u_{0j} \sim N(0, \tau_{00})$ [3.15]

where γ_{00} is the average log-odds of global brand ownership across countries, and τ_{00} is the variance between countries in country-average log-odds of repetition. The estimated results are $\gamma_{00} = -1.084824$ (se = 0.051468), $\tau_{00} = 0.07687$ (sd = 0.27726). The interpretation is that for a country with a typical global brand ownership rate (with $u_{0j} =$ 0), the expected log-odds of global brand ownership is -1.084824. This corresponds to an odds of exp (-1.084824) = .34 and a probability of 1 / (1 + exp (1.084824)) = .25. Equation 3.14 does not include a level-1 residual because it is an equation for η_{ij} , not for Y_{ij} .

Here, the explanation of an important index used in multi-level models, intra-class correlation, is necessary and the explanation requires a detour.

Intra-Class Correlation (ICC)

In a traditional HLM, a fully unconditional model would be of the form:

$\mathbf{Y}_{ij} = \beta_{0j} + \mathbf{r}_{ij}$	$r_{0j} \sim N (0, \sigma^2)$	[3.16]	
$\beta_{0i} = \gamma_{00} + u_{0i}$	$u_{0i} \sim N (0, \tau_{00})$	[3.17]	

This model is equivalent to a one-way ANOVA with random effects. Y_{ij} is modeled as a function of an individual-level mean and a random error. More specifically:

 Y_{ij} is the outcome for the individual i in group j

 β_{0j} is the mean outcome for the jth group

 r_{ij} is a random person (level-1) effect. Each level-1 error, r_{ij} , is assumed to be normally distributed with a mean of zero and a constant level-1 variance, σ^2

 γ_{00} is the grand-mean outcome in the population

 u_{ij} is the random group (level-2) effect associated with group j and it represents the deviation of group j's mean from the grand mean. Each level-2 effect is assumed to be normally distributed with a mean of 0 and variance τ_{00} .

The variance of the outcome is:

Var
$$(Y_{ij}) = Var (r_{ij} + u_{ij}) = \sigma^2 + \tau_{00}$$
 [3.18]

The σ^2 parameter gives within-group variability, whereas the parameter τ_{00} gives the between-group variability. The intra-class correlation (ICC) is a widely used statistic by multilevel researchers. It measures the proportion of the variance in the outcome that is between groups. Equation 3.19 provides the formula:

$$\rho = \tau_{00} / (\tau_{00} + \sigma^2)$$
 [3.19]

Notice that the model shown in Equation 3.14 and 3.15 does not have a parameter for the level-1 variance. This is because the level-1 residual variance of the dichotomous outcome variable directly comes from the success probability (Snijders and Bosker 1999), as shown in the Equation 3.8.

Accordingly, the partitioning of variance into different levels is not very simple in HGLM. Decomposing variance of an outcome variable into different levels is most appropriate when the outcome variable is continuous and the error terms are additive and independent. Traditional HLM analyses usually model the realized values of the outcome variable as a deterministic function of independent variable(s) plus error terms, which are realized values of random variables. The models are considered "perfect" when they can explain the actual values of the outcome variable without error terms, i.e., when there is no residual variance. When the models are not "perfect," the left-over variance can be

attributed to the error term(s) and apportioned among them according to each one's variance (Feiveson 2001).

When the outcome variable is binary, however, multi-level researchers usually do not model the "values" of it, but they rather model the probability, p, that the outcome variable is 1 as a nonlinear function of the independent variables and error terms at Level 2 or higher. Even if the model is "perfect," (i.e., the higher level error terms have zero variance) there would still be level-1 variation, which is p*(1-p), since p is modeled, not the value of the outcome variable (Feiveson 2001). This would still be the case even though p is "perfectly" modeled. If p is not "perfectly" modeled, decomposition of the sources of variation at level-2 or higher may still be desirable; however, these error terms contribute to the overall higher-level variance in a non-additive way. Thus, each error term's contribution to the higher-level variance cannot be claimed to be proportional to its own variance (Feiveson 2001). Therefore, the intraclass correlation, which is a very useful index for hierarchical linear models, is not very informative for hierarchical generalized linear models (Raudenbush and Bryk 2002).

It is still theoretically possible to get this index. The multilevel logistic regression can be formulated as a so-called threshold model. The assumption is that the dichotomous outcome variable is the manifestation of an underlying latent continuous variable. The level-1 residual of the underlying latent variable has a logistic distribution with a mean of 0 and a variance of $\pi^2/3 = 3.29$ (Snijders and Bosker 1999). Thus, the ICC formula becomes:

$$\rho = \tau_{00} / (\tau_{00} + \pi^2 / 3)$$
 [3.20]

The estimate is provided in Equation 3.15 as $\tau_{00} = 0.07687$. Using this value in

Equation 3.20 gives $\rho = 0.07687 / (0.07687 + 3.29) = 0.0228$. This means that 2.28% of

the variability in the global brand ownership variable is between the countries.

3.6.2 Level-1 Conditional Model

The level-1 conditional model is formulated by using the log-odds of global brand ownership as the outcome. The model is indicated below with $i = 1, 2, ..., n_{ij}$ consumers nested within each of j = 1, 2, ..., j countries.

$$\begin{split} &\eta_{ij} = \beta_{0j} + \beta_{1j}^{*}(\text{QUALITY})_{ij} + \beta_{2j}^{*}(\text{INNOVATI})_{ij} + \beta_{3j}^{*}(\text{BELONGIN})_{ij} + \\ &\beta_{4j}^{*}(\text{PRESTIGE})_{ij} + \beta_{5j}^{*}(\text{GLOBAL})_{ij} + \beta_{6j}^{*}(\text{GENUINE})_{ij} + \beta_{7j}^{*}(\text{SOCRESP})_{ij} + \\ &\beta_{8j}^{*}(\text{INCOME})_{ij} + \beta_{9j}^{*}(\text{AGE})_{ij} + \beta_{10j}^{*}(\text{RSE})_{ij} + \beta_{11j}^{*}(\text{RC})_{ij} + \beta_{12j}^{*}(\text{INCQUAL})_{ij} + \\ &\beta_{13j}^{*}(\text{INCINNOV})_{ij} + \beta_{14j}^{*}(\text{INCBELON})_{ij} + \beta_{15j}^{*}(\text{INCPREST})_{ij} + \beta_{16j}^{*}(\text{INCGLOBA})_{ij} + \\ &\beta_{17j}^{*}(\text{INCGENUI})_{ij} + \beta_{18j}^{*}(\text{INCSOCRE})_{ij} + \beta_{19j}^{*}(\text{AGEQUAL})_{ij} + \beta_{20j}^{*}(\text{AGEINNOV})_{ij} + \\ &\beta_{21j}^{*}(\text{AGEBELON})_{ij} + \beta_{22j}^{*}(\text{AGEPREST})_{ij} + \beta_{23j}^{*}(\text{AGEGLOBA})_{ij} + \beta_{24j}^{*}(\text{AGEGENUI})_{ij} \\ &+ \beta_{25j}^{*}(\text{AGESOCRE})_{ij} + \beta_{26j}^{*}(\text{RSEQUAL})_{ij} + \beta_{27j}^{*}(\text{RSEINNOV})_{ij} + \beta_{28j}^{*}(\text{RSEBELON})_{ij} \\ &+ \beta_{29j}^{*}(\text{RSEPREST})_{ij} + \beta_{30j}^{*}(\text{RSEGLOBA})_{ij} + \beta_{31j}^{*}(\text{RSEGENUI})_{ij} + \beta_{32j}^{*}(\text{RCPRESTI})_{ij} \\ &+ \beta_{33j}^{*}(\text{RCQUAL})_{ij} + \beta_{34j}^{*}(\text{RCINNOV})_{ij} + \beta_{35j}^{*}(\text{RCBELONG})_{ij} + \beta_{36j}^{*}(\text{RCPRESTI})_{ij} + \\ &\beta_{37j}^{*}(\text{RCGLOBAL})_{ij} + \beta_{38j}^{*}(\text{RCGENUIN})_{ij} + \beta_{39j}^{*}(\text{RCSOCRES})_{ij} + \beta_{40j}^{*}(\text{GLOBQUAL})_{ij} \\ &+ \beta_{44j}^{*}(\text{GLOBINNO})_{ij} + \beta_{42j}^{*}(\text{GLOBBELO})_{ij} + \beta_{43j}^{*}(\text{GLOBPRES})_{ij} + \\ &\beta_{44j}^{*}(\text{GLOBGENU})_{ij} + \beta_{45j}^{*}(\text{GLOBSOCR})_{ij} & [3.21] \\ \end{aligned}$$

In Equation 3.14, η_{ij} is the log-odds of global brand ownership for consumer i in country j. The parameter β_{0j} is the intercept term. β_{pj} are the slopes for the level-1 variables, associated with country j.

3.6.3 Level-2 Unconditional Model

As in linear HLM, the level-1 intercept and slope terms become outcome

variables in the level-2 model in HGLM. The hypotheses require a test of whether the

relationships between AGE, INCOME, RSE, and RC and Global Brand Ownership,

together with the average global brand ownership, vary across countries or not. Thus,

respective coefficients, together with the intercept term, are modeled as random. This is expressed as follows:

Estimation of variance components are provided in Table 3.5. The results suggest that there is no significant variation across countries to model the relationship between RC and the dependent variable (p > .500).

Table 3.5 – Estimation	1 of Variance	Components
------------------------	---------------	------------

Random Effect	Standard	Variance		Chi-square	P-value
	Deviation	Component	df		
INTRCPT1, U0	0.25994	0.06757	30	210.02038	0.000
INCOME slope, U8	0.04048	0.00164	30	54.67346	0.004
AGE slope, U9	0.04362	0.00190	30	42.94462	0.059
RSE slope, U10	0.04115	0.00169	30	40.87888	0.089
RC slope, U11	0.01526	0.00023	30	27.61276	>.500

3.6.4 Level-2 Conditional Model

When building the conditional model for level-2, nonsignificant variation in the RC slope is taken into account, and this variable is treated as fixed in the subsequent analyses. The relationships between age and the likelihood of GBO, income and the likelihood of GBO, and RSE and the likelihood of GBO are identified as group-variant. Therefore, in order to better understand to what degree this variation is a function of
economic development levels of the countries, GDPCAPIT variable is added to the

model. The resulting level-2 conditional model is as follows:

 $\beta_{pj} = \gamma_{p0} + \gamma_{p1} * (\text{GDPCAPIT})_j + u_{pj} \qquad \text{if } p = 0, 8, 9, 10$ $\beta_{pj} = \gamma_{p0} \qquad \text{otherwise} \qquad [3.23]$

3.6.5 Mixed Model

Substituting Equation 3.23 in Equation 3.21 gives the mixed model:

 $\eta_{ii} = \gamma_{00} + \gamma_{01} * (\text{GDPCAPITA})_i + \gamma_{10} * (\text{QUALITY})_{ii} + \gamma_{20} * (\text{INNOVATI})_{ii} + \gamma_{10} * (\text{QUALITY})_{ii} + \gamma_{10} * (\text{QUALITY})_{ii$ $\gamma_{30}^{*}(BELONGIN)_{ii} + \gamma_{40}^{*}(PRESTIGE)_{ii} + \gamma_{50}^{*}(GLOBAL)_{ii} + \gamma_{60}^{*}(GENUINE)_{ii} +$ γ_{70}^* (SOCRESP)_{ii} + γ_{80}^* (INCOME)_{ii} + γ_{81}^* (GDPCAPITA)_i*(INCOME)_{ii} + γ_{90}^* (AGE)_{ii} + γ_{91} *(GDPCAPITA)_i *(AGE)_{ii} + γ_{100} *(RSE)_{ii} + γ_{101} *(GDPCAPITA)_i*(RSE)_{ii} + $\gamma_{110}^{*}(RC)_{ii} + \gamma_{120}^{*}(INCQUAL)_{ii} + \gamma_{130}^{*}(INCINNOV)_{ii} + \gamma_{140}^{*}(INCBELON)_{ii} +$ $\gamma_{150}^{*}(INCPREST)_{ij} + \gamma_{160}^{*}(INCGLOBA)_{ij} + \gamma_{170}^{*}(INCGENUI)_{ij} + \gamma_{180}^{*}(INCSOCRE)_{ii} + \gamma_{150}^{*}(INCSOCRE)_{ij} + \gamma_{160}^{*}(INCSOCRE)_{ij} + \gamma_{160}^{*}(IN$ $\gamma_{190}^{*}(AGEQUAL)_{ii} + \gamma_{200}^{*}(AGEINNOV)_{ii} + \gamma_{210}^{*}(AGEBELON)_{ii} + \gamma_{220}^{*}(AGEPREST)_{ii}$ + γ_{230}^* (AGEGLOBA)_{ii} + γ_{240}^* (AGEGENUI)_{ii} + γ_{250}^* (AGESOCRE)_{ii} + $\gamma_{260}^{*}(RSEQUAL)_{ii} + \gamma_{270}^{*}(RSEINNOV)_{ii} + \gamma_{280}^{*}(RSEBELON)_{ii} + \gamma_{290}^{*}(RSEPREST)_{ii} + \gamma_{200}^{*}(RSEPREST)_{ii} + \gamma_{200}^{*}(RSE$ γ_{300}^* (RSEGLOBA)_{ii} + γ_{310}^* (RSEGENUI)_{ii} + γ_{320}^* (RSESOCRE)_{ii} + γ_{330}^* (RCQUAL)_{ii} + γ_{340}^* (RCINNOV)_{ij} + γ_{350}^* (RCBELONG)_{ij} + γ_{360}^* (RCPRESTI)_{ij} + γ_{370}^* (RCGLOBAL)_{ij} + γ_{380}^{*} (RCGENUIN)_{ii} + γ_{390}^{*} (RCSOCRES)_{ii} + γ_{400}^{*} (GLOBQUAL)_{ii} + γ_{410} *(GLOBINNO)_{ii} + γ_{420} *(GLOBBELO)_{ii} + γ_{430} *(GLOBPRES)_{ii} + γ_{440} *(GLOBGENU)_{ii} + γ_{450} *(GLOBSOCR)_{ii} + u_{0i} + u_{8i} *(INCOME)_{ii} + u_{9i} *(AGE)_{ii} + $u_{10i}^{*}(RSE)_{ii}$ [3.24]

Chapter 4

RESEARCH RESULTS

4.1 Descriptive Statistics

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The summary statistics for consumer-level variables and the county-level variable

is presented in Table 4.1.

Table 4.1 – Descriptive	Statistics
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LEVEL-1 DESCRIPTIVE STATISTICS										
VARIABLE	Ν	MEAN	STANDARD	MINIMUM	MAXIMUM					
NAME			DEVIATION							
QUALITY	31337	0.35	0.48	0.00	1.00					
INNOVATI	31337	0.21	0.41	0.00	1.00					
BELONGIN	31337	0.19	0.39	0.00	1.00					
PRESTIGE	31337	0.24	0.43	0.00	1.00					
GLOBAL	31337	0.23	0.42	0.00	1.00					
GENUINE	31337	0.14	0.34	0.00	1.00					
SOCRESP	31337	0.10	0.30	0.00	1.00					
BOWNERSH	31337	0.25	0.43	0.00	1.00					
INCOME	26863	-0.00	2.06	-2.34	17.00					
AGE	31329	0.00	1.45	-2.11	2.74					
RSE	31397	-0.00	1.77	-5.75	7.67					
RC	31397	0.00	1.77	-7.16	6.30					
INCQUAL	29772	0.02	1.20	-2.29	14.79					
INCINNOV	30417	0.00	0.88	-2.34	14.79					
INCBELON	30668	-0.03	0.82	-2.29	14.79					

Table 4.1, cont.

LEVEL-1 DESCRIPTIVE STATISTICS										
VARIABLE	N	MEAN	STANDARD	MINIMUM	MAXIMUM					
NAME			DEVIATION							
INCPREST	30294	0.01	1.00	-2.29	14.79					
INCGLOBA	30388	0.04	0.98	-2.34	14.79					
INCGENUI	30746	-0.00	0.73	-2.34	14.79					
INCSOCRE	30909	0.00	0.67	-2.29	14.79					
AGEQUAL	31319	-0.01	0.85	-2.11	2.74					
AGEINNOV	31326	-0.03	0.66	-2.11	2.74					
AGEBELON	31329	-0.01	0.63	-2.11	2.74					
AGEPREST	31314	-0.01	0.70	-2.11	2.74					
AGEGLOBA	31319	-0.00	0.67	-2.11	2.74					
AGEGENUI	31321	-0.00	0.53	-2.11	2.74					
AGESOCRE	31329	-0.01	0.45	-2.11	2.74					
RSEQUAL	31337	0.00	1.05	-5.56	7.67					
RSEINNOV	31337	0.02	0.82	-5.56	6.78					
RSEBELON	31337	0.03	0.76	-5.67	7.67					
RSEPREST	31337	0.02	0.89	-5.58	6.64					
RSEGLOBA	31337	0.01	0.85	-5.67	7.42					
RSEGENUI	31337	0.01	0.65	-5.67	7.67					
RSESOCRE	31337	0.01	0.56	-5.56	6.78					
RCQUAL	31337	-0.01	1.06	-6.92	6.24					
RCINNOV	31337	-0.00	0.82	-6.92	6.24					
RCBELONG	31337	0.02	0.77	-6.49	6.30					
RCPRESTI	31337	-0.01	0.88	-6.92	6.03					
RCGLOBAL	31337	-0.01	0.85	-7.16	6.24					
RCGENUIN	31337	-0.00	0.65	-6.59	6.30					
RCSOCRES	31337	0.00	0.56	-6.80	6.24					

Table 4.1, cont.

LEVEL-1 DESCRIPTIVE STATISTICS											
VARIABLE	N	MEAN	STANDARD	STANDARD MINIMUM							
NAME			DEVIATION								
GLOBQUAL	31337	0.10	0.30	0.00	1.00						
GLOBINNO	31337	0.07	0.25	0.00	1.00						
GLOBBELO	31337	0.06	0.23	0.00	1.00						
GLOBPRES	31337	0.08	0.28	0.00	1.00						
GLOBGENU	31337	0.05	0.21	0.00	1.00						
GLOBSOCR	31337	0.04	0.20	0.00	1.00						
LEVEL-2 DESCRIPTIVE STATISTICS											
GDPCAPIT	31	16.63	10.34	2.90	37.80						

For the purposes of the analysis, the HLM 6.02 (Raudenbush et al. 2000) software was used. The two most frequently used estimation methods for hierarchical generalized linear models are MQL and PQL (Snijders and Bosker 1999). MQL (marginal quasilikelihood) does the approximation around the estimated fixed part, whereas PQL (penalized quasi-likelihood) does it around an estimate for the fixed part and the random part (Snijders and Bosker 1999). Guo and Zhao (2000) recommend the use of PQL over MQL for binary data. PQL, which is also the default estimation method used by the program, is chosen as the estimation procedure here.

The program provides two sets of estimated coefficients: one for unit-specific models, the other for population average models. When the research questions are unit-specific, e.g., when one investigates how differences in level-2 explanatory variables relate to the level-1 processes in each level-1 unit, unit-specific model is appropriate.

This study tries to find an answer to a population-average question. The topic of interest is not country-specific; not specific countries but rather the differences between countries that are more-developed versus less-developed are investigated. Thus, population-average model estimates are appropriate and they are used. It should be noted that population-average estimates have the additional benefits of being quite robust to erroneous assumptions about the distribution of random effects in the model (Raudenbush and Bryk 2002).

4.2 Estimated Results

4.2.1 Direct Effects

Table 4.2 shows the hypothesized direct effects of the consumer- and countrylevel variables on the likelihood of global brand ownership, together with the analysis results.

Direct Effects	Hypothesized	Coefficient	t-ratio	Resultant
	Directional			Relationship
	Relationship			
	w/GBO			
Perceived Brand Quality	Positive	0.181040	5.234***	Positive
Perceived Brand Innovativeness	Positive	0.261474	6.414***	Positive
Perceived Brand Belongingness	Positive	-0.058745	-1.326	NS

Table 4.2 – Direct Effects



Table 4.2, cont.

Direct Effects	Hypothesized	Coefficient	t-ratio	Resultant
	Directional			Relationship
	Relationship			
	w/GBO			
Perceived Brand Prestige	Positive	-0.446787	-10.326***	Negative
Perceived Brand	Positive	0.228780	4.667***	Positive
Genuineness				
Perceived Brand Social	Positive	0.103335	1.653**	Positive
Responsibility				
Perceived Brand	Positive	0.001675	0.031	NS
Globalness				
Age	Negative	-0.076071	-4.350***	Negative
Income	Positive	0.053120	3.689***	Positive
RSE	Positive	0.009460	0.663	NS
RC	Negative	0.041719	3.188***	Positive
GDP per Capita	Positive	0.004895	0.987	NS

*** *p* < .01 ** *p* < .05

All of the brand associations were hypothesized to be positively related to the likelihood of global brand ownership. All but belongingness and globalness associations do appear to have significant direct effects on the likelihood of global brand ownership. Perceived brand prestige association was negatively related to the likelihood of GBO (p < .01). [H₁, H₂, H₅ and H₆ are supported; H₃, H₄, and H₇ are not.]

The direct effects of consumer demographics are as expected. Age was negatively related (p < .01) and income was positively related (p < .01) to the likelihood of GBO. [H₁₆ and H₂₅ are supported.] The direct effect of RSE was found to be nonsignificant. The direct effect of RC was found to be significant (p<.01) but positive, in contrast to what was hypothesized. [H_{34} and H_{43} are not supported.]

The direct effect of GDP per Capita on the likelihood of GBO was nonsignificant. [H_{45} is not supported.] The level of economic development does not seem to explain the differences in the average odds of global brand ownership between countries.

4.2.2 Moderating Effects

Table 4.3 shows the hypothesized moderation effects of Age, Income, RSE, and RC on the relationships between the perceived brand associations and the likelihood of global brand ownership, together with the analysis results.

	dir															
Resultant	Relations	NS	NS	NS	NS		NS	NS	Positive	NS	Negative	NS	Positive	Positive	NS	
t-ratio		0.769	-0.892	0.181	1.078		0.338	0.894	2.108**	0.209	-1.298*	0.459	1.533*	2.249**	0.130	
Coefficient		0.016820	-0.023535	0.005391	0.037262		0.008485	0.024003	0.054279	0.002917	-0.021244	0.008238	0.024714	0.041982	0.002655	
Hypothesized	Directional Relationship	Positive	Positive	Positive	Positive		Negative	Negative	Negative	Positive	Positive	Positive	Positive	Positive	Positive	
Global Brand Associations		Perceived Brand Quality	Perceived Brand Prestige	Perceived Brand Genuineness	Perceived Brand Social	Responsibility	Perceived Brand Innovativeness	Perceived Brand Belongingness	Perceived Brand Globalness	Perceived Brand Quality	Perceived Brand Innovativeness	Perceived Brand Belongingness	Perceived Brand Prestige	Perceived Brand Genuineness	Perceived Brand Social	
Consumer	Characteristics	Age								Income						

Table 4.3 - Moderating Effects of Consumer Characteristics



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4.3,	
Table	

Characteristics Directional Ketationship RSE Perceived Brand Quality Positive -0.012467 Perceived Brand Manovativeness Positive -0.012467 -0.012467 Perceived Brand Manovativeness Positive -0.038191 -0.038191 Perceived Brand Manovativeness Positive 0.03834 -0.03814 Perceived Brand Chaulineness Positive 0.035408 0.03203 Perceived Brand Genuineness Positive 0.03203 0.03203 Perceived Brand Genuineness Positive 0.003108 0.00108 RC Perceived Brand Godal Negative 0.00108 RC Perceived Brand Globalness NS 0.014327 RC Perceived Brand Globalness NS 0.014327 RC Perceived Brand Globalness NS 0.003865 Perceived Brand Globalness NS 0.013287 Perceived Brand Globalness NS 0.013287 Perceived Brand Globalness NS 0.003655 Perceived Brand Globalness NS <th></th> <th></th> <th></th> <th></th> <th></th> <th>Deletionshin</th> <th></th>						Deletionshin	
RSE Perceived Brand Quality Positive 0.012467 Perceived Brand Innovativeness Positive 0.0038191 Perceived Brand Brand Innovativeness Positive 0.03834 Perceived Brand Brand Brengingeness Negative 0.035468 Perceived Brand Presige Positive 0.035346 Perceived Brand Cenuineness Positive 0.03503 Perceived Brand Genuineness Positive 0.00303 Perceived Brand Genuineness Positive 0.00108 Responsibility Negative 0.0014327 Perceived Brand Globalness Positive 0.014327 RC Perceived Brand Quality NS -0.014327 RC Perceived Brand Manovativeness NS -0.03665 Perceived Brand Brand Brand Manovativeness NS -0.03665 Perceived Brand Brand Presige NS -0.03661 Perceived Brand Brand Presige NS -0.028601 Perceived Brand Brand Social NS -0.012086 Perceived Brand Social NS -0.01208 Perceived Brand Soc	cs		Directional Relationship			Kelationship	
Perceived Brand Innovativeness Positive -0.038191 Perceived Brand Belongingness Negative 0.03834 Perceived Brand Belongingness Negative 0.03834 Perceived Brand Prestige Positive 0.035468 Perceived Brand Cenuineness Positive 0.03503 Perceived Brand Genuineness Positive 0.00303 Perceived Brand Social Negative 0.001058 Responsibility Negative -0.081658 Perceived Brand Globalness Positive -0.014327 RC Perceived Brand Globalness NS -0.014327 RC Perceived Brand Manovativeness NS -0.014327 Perceived Brand Dinovativeness NS -0.013665 Perceived Brand Brand Brand Manovativeness NS -0.03665 Perceived Brand Brand Brand Social NS -0.03665 Perceived Brand Brand Social NS -0.036695 Perceived Brand Social NS -0.036695 Perceived Brand Social NS -0.012498	Perceived Brand Quality		Positive	-0.012467	-0.716	NS	
Perceived Brand Belongingness Negative 0.03834 Perceived Brand Presige Positive 0.055468 Perceived Brand Cenuineness Positive 0.03503 Perceived Brand Genuineness Positive 0.03103 Perceived Brand Social Negative 0.001058 Responsibility Negative 0.001108 Perceived Brand Social Negative 0.001108 Responsibility Positive 0.0014327 Perceived Brand Quality NS -0.014327 Perceived Brand Innovativeness Negative -0.013665 Perceived Brand Brand Innovativeness NS -0.035601 Perceived Brand Brand Brand No NS -0.03665 Perceived Brand Brand Social NS -0.03665 Perceived Brand Brand Social NS -0.026601 Perceived Brand Social NS -0.02365 Perceived Brand Social NS -0.01298	Perceived Brand Innovat	iveness	Positive	-0.038191	-1.939**	Negative	
Perceived Brand Presige Positive 0.055468 Perceived Brand Genuineness Positive 0.003203 Perceived Brand Genuineness Positive 0.0036468 Perceived Brand Social Negative 0.001058 Responsibility Negative 0.001108 Perceived Brand Globalness Positive 0.001108 RC Pereived Brand Quality NS -0.014327 Pereived Brand Junovativeness Negative -0.014327 Pereived Brand Innovativeness Negative -0.036685 Pereived Brand Bran	Perceived Brand Belong	ngness	Negative	0.038834	1.803**	Positive	
Perceived Brand Genuineness Positive 0.003203 Perceived Brand Social Negative 0.001658 Responsibility Negative -0.081658 Responsibility Negative -0.01108 Perceived Brand Globalness Positive -0.001108 RC Pereved Brand Quality NS -0.014327 Pereved Brand Quality NS -0.014327 Pereved Brand Innovativeness Negative -0.0136685 Pereved Brand	Perceived Brand Prestige		Positive	0.055468	2.732***	Positive	
Perceived Brand Social Negative -0.081658 Responsibility Negative -0.081658 Responsibility Perceived Brand Globalness Positive -0.001108 RC Perceived Brand Globalness Negative -0.014327 RC Perceived Brand Quality NS -0.014327 Perceived Brand Innovativeness Negative -0.036685 Perceived Brand Preveived Brand Grouineness NS -0.03856 Perceived Brand Social NS -0.012198 -0.01218 Perceived Brand Social NS -0.01218 -0.01218	Perceived Brand Genuin	eness	Positive	0.003203	0.135	NS	
Responsibility Responsibility -0.001108 Perceived Brand Globalness Positive -0.0014327 RC Perceived Brand Quality NS -0.014327 Perceived Brand Innovativeness Negative -0.036685 Perceived Brand Brand Brand Brand Brand Brand Brand Brand Brand Preveived Brand Preveived Brand Preveived Brand Social -0.03661 Perceived Brand Social NS -0.012198 Perceived Brand Social NS -0.012198 Perceived Brand Social NS -0.012198	Perceived Brand Social		Negative	-0.081658	-2.954***	Negative	
Perceived Brand Globalness Positive -0.001108 RC Perceived Brand Quality NS -0.014327 Perceived Brand Quality NS -0.014327 Perceived Brand Innovativeness Negative -0.036685 Perceived Brand Brand Brand Brand Brand Perceived Brand Prestige NS -0.03865 Perceived Brand Prestige NS -0.03285 Perceived Brand Grentineness NS -0.012198 Perceived Brand Social NS -0.01218	Responsibility						
RC Perceived Brand Quality NS -0.014327 Perceived Brand Innovativeness Negative -0.086685 Perceived Brand Brand Brand Brand Brand Brand Brand Brand Prestige NS -0.036685 Perceived Brand Brand Brand Brand Prestige NS -0.03455 Perceived Brand Contineness NS -0.012198 Perceived Brand Social NS -0.012198	Perceived Brand Globalr	less	Positive	-0.001108	-0.055	NS	_
Perceived Brand Innovativeness Negative -0.086685 Perceived Brand Belongingness NS -0.028601 Perceived Brand Prestige NS -0.0355 Perceived Brand Prestige NS -0.0124801 Perceived Brand Chentineness NS -0.012188 Perceived Brand Social NS -0.012198 Perceived Brand Social NS -0.012096	Perceived Brand Quality		NS	-0.014327	-0.800	NS	
Perceived Brand Belongingness NS -0.028601 Perceived Brand Prestige NS 0.003285 Perceived Brand Genuineness NS -0.012198 Perceived Brand Social NS -0.020209	Perceived Brand Innovat	iveness	Negative	-0.086685	-4.272***	Negative	-
Perceived Brand Prestige NS 0.003285 Perceived Brand Genuineness NS -0.012198 Perceived Brand Social NS 0.00209	Perceived Brand Belong	ngness	NS	-0.028601	-1.304	NS	-
Perceived Brand Genuineness NS -0.012198 Perceived Brand Social NS 0.020209	Perceived Brand Prestige		NS	0.003285	0.156	NS	-
Perceived Brand Social NS 0.020209	Perceived Brand Genuin	eness	NS	-0.012198	-0.497	NS	
	Perceived Brand Social		NS	0.020209	0.716	NS	
Responsibility	Responsibility		11110	ibeo	TAP Sold	pers	
Perceived Brand Globalness Negative -0.031748	Perceived Brand Globali	less	Negative	-0.031748	-1.543*	Negative	-

***p < .01 **p < .05 *p < .10



Results show that age acts as a moderator only for the relationship between perceived brand globalness and the likelihood of global brand ownership (p < .02). Contrary to the hypothesis, this relationship was positive; i.e., the effect of perceived brand globalness on the likelihood of global brand ownership was stronger for older consumers than it was for younger consumers. [H₁₅ is not supported.] Older and younger consumers did not seem to differ in terms of the effects of other brand associations on their purchasing decisions. [H₉ through H₁₄ are not supported.] One interesting point to note is that although the direct effect of globalness association on the likelihood of GBO was not significant, this effect was significant for older consumers.

When the moderation effect of income was analyzed, significant differences were seen in the impact of perceived brand innovativeness, prestige, and genuineness on the likelihood of GBO for higher vs. lower income consumers. Ceteris paribus, genuineness (p < .02) and prestige (p<.07) associations of global brands had more impact on the likelihood of GBO for consumers with higher income than for consumers with lower income. [H₂₁ and H₂₂ are supported.] Note that while prestige association had a significantly negative direct effect on the likelihood of GBO, this effect was significantly positive for higher income consumers. Interestingly, innovativeness association had less impact on the likelihood of GBO for higher income consumers than for lower income consumers (p < .10). [H₁₉ is not supported.] Other brand associations tested did not have significantly different effects for higher income vs. lower income consumers on their purchasing behaviors. [H₁₈, H₂₀, H₂₃ and H₂₄ are not supported.]

Belongingness (p < .04) and prestige (p < .01) associations of global brands had more effect on the likelihood of GBO for higher RSE consumers than lower RSE

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consumers. [H₂₉ is not supported; H₃₀ is supported.] Higher effect of prestige on the likelihood of GBO was consistent with the hypothesis; however, the higher effect of belongingness on the likelihood of GBO was surprising. Belongingness association is related with identification with a group, which aligns more with the dominant values of self-transcendence. One explanation can be that higher RSE consumers may see belongingness as a way of enhancing their own self, rather than replacing it. It is worth noting that the direct effect of belongingness association on the likelihood of GBO was not significant. This association seems to be only effective for higher RSE consumers.

Social responsibility (p < .01) and innovativeness (p < .03) associations had more effect on the likelihood of GBO for lower RSE consumers than for higher RSE consumers. [H₂₈ is not supported; H₃₂ is supported.] This was expected for social responsibility association, but the higher effect of innovativeness on the likelihood of GBO for lower RSE consumers was contrary to the hypothesis. One explanation may be that lower RSE consumers may see innovative brands as a means to share with others and enhance the welfare of others, and thus value the effect of innovativeness association in their purchasing decisions more than do higher RSE consumers. The effects of other brand associations on the likelihood of global brand ownership were not found significantly different for higher RSE vs. lower RSE consumers. [H₂₇ H₃₁, and H₃₃ are not supported.]

Finally, innovativeness (p < .01) and globalness (p < .07) associations of global brands had less effect on the likelihood of GBO for higher RC consumers than lower RC consumers. [H₃₇ and H₄₂ are supported.] These are in line with the hypothesized effects. As expected, the effects of other brand associations on the likelihood of global brand

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ownership were not found significantly different for higher RC vs. lower RC consumers.

 $[\rm H_{36},\,\rm H_{38},\,\rm H_{39},\,\rm H_{40}$ and $\rm H_{41}$ are supported.]

Table 4.4 shows the hypothesized moderation effects of Perceived Brand Globalness (PBG) on the relationship between global brand associations and the likelihood of global brand ownership, together with the analysis results.

 Table 4.4 – Moderating Effects of Perceived Brand Globalness (PBG)

Global Brand	Hypothesized	Coefficient	t-ratio	Resultant
Associations	Directional			Relationship
	Relationship			
	w/PBG			
PBG*Perceived Brand	Positive	-0.071317	-1.020	NS
Quality				
PBG*Perceived Brand	Positive	0.015328	0.202	NS
Innovativeness				
PBG*Perceived Brand	Positive	-0.051300	-0.630	NS
Belongingness				
PBG*Perceived Brand	Positive	0.133255	1.728**	Positive
Prestige				
PBG*Perceived Brand	Positive	0.191394	2.158**	Positive
Genuineness				
PBG*Perceived Brand	Positive	0.127033	1.308*	Positive
Social Responsibility				

*** p < .01 ** p < .05 * p < .10

It was hypothesized that globalness association of brands would intensify the strength of the relationships between each of the other brand associations and the likelihood of global brand ownership. The results show that the interaction effect was significant only for prestige (p < .05), genuineness (p < .02), and social responsibility (p < .10) associations. [H₈ is partially supported.] One interesting finding to note is that, although the direct effect of prestige on the likelihood of global brand ownership was negative, the interaction effect of prestige and globalness was positive.

4.2.3 Random Effects

The details on the result of variance components analysis were already presented in Table 3.5. Table 4.5 presents the results once more.

Random Effect	Effect Standard Variance			Chi-square	P-value
	Deviation	Component	df		
INTRCPT1, U0	0.25994	0.06757	30	210.02038	0.000
INCOME slope, U8	0.04048	0.00164	30	54.67346	0.004
AGE slope, U9	0.04362	0.00190	30	42.94462	0.059
RSE slope, U10	0.04115	0.00169	30	40.87888	0.089
RC slope, U11	0.01526	0.00023	30	27.61276	>.500

 Table 4.5 – Random Effects

The results show that there is significant variability between countries in terms of average log-odds of GBO, as well as the direct effect of age, income, and RSE on the likelihood of GBO. The relationship between RC and the likelihood of GBO did not vary across countries, and it is treated as fixed (non-varying) in the subsequent analyses. Thus H_{44} is rejected right away. Note that previous analyses showed a significant positive effect of RC on the likelihood of GBO. Lack of variation of this relationship across countries hints that there is a relatively robust segment of conservative consumers who

buy global brands more than do consumers who are open to change. The relationship between RC and the likelihood of GBO across countries is shown in Figure 4.1.⁵





Once the group-variant relationships were identified, it was tested whether their variability could be explained by the country-level variable: GDP per capita. Table 4.6 shows the results of this test of cross-level interactions; the interactions of the consumer-level variables Age, Income, and RSE with the country-level variable GDP per capita.

⁵ In the model graphs, averaged lower-upper quartiles are used for the range of GDP per capita.

Table 4.6 – Cross-level Interactions

Interaction w/GDP per Capita	Coefficient	t-ratio	Results
GDPCapita*Intercept	0.004895	0.987	NS
GDPCapita*Age	-0.000614	-0.476	NS
GDPCapita*Income	-0.001764	-1.539*	Negative
GDPCapita*RSE	-0.001994	-1.863**	Negative
***p < .01 $**p < .05$ $*p < .10$			

Note that there was significant variability between countries on the average odds of GBO and the effects of age, income, and RSE on the likelihood of GBO (see Table 4.5). The differences between countries in the relationship between age and the likelihood of GBO did not seem to be a function of the level of economic development. [H₁₇ is not supported.] GDP per capita is significant in explaining the variability of the relationships between income and the likelihood of GBO (p < .07), and RSE and the likelihood of GBO (p < .04). The final estimation of variance components–after GDP per capita is included in the model–is provided in Table 4.7.

Random Effect	Standard	Variance		Chi-square	P-value
	Deviation	Component	df		
INTRCPT1, U0	0.26328	0.06931	29	190.18740	0.000
INCOME slope, U8	0.03926	0.00154	29	50.04304	0.009
AGE slope, U9	0.04716	0.00222	29	46.83109	0.019
RSE slope, U10	0.03789	0.00144	29	38.32455	0.115

 Table 4.7 – Final Estimation of Variance Components

The variation in the relationship between RSE and the likelihood of GBO was not significant after GDP per capita is included, meaning the variable added explained all the significant variation between countries. However, there was still unexplained variability left in the relationships between age and the likelihood of GBO and between income and the likelihood of GBO. This hints at the existence of other variables that are not included in the model and that can explain the variation in the relationships. The relationship between age and the likelihood of GBO across countries is shown in Figure 4.2.



Figure 4.2 – Relationship between Age and the likelihood of GBO across Countries

Note that the direct effect of RSE was nonsignificant. The significant negative interaction effect of RSE and GDP per capita implies that the effect of RSE on the likelihood of GBO is higher in less-developed countries than it is in more-developed countries. [H₃₅ is supported.] In fact, as can be seen from Figure 4.3, as RSE increases,



consumers in less-developed countries appear to be more likely to buy global brands than consumers in more-developed countries; and as RSE increases in more-developed countries, the likelihood of GBO appears to decrease. Indeed, computation reveals that the odds of global brand ownership decrease by 0.864 when RSE score and GDP per capita are two standard deviations higher than the average, whereas they increase by 1.158 when RSE score is two standard deviations higher and GDP per capita is two standard deviations lower than the average (see Table 4.8 for computation method).

Figure 4.3 – Relationship between RSE and the likelihood of GBO across Countries



The significant negative interaction effect between income and the likelihood of GBO shows that although there is a positive relationship between income and the likelihood of GBO in a country with an average level of development, this relationship is stronger for less-developed countries. [H₂₆ is supported.] In fact, as can be seen from Figure 4.4, as

income increases, consumers in less-developed countries appear to be more likely to buy global brands than consumers in more-developed countries. Indeed, computation reveals that the odds of global brand ownership decrease by 0.86 when income and GDP per capita are two standard deviations higher than the average, whereas they increase by 1.19 when income is two standard deviations higher and GDP per capita is two standard deviations lower than the average (see Table 4.8 for computation method).

Figure 4.4 – Relationship between Income and the likelihood of GBO across Countries



4.3 Interpretation of the Estimated Coefficients

So far, the presentation of the results has been done in terms of their directionality (positive association vs. negative association) and significance. This section discusses the interpretation of the magnitude of the coefficients.

In HGLM, the effects of independent variables on the outcome is usually interpreted using the odds ratio. The coefficients provided in the program output give the log-odds (η_{ij}). Predicted log-odds is converted to odds ratio by taking the exp (η_{ij}). It is converted to a predicted probability by the formula in Equation 3.13.

It should be noted that the logit model is linear and additive for the log-odds, but multiplicative for the odds. For example, 1 unit increase in AGE changes the logit by β_9 and multiplies the odds by $e^{\beta 9}$. The interpretation for AGE, a continuous variable, is as follows: When AGE is increased by c units, the odds of global brand ownership increase by a factor of $e^{c\beta 9}$, controlling for other predictors. If β_9 is 2, increasing AGE by 1 unit increases the odds by a factor of e^2 . The interpretation of the effect of a dummy variable is different. For example, the effect of QUALITY can be interpreted as the odds of global brand ownership for a quality brand are $e^{\beta 1}$ times greater than the odds for a non-quality brand, controlling for other predictors, where β_1 is the estimated effect for QUALITY.

The interpretation of coefficients is done following the ANOVA-like procedure suggested by Subedi (2005).

The main effects are calculated by taking the exponential of the estimated parameter coefficients after multiplying it with a constant, c, where c is two standard

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deviations of the respective continuous variable, e.g., AGE in the example below. The constant "c" is selected as 1 for dichotomous variables.

$$Main effect_{AGE} = exp (c_{AGE} * \gamma_{90})$$
[4.1]

Cross-level interaction effects are calculated by taking the exponential of the estimated parameter coefficients after multiplying with two constants, where c's are the two standard deviations associated with the respective variables, e.g., AGE and GDP in the example below. Again, the constant "c" is selected as 1 for dichotomous variables.

Interaction effect_{AGE*GDP} = exp (
$$c_{AGE} * c_{GDP} * \gamma_{91}$$
) [4.2]

The interpretation of the significant model coefficients is provided in Table 4.8.

It must be kept in mind that the reference brand is an attribute-free global brand, a brand that has a value of zero on all the brand-level variables. A reference consumer is a consumer that has average age, income, RSE and RC scores. A reference country is a country that has an average GDP per capita.

Thus, the coefficients for the direct effects of brand associations show the change in odds of brand ownership when the brand is perceived to have the associated attribute versus when it is perceived not to have the associated attribute, all else being equal (e.g., for the quality association, the log-odds of 0.181 translates into an odds ratio of exp (0.181) = 1.20, meaning the expected odds of ownership of a high quality global brand are 1.20 times the odds of ownership of an otherwise-similar global brand which is not perceived as high quality).

The interaction effects are calculated in accordance with Equation 4.2. For example, income is associated with higher likelihood of global brand ownership, for a reference brand in a reference country, ceteris paribus. Two standard deviations difference in income is associated with a difference in the log-odds of ownership of 4.12*0.06=0.219 or a relative odds of exp(0.219)=1.245. However, the interaction effect of income and GDP per capita is negative. For a reference global brand, there is a decrease in the odds ratio by a factor of exp(4.12*20.68*-0.002)=0.86 due to two standard deviations increase in income that is associated with two standard deviations increase in GDP per capita. This means the odds for global brand ownership of a reference brand are 0.86 times lower for consumers with two standard deviations aboveaverage income in countries with two standard deviations above-average GDP per capita than average income consumers in average GDP per capita countries.

Likewise, the effect of e.g., prestige association of a global brand for a consumer that has two standard deviations higher income is a factor increase of exp(4.12*1*0.025)=1.107 in the odds ratio. This means that the odds of global brand ownership are 1.107 times higher for consumers with two standard deviations aboveaverage income when the brand is prestigious than the base-line case where an average income consumer and a reference brand is considered.

The graphical representations of significant interaction effects are provided in Figure 4.5.

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Coefficients
: Model
Significant
4.8 -
Table

Significant Model Coeffic	cients			
		L		
		(log-odds)	p-value	Interpretation
				Expected odds of global brand ownership for a reference brand
				associated with a reference consumer and a reference country are
Intercept	G00	-1.137118	0.000	exp(-1.137)=0.32.
				Global brands' perceived "quality" is associated with higher log-
				odds of ownership, holding constant the other predictors in the
				model. The expected odds of ownership of a high quality global
				brand are exp(0.181)=1.20 times the odds of ownership of an
				otherwise-similar global brand which is not perceived as high
Quality	G10	0.181040	0.000	quality.
				Global brands' perceived "innovativeness" is associated with
				higher log-odds of ownership, holding constant the other
				predictors in the model. The expected odds of ownership of an
				innovative global brand are exp(0.261)=1.30 times the odds of
				ownership of an otherwise-similar global brand which is not
Innovativeness	G20	0.261474	0.000	perceived as innovative.

.

		L		
Table 4.8, cont.		(log-odds)	p-value	Interpretation
				Global brands' perceived "prestige" is associated with lower
				log-odds of ownership, holding constant the other predictors in
				the model. The expected odds of ownership of a prestigious
				global brand are exp(-0.447)=0.64 times the odds of ownership
				of an otherwise-similar global brand which does not have the
Prestige	G40	-0.446787	0.000	prestige association.
				Global brands' perceived "genuineness" is associated with
				higher log-odds of ownership, holding constant the other
				predictors in the model. The expected odds of ownership of a
				genuine global brand are exp(0.229)=1.26 times the odds of
				ownership of an otherwise-similar brand which is not perceived
Genuineness	G60	0.228780	0.000	as genuine.
				Perceived "Social responsibility" of a global brand is associated
				with higher log-odds of global brand ownership. The expected
				odds of ownership of a socially responsible global brand are
				exp(0.103)=1.11 times the odds of ownership of an otherwise-
				similar global brand which is not perceived as socially
Social Responsibility	G70	0.103335	0.049	responsible.

		٤		
Table 4.8, cont.		(log-odds)	p-value	Interpretation
				Income is associated with higher log-odds of global brand
				ownership, ceteris paribus. Two standard deviations difference
				in income is associated with a difference in the log-odds of
				ownership of 4.12*0.06=0.219 or a relative odds of
Income	G80	0.053120	0.001	exp(0.219)=1.245.
				For a reference global brand, there is a decrease in the odds ratio
				by a factor of exp(4.12*20.68*-0.002)=0.86 due to two standard
				deviations increase in income that is associated with two
Income*GDPCapita	G81	-0.001764	0.067	standard deviations increase in GDP per capita.
				Age is associated with lower log-odds of global brand
				ownership, ceteris paribus. Two standard deviations difference
				in age is associated with a difference in the log-odds of
				ownership of 2.9*(-0.08)=-0.221 or a relative odds of exp(-
Age	G90	-0.076071	0.000	0.221)=0.802.

		L		
Table 4.8, cont.		(log-odds)	p-value	Interpretation
				For a reference global brand, there is a decrease in the odds ratio
				by a factor of exp(3.54*20.68*-0.002)=0.864 due to two
				standard deviations increase in RSE that is associated with two
RSE*GDPCapita	G101	-0.001994	0.036	standard deviations increase in GDP per capita.
				RC is associated with higher log-odds of global brand
				ownership, ceteris paribus. Two standard deviations difference
				in RC is associated with a difference in the log-odds of
				ownership of 3.54*0.04=0.148 or a relative odds of
RC	G110	0.041719	0.001	exp(0.148)=1.159.
				The effect of perceived "innovativeness" of a global brand for a
				consumer that has two standard deviations higher income is a
Income*Innovativeness	G130	-0.021244	0.097	factor decrease of exp(4.12*1*-0.021)=0.916 in the odds ratio.
				The effect of perceived "prestige" of a global brand for a
				consumer that has two standard deviations higher income is a
Income*Prestige	G150	0.024714	0.063	factor increase of exp(4.12*1*0.025)=1.107 in the odds ratio.
				The effect of perceived "genuineness" of a global brand for a
				consumer that has two standard deviations higher income is a
Income*Genuineness	G170	0.041982	0.012	factor increase of exp(4.12*1*0.042)=1.189 in the odds ratio.

		L		
Table 4.8, cont.		(log-odds)	p-value	Interpretation
				The effect of perceived "globalness" of a global brand for a
				consumer that has two standard deviations higher age is a factor
Age*Globalness	G230	0.054279	0.018	increase of $exp(2.9*1*0.054)=1.170$ in the odds ratio.
				The effect of perceived "innovativeness" of a global brand for a
				consumer that has two standard deviations higher RSE a
				decrease in the odds ratio by a factor of exp(3.54*1*-
RSE*Innovativeness	G270	-0.038191	0.026	0.038)=0.874.
				The effect of perceived "belongingness" of a global brand for a
				consumer that has two standard deviations higher RSE is a factor
RSE*Belongingness	G280	0.038834	0.036	increase of exp(3.54*1*0.039)=1.147 in the odds ratio.
				The effect of perceived "prestige" of a global brand for a
				consumer that has two standard deviations higher RSE is a factor
RSE*Prestige	G290	0.055468	0.004	increase of $exp(3.54*1*0.055)=1.217$ in the odds ratio.
				The effect of perceived "social responsibility" of a global brand
RSE*Social				for a consumer that has two standard deviations higher RSE is a
Responsibility	G320	-0.081658	0.002	factor decrease of exp(3.54*1*(-0.082))=0.749 in the odds ratio.

		F		
Table 4.8, cont.		(log-odds)	p-value	Interpretation
				The effect of perceived "innovativeness" of a global brand for a
				consumer that has two standard deviations higher RC is a factor
RC*Innovativeness	G340	-0.086685	0.000	decrease of $exp(3.54*1*(-0.087))=0.736$ in the odds ratio.
				The effect of perceived "globalness" of a global brand for a
				consumer that has two standard deviations higher RC is a factor
RC*Globalness	G370	-0.031748	0.062	decrease of $exp(3.54*1*(-0.032))=0.894$ in the odds ratio.
				The effect of perceived "globalness" and perceived "prestige"
				associations of a global brand to co-exist is a factor increase of
Globalness*Prestige	G430	0.133255	0.042	exp(1*1*0.133)=1.143 in the odds ratio.
				The effect of perceived "globalness" and perceived
				"genuineness" associations of a global brand to co-exist is a
Globalness*Genuineness	G440	0.191394	0.016	factor increase of exp(1*1*0.191)=1.211 in the odds ratio.
				The effect of perceived "globalness" and perceived "social
Globalness*Social				responsibility" associations of a global brand to co-exist is a
Responsibility	G450	0.127033	0.096	factor increase of exp(1*1*0.127)=1.135 in the odds ratio.







⁶ In the model graphs, averaged lower-upper quartiles are used for the range of z-axis.











Figure 4.5, cont.








Figure 4.5, cont.





Figure 4.5, cont.



Chapter 5

DISCUSSION OF CONTRIBUTIONS, FUTURE DIRECTIONS AND LIMITATIONS

5.1 Discussion of Contributions and Managerial Implications

Although marketing scholars have been interested in different aspects of global branding and have studied a wide variety of topics, only a handful of studies empirically investigated what values consumers perceive to be getting from global brands. This study presents a framework which analyzes global brand perceptions of consumers within the broader development context of these perceptions. First, it introduces a contingency perspective to the issue and models the effects of specific associations as a function of consumer characteristics. Second, it empirically investigates to what extent different brand associations vary in their effects on the likelihood of global brand ownership for consumers that have different characteristics. Third, it tests the notion that there is a segment of consumers who find global brands appealing and identifies their demographic and psychographic characteristics. Fourth, it examines the robustness of this segment across countries by looking at the variations in the dominant characteristics of these consumers across countries. Fifth, it illustrates use of multi-level modeling techniques which are especially important when the data structure is nested. Both theoretical foundations and practical applications of the method are presented. Sixth, by using data coming from more than 31,000 consumers from 31 countries, it contributes to the empirical generalizations in global branding. In summary this research finds an answer to

one question which lies underneath the debate between standardization vs. adaptation proponents since the 1920s: what works best for global brands under what circumstances?

The results of the analyses are interesting. Six global brand associations identified by previous research are empirically tested in this research; quality, innovativeness, belongingness, prestige, genuineness, and social responsibility. Furthermore, globalness is included as a separate association and the interaction of globalness with other associations were tested. The results show that quality, innovativeness, genuineness, and social responsibility are indeed positively related to the likelihood of global brand ownership. However, neither belongingness nor globalness had a significant direct effect on the likelihood of global brand ownership. Many researchers have suggested that consumers choose global brands because they want to be part of a special global consumer culture (Alden et al. 1999), or because of the psychological benefits of globalness per se (Steenkamp et al. 2003). Steenkamp et al. (2003) called this "belongingness pathway," and indeed their quantitative research results showed that this path was nonsignificant. However, the anecdotal evidence from qualitative research studies (e.g., Anderson and Miles 1999; Holt et al. 2004b) showed that consumers aspire to belong to and to be part of something bigger by using global brands. In fact, Alden, Steenkamp, and Batra (1999) found that corporations take advantage of image-enhancing effects by positioning brands as "global" in their communications, thus using "global consumer culture positioning." As far as consumer behavior toward global brands is concerned, the results of this dissertation support Steenkamp et al. (2003) and the premise that global consumer culture is still in its infancy (Samli 1995).

One counter-intuitive significant result is the negative relationship between the prestige association and the likelihood of GBO for a reference consumer (a consumer with an average income, age, RSE, and RC scores from a country that has an average GDP per capita), when all other brand associations are controlled. This is contrary to previous studies which found a positive association between prestige and purchase likelihood (Holt et al. 2004b; Steenkamp et al. 2003). The study results show that the effect of prestige on the likelihood of GBO is stronger for higher income consumers than lower income consumers and it is stronger for higher RSE consumers than lower RSE consumers. The interaction effect of globalness association and prestige is also positive, i.e., globalness association has a positive effect on the relationship between prestige and the likelihood of global brand ownership. Higher income or higher RSE consumers appear to be good target segments for the global brands to emphasize and communicate prestige association. More research on this topic (e.g., examining the relationship between prestige and brand equity) may provide more insight into the issue of why prestige has a negative effect on the likelihood of global brand ownership for other consumers.

The effect of quality association of global brands on the likelihood of global brand ownership was not found to be significantly different for consumers from different ages, from different income levels, and having different value structures. High quality is an association that global brand marketers should emphasize regardless of the profile of their target consumers.

When the direct effects of age, income, RSE, and RC are tested, the dominant characteristics of global brand-prone consumers are identified. Younger consumers,

higher income consumers, and consumers with higher RC scores are more likely to buy global brands systematically. Creating global brands for higher income or younger consumers may be a profitable strategy for global marketers.

In fact, the negative effect of age and positive effect of income on the likelihood of global brand ownership are in line with the expectations, but the positive effect of RC is not consistent with the hypothesis. Higher RC consumers were thought to be more likely to resist change and global brands, which are symbols of modernity and change. Indeed, when these consumers perceive a global brand as global, they are less likely to buy it compared to the brands that are not perceived as global. This implies that higher RC consumers buy global brands without considering-or ignoring-their globalness. Indeed, Usunier (2000) talks about "self-contradicting individuals" who drink Coke while complaining about capitalization, or the Americanization of their society. These consumers may not be thinking about their brand as "global" or symbols of globalism, since admitting otherwise would create dissonance. It is suggested that individuals who hold oppositional values experience values conflict in the form of psychological tension, which would decrease their welfare (Burroughs and Rindfleisch 2002). This notion can be linked to classic cognitive consistency theories which state individuals are engaged in a constant psychological struggle to align cognitions in a consistent manner in order to decrease tension (Burroughs and Rindfleisch 2002). Thus, it can be argued that as a way of coping with the dissonance, consumers may be ignoring the globalness of these brands as a way to let themselves consume these brands. Therefore, when marketing global brands to conservative consumers, downplaying the globalness association may be a good strategy.

When the robustness of the global brand-prone consumer characteristics across countries was tested, it was seen that there was no significant variability across countries in terms of the relationship between RC and the likelihood of GBO. This is very interesting, since it shows that there is a robust segment of higher RC consumers across countries who consistently buy global brands in general. This segment presents an opportunity for marketing managers to target. Another association of global brands that is negatively related to the likelihood of GBO for higher RC consumers is innovativeness. The negative effect of innovativeness association is in line with the findings of past research (e.g., Steenkamp et al. 1999) and the negative effect of globalness association, as explained above, is expected by the values theory. Quality can be a common denominator and may be important to emphasize for these consumers.

Although there is significant variability across countries in the relationship between age and the likelihood of GBO, the economic development level of countries (GDP per capita) does not explain this variability. Past research indicated that in most countries, the correlation between per capita income and modernity is quite high (Johansson and Moinpour 1977; Roth 1995a; Sethi 1971). Note that convergence theory proposes that along with modernization and industrialization, nations are becoming increasingly alike (Williamson and Fleming 1996). The study results do not seem to support convergence theory, as applied to consumer behavior toward global brands, and it is in line with the arguments of convergence theory opponents (e.g., de Mooij 2004; de Mooij 2003).

The relationship between income and the likelihood of GBO shows significant variation across countries as well. GDP per capita can explain this variation partially.

Note that there was a positive relationship between income and the likelihood of GBO in a country with an average level of development. The significant negative interaction effect between consumer income and GDP per capita shows that consumers in lessdeveloped countries are more sensitive to changes in income than consumers in moredeveloped countries in their purchasing decisions of global brands. Thus, the effect of income on the likelihood of GBO is stronger in less-developed countries than in moredeveloped countries, i.e., the marginal effect of income is higher in less-developed countries than in more-developed countries. Consumers in less-developed countries seem to be spending more on global brands as their income levels increase than consumers in more-developed countries. Likewise, the drop in spending is relatively higher than moredeveloped country consumers when the income levels decrease. Global brand managers should be cautious in income fluctuations in the less-developed countries since this may cause relatively higher fluctuations in consumer demand toward their products than what they used to observe in more-developed countries.

The inspection of Figure 4.4 also suggests that higher income consumers in lessdeveloped countries may be more prone to global brands than higher income consumers in more-developed countries, i.e., the average likelihood of GBO appears to be higher for higher income consumers in less-developed countries than higher income consumers in more-developed countries. Global marketing managers may have an opportunity in that segment; targeting higher income individuals in less-developed countries may be a rewarding strategy.

Although the direct effect of RSE was nonsignificant, the significant negative interaction effect of RSE and GDP per capita shows that the effect of RSE is stronger in

less-developed countries than it is in more-developed countries, i.e., the marginal effect of RSE is higher in less-developed countries than in more-developed countries.

The inspection of Figure 4.3 also suggests that higher RSE consumers in lessdeveloped countries may be more prone to global brands than higher RSE consumers in more-developed countries, i.e., the average likelihood of GBO appears to be higher for higher RSE consumers in less-developed countries than higher RSE consumers in moredeveloped countries. This may be explained by the demonstration effect, a phenomenon where poorer consumers buy symbolic and sensory products to identify with consumption societies (Keyfitz 1982; Nurske 1953). This effect was used to also explain why consumers in poorer countries buy hedonic goods (see Roth 1995a). In fact, the relationship between RSE and the likelihood of GBO appears to be almost flat for moredeveloped countries, whereas it is positive for less-developed countries. Consumers in less-developed countries may be using global brands as a way of "enhancing" the self, whereas more-developed country consumers may not see such an enhancement value in using them. Therefore, emphasizing self-enhancing values (e.g., power, achievement, and hedonism) in the communication strategy of global brands may be effective for higher RSE consumers in less-developed countries.

Indeed, on average, prestige and belongingness associations have stronger effects on the likelihood of GBO for higher RSE consumers than for lower RSE consumers. These two associations seem to be the means for higher RSE consumers to promote their personal interests. Prestige is an association that is expected; belongingness association shows that higher RSE consumers see being part of a group connected via the global brand as a way to enhance themselves. Therefore, these two global brand associations

should especially be emphasized when targeting higher RSE consumers. Innovativeness and social responsibility have more effects on the likelihood of GBO for lower RSE consumers than for higher RSE consumers, and should be emphasized for these types of consumers.

The effect of different brand associations on purchase decisions does not seem to vary for consumers that belong to different age groups. The only association that has a significantly different effect on the likelihood of GBO for older vs. younger consumers is globalness; for older consumers globalness seems to be a "summary" attribute more than it is for younger consumers. When the differences in the income groups are considered, prestige and genuineness associations appear to have more effect on the likelihood of GBO for higher income consumers than for lower income consumers. If the brand origin is a country famous for the product category of the brand, the emphasis on this association may pay off. As mentioned before, prestige has a positive impact on the likelihood of GBO for higher income consumers as well, and should be emphasized for these consumers.

A counter-intuitive result is the negative interaction effect of income and innovativeness on the likelihood of GBO; perceived brand innovativeness has more effect on the likelihood of GBO for lower income consumers than higher income consumers, all other associations being controlled for. Steenkamp et al. (1999) found no significant relationship between income and consumer innovativeness, although the sign of the estimated coefficient of income in their model was also negative. The significance level of this coefficient in this study is not great either (p = .097), but it is still significant and interesting. More research is needed to understand the reason of this anomaly.

Lastly, three associations which have positive interaction effects on the likelihood of GBO when they interact with globalness are: prestige, genuineness, and social responsibility.

Brown and Dacin (1997, p. 68) quoted the concerns of one manager at a major American retailer:

"We do all these good things ... we build buildings, give money away ... but we don't know if we get anything out of it."

The results of this research suggest that as far as consumer behavior toward global brands are concerned, they may be getting something out of it. Social responsibility and globalness, prestige and globalness, and genuineness and globalness all have positive impact on the likelihood of GBO. An investigation of the target consumer characteristics may shed some light on the final managerial decision as to whether emphasizing "globalness" would be desirable or not.

5.2 Limitations and Future Research Directions

Limitations of this study should be addressed. First, the variables used to measure brand associations are dichotomous, as well as the model outcome variable, global brand ownership. This limits the variance in the relationships (e.g., creates a restrictive range problem). Second, because of the increased complexity associated with introduction of random variables to the model, the variation of the relationships between global brand associations and consumer characteristics across countries were not investigated in this study. Future researchers may want to study to what extent the effects of brand associations change for different consumers across countries, by employing perhaps a simpler model with fewer associations. Third, some of the findings of this research are counter-intuitive; e.g., the direct negative effect of prestige on the likelihood of global brand ownership and the positive interaction between age and globalness association. More research should be carried out to understand the reasons. Fourth, the outcome variable employed in this model is a behavioral variable, global brand ownership. It would be very interesting to employ an attitudinal variable (e.g., global brand equity) and compare and contrast the differences. This may shed some light on some of the counterintuitive results found. Fifth, this study investigates the consumer-side of global branding and examines consumer perceptions. Other research studies that take the company-side and link how global brands' actual efforts (e.g., branding investments) transmute into consumer perceptions would be extremely interesting. Sixth, related with the last point made, this study shows the relationship between consumer perceptions and consumer purchase behavior for different consumers. It does not show the effect of proposed changes (e.g., emphasizing one association more for certain consumers) on the cost structure of the company. A cost and benefit analysis should be carried out to understand to what degree the benefits from creating new communication programs would outweigh the costs associated with it.

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