



Towards an integrative framework of brand country of origin recognition determinants

A cross-classified hierarchical model

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Abstract

Purpose – The purpose of this paper is to propose a framework integrating the types and levels of the determinants of brand country of origin (CO) recognition and to provide evidence on internet users' brand CO recognition rates, using a sample of multi-regional and global brands from a variety of product categories and countries.

Design/methodology/approach – The authors integrate “level-1” consumer and brand characteristics and “level-2” product category and country effects in a single framework. Data obtained through an original on-line survey hosted by Yahoo provide the basis for the empirical analysis. Seven hypotheses are tested using a two-level cross-classified random-effect model (HCM2).

Findings – It is found that: education is positively related with brand CO recognition; experience with brands is positively related with brand CO recognition; integration between the consumer and the country of a foreign brand is positively related with brand CO recognition; internet users' classification performance is significantly better for domestic than for foreign brands; brand-name congruence with true brand origin is positively related with brand CO recognition; brand equity explains brand CO recognition; and product categories with higher consumer involvement enhance brand CO recognition. Brand CO recognition performance by internet users is in line with classification performance rates reported in other studies dealing with well-known and global brands.

Practical implications – Managers would benefit from considering product category and country aspects of their most valuable brands. Policy makers should encourage firms to promote a clear association between brands and countries (when these countries have a positive image) and discriminate between high and low involvement product categories.

Originality/value – The paper contributes to the brand CO awareness literature by integrating consumer and brand characteristics in a theoretical model, and identifying level-2 product category features and CO effects previously disregarded in brand CO recognition frameworks. In addition, the study positively contrasts with previous research by providing empirical evidence on brand CO recognition from the largest set of global brands (109), countries of origin (19) and product categories (15) ever investigated.

Keywords Brand awareness, Country of origin, Brand CO recognition, Cross-classified hierarchical model, International marketing

Paper type Research paper



1. Introduction

Country of origin (CO) is one of the intangible attributes habitually used by consumers as an extrinsic cue (Al-Sulaiti and Baker, 1998) in the evaluation of products. The CO literature has consistently reported biases toward non-domestic products due to CO effects (Bilkey and Nes, 1982). According to Samiee (1994, p. 580), "The implied rationale behind the close scrutiny of the country-of-origin issue is its utility as a predictor of customer attitudes and subsequent choice behavior." In other words, the relevance of CO relates to the fact that favorable perceptions of a particular country lead to favorable attitudes toward its products and brands (e.g. Leclerc *et al.*, 1994; Gurhan-Canli and Maheswaran, 2000; Ahmed *et al.*, 2002) which, in turn, influence consumers' purchasing intentions (Tse *et al.*, 1996; Ahmed *et al.*, 2002; Wang and Yang, 2008).

The intersection of CO with brand recognition provides the core focus of this paper: brand CO recognition, a topic that has only started to attract academic attention in the last ten years (e.g. Jin *et al.*, 2006). Brand CO recognition, particularly its different types and levels of antecedents, can be considered a relevant and interesting object of research from at least two interrelated perspectives. On the one hand, identification of the types and levels of brand CO recognition determinants could help brand managers to make more effective use of the variables within their control to associate (or disassociate!) brands with (from) their countries of origin. Indeed, consumers attitudes toward a specific brand "can be substantially changed, either favorably or unfavorably, through the COO image of the brand, which has an effect on influencing the brand preference of the consumer" (Kinra, 2006, p. 25). Proper management of brand CO can therefore be expected to have a tremendous impact on brand and product performance in foreign markets, given the effects of CO on consumer attitudes and behavior.

On the other hand, there is continuing debate on the extent of brand CO recognition among consumers and, therefore, on the ultimate impact of CO on consumer behavior toward branded products. In this light, recent studies on brand CO recognition accuracy have shown consumers' knowledge of brand origin to be limited (e.g. Samiee *et al.*, 2005) while the literature on CO effects has generally revealed that the CO cue influences consumers' purchase intentions (e.g. Baker and Michie, 1995). Confirmation of the first of these findings would have strong implications for academics, managers and public policy makers: if consumers fail to associate most brands with any CO, country image will have a limited impact on their attitudes and purchase behavior. In other words, "[...] a consumers' perceived CO image is likely to influence the perceptions of a brand from that country, only if the consumer is aware of the brand's CO" (Paswan and Sharma, 2004, p. 145).

Close scrutiny of existing studies on brand CO recognition and its determinants reveals two major gaps in the research. First, despite the remarkable interest aroused by this topic and the advances that have been made, scholars have yet to establish a comprehensive framework integrating the different types and levels of the determinants involved in brand CO recognition. Indeed, most of the previous research has been conducted at the consumer level (e.g. Jin *et al.*, 2006) and very little at the brand level (e.g. Zhuang *et al.*, 2008), while the integration of both levels has been systematically neglected, as have the product category and country level-2 determinants. Second, the empirical evidence on brand CO recognition and its determinants is limited and the findings often contradictory. The topic therefore invites further enquiry to complement and contextualize existing insights, by focussing on

multi-regional and global brands (Townsend *et al.*, 2009), enlarging the set of brands, product categories, and origins considered and paying attention to specific groups of consumers such as, internet users.

These two research gaps provide the rationale for the two main objectives of our study: first, to propose a framework integrating the types and levels of the determinants of brand CO recognition and second, to provide evidence on internet users' brand CO recognition rates using a sample of multi-regional and global brands from a variety of product categories and countries. Our study contributes to the brand CO awareness literature by integrating consumer and brand characteristics in a theoretical model, and identifying level-2 product category features and CO effects previously disregarded in brand CO recognition frameworks. In addition, our study positively contrasts with previous research by providing empirical evidence on brand CO recognition from the largest set of global brands (109), countries of origin (19) and product categories (15) ever investigated. In this light, our study includes several distinctive features, since, as we will explain in the literature review, most studies on brand CO recognition focus on a very limited number of brands and product categories, consider determinants of brand CO recognition only at the consumer level, and neglect level-2 effects on brand CO recognition.

After reviewing the literature and identifying the relevant theory in the next section, we formulate nine hypotheses regarding the relationships between the different determinants and our focal construct. The fourth part of the manuscript describes the research methodology, which is based on an on-line empirical study carried out with the help of Yahoo portals and a two-level cross-classified model. We present the results in the fifth section and discuss them in the sixth. The paper concludes with an explanation of the implications and limitations of the study and guidelines for future research.

2. Literature review and theory

2.1 The literature on brand CO recognition

Different definitions have been adopted in the study of brand CO. Given that it is a more permanent characteristic, we define it as the country where the brand was originated and from which it takes its personality, regardless of where it is manufactured or the corporate headquarters of the brand's parent firm is located. Our definition, therefore, stays closer to that of Samiee (1994, p. 581) who defined CO as "the country with which a firm is associated" and contrasts slightly with the definition of CO as the country where the corporate headquarters of the company marketing the product or brand is located (e.g. Ozsomer and Cavusgil, 1991; Balabanis and Diamantopoulos, 2008) or the country in which the product is manufactured or assembled (e.g. Papadopoulos, 1993; Lee and Schaninger, 1996).

An increasing number of authors claim that there is a variety of ways in which to convey CO information, brand names playing a major role in this respect (Kim and Chung, 1997; Thakor and Lavack, 2003). In the global economy, most multi-national companies source and manufacture their products from multiple and changing locations and extend their value-added chain beyond national boundaries. In the last two decades, mergers and acquisitions (M&A) have restructured many industries. In this context, brand origin is potentially the only stable information about a product, leading some scholars to argue that it may be a more appropriate research stream than CO (Thakor and Kohli, 1996; Lim and O'Cass, 2001; Thakor and Lavack, 2003; Samiee *et al.*, 2005; Kinra, 2006).

A major underlying assumption in the CO literature is that consumers actually possess accurate knowledge about brand CO when forming judgments and making purchase decisions. Although in their study of four global brands, Paswan and Sharma (2004) found correct CO identification rates among Indian consumers to range between 57 and 84 percent (see last column in Table I), later evidence clearly questions consumers' ability to identify brand CO. In fact, Samiee *et al.* (2005) found that the US population failed to identify close to 43 percent of their sample set of 84 brands (40 US and 44 non-US brands) with any country ("don't know" category) and correctly linked only 35 percent of them to their CO. Working with two supposedly internationally well-known brands, Epson and Mont Blanc, Thakor and Lavack (2003) found most respondents unable to associate either of them with any one country, and only 9 percent of respondents able to correctly identify Epson with Japan and 15 percent able to link Mont Blanc with Germany. Samiee *et al.* (2005) emphasize that consumers' overall brand CO recognition is very modest at best and suggest that past research on CO has inflated the impact of CO information on consumers' product judgments and behavior and, thereby, its importance in managerial and public policy decisions. More recently, Balabanis and Diamantopoulos (2008, 2011) also reported relatively low correct classification rates for domestic and foreign brands.

A systematic comparison of relevant aspects of the very few studies that have dealt with brand CO recognition (see Table I) provides a number of additional insights. First, a frequent approach has been to investigate CO recognition without building on any explicit theoretical perspective (for remarkable exceptions see, for instance, Jin *et al.*, 2006; Samiee *et al.*, 2005; Balabanis and Diamantopoulos, 2008, 2011). Second, with respect to the characteristics of the empirical study, the mean sample size employed in previous research is just under 282 respondents and samples have been typically collected in single countries or towns. All samples except one were convenience samples, and, as such, non-representative at national level. In addition, most of them were drawn entirely from student populations. The researchers have typically employed traditional data collection techniques, such as self-administered questionnaires, and not used internet-based questionnaires. Most studies do not report response rates and base their findings on a mean of just under 30 brands, mostly from western countries and representing close to four product categories, on average. Third, in terms of the determinants of brand CO recognition and level of analysis, most studies focus only on determinants at the consumer level, while ignoring brand-level effects, and specifically those of level-2 determinants, such as product category and brand CO. Last but not least, given the diversity of the respondents and their nationalities, the variety of the data collection techniques used, and the different numbers and types of brands and product categories considered, it is not surprising that the empirical studies on the topic paint a picture of high variation in brand CO recognition rates.

2.2 Categorization theory and brand CO recognition

Categorization theory is an area of cognitive psychology that seeks to explain the way categories are learned and used. Categories can be defined as "groups of distinct abstract or concrete items that the cognitive system treats as equivalent for some purpose" (Markman and Ross, 2003, p. 592). They are used, among other things, to classify objects, where classification is understood as "the ability to determine that a new instance is a member of some known category" (Markman and Ross, 2003, p. 593). The marketing and consumer research literature has frequently investigated and

Table I.
Studies on brand CO
recognition

References	Empirical study										Brand CO recognition findings and/or brand performance per respondent and/or brand basis				
	Theory	Sample size	Country	Sampling	Respondents	Data collection	Response rate	No. of brands	Brand CO	Brand type (number of product categories)		Determinants of BCO recognition and level of analysis			
Balabanis and Diamantopoulos (2008) ^a	Classification (category learning)	183	UK: A British city	Convenience at the country level Random at the city level Non-representative at the national level	Households	"Drop and collect" method	70%	13	4 UK 3 Japan 3 Korea 1 USA 1 Italy 1 Sweden	Census of microwave oven brands (1)	S: Familiarity with the country Ethnocentrism Age Gender Perceived ns: CO (local vs foreign) Involvement with the product category Education Income	S: CO (dominant vs non-dominant) Brand name congruence ns: CO (local vs foreign)	No	No	27% correct (22% corrected for guessing) 51% incorrect 22% Don't know From 1.6 to 76.2% ^b
Zhuang <i>et al.</i> (2008)	No explicit mention	400	China: Hangzhou	Convenience	Students from a university	Self-administered questionnaire	Not reported	67	32 China 35 "Foreign"	Well-known Toothpaste, shampoo, casual wear, sport shoes, cell phone, water, beer (7)	No	Yes	No	No	From 24.5 to 99% (recognition of local vs foreign origins instead of the specific country) From 42 to 99%
Jin <i>et al.</i> (2006)	Social identity theory and social motivation theory	145	India: Mumbai	Convenience	Post-graduate students in an institute of management	Self-administered questionnaire	Not reported	15	India China UK Japan USA	Consumer durables, frequent consumption, technological, pharmaceutical and fashion brands (5) Exclusion of well-known origins.	S: Perceived consumer knowledge Perceived consumer social status	No	No	No	From 42 to 99%
Samiee <i>et al.</i> (2006) Study 1	Categorization	480	USA	Random sample of 5,000 respondents	Adult household members	Mail survey	12%	84	40 USA 44 Non-USA	Exclusion of well-known origins.	US brands S: Socioeconomic	No	No	No	35% total 49% USA

(continued)

References	Theory	Sample size	Country	Empirical study				Determinants of BCO recognition and level of analysis			Brand CO recognition findings per respondent and/or brand basis					
				Sampling	Respondents	Data collection	Response rate	No. of brands	Brand CO	Brand type (number of product categories)		Consumer level	Brand level	Product-category level	Country level	
and Shimp <i>et al.</i> (2001)				from all 50 states If representative, only of Americans holding drivers' licenses	holding drivers' licenses										22% Non-USA	
Samiee <i>et al.</i> (2005) Study 2	Categorization	51	USA	Convenience	Graduate and undergraduate students	Not reported	Not reported	71	40 USA 31 Non-USA	See above	No	Statistical test are not performed	No	No	35% total 35% USA 35% Non-USA 44% USA 45% Non-USA	
Paswan and Sharma (2004)	No explicit mention	695	India	Convenience: Five key Indian metropolitan cities	Consumers from middle to upper socio-economic strata	Personal interviews	Not reported	4	USA	Well-known global (KFC, McDonalds, Pepsi, Coke) (2)	No	S: Negative association with accuracy of brand CO knowledge about a competing brand Partial support for a positive relationship with the level of familiarity with the CO	No	S: Partial support to association with CO image	Between 57 and 84%	

(continued)

Brand CO recognition determinants

Table I.

References	Empirical study					Determinants of BCO recognition and level of analysis			Brand CO recognition findings Recognition performance per respondent and/or brand basis					
	Theory	Sample size	Country	Sampling	Respondents	Data collection	Response rate	No. of brands		Brand CO	Brand type (number of product categories)	Consumer level	Brand level	Product-category level
Thakor and Lavack (2003) Experiment 1	No explicit mention	34	Not reported	Convenience	Undergraduate	Questionnaire	Not reported	2	2, Japan	Well-known (2)	No ^e	No	No	17% (only one brand reported)
Thakor and Lavack (2003) Experiment 2	No explicit mention	77	Not reported	Convenience	Undergraduate students	Questionnaire	85%	2	1, Japan 1, Germany	Well-known (2)	No	No	No	Between 9 and 15%
Lim and O'Casey (2001)	No explicit mention	459	City of Singapore	Convenience	Undergraduate and postgraduate students in a major university	Interviewer-administered survey	Not reported	6	3 Western 3 Eastern	Fashion clothing brands (1)	No	No	No	84.3% (perceived culture-of-brand-origin) 65.1% (perceived CO)

Notes: ^aA more recent study (Balabanis and Diamantopoulos, 2011) uses the same empirical basis but focuses on the consequences of brand CO misclassification and non-classification; ^bThey also concluded that, on average, brand CO performance does not affect brand evaluations; ^cThe findings are in terms of preference for local or foreign brands and purchase of local or foreign brands; ^dThese are not evaluated in terms of brand CO recognition performance; ^eThe antecedents and consequences of perceived brand origin are investigated (instead of brand CO recognition performance). S-, significant; ns, non-significant

applied categorization processes (e.g. Sujan, 1985; Sujan and Tybout, 1988). The research on branding, in particular, relies heavily on categorization (e.g. Barone and Miniard, 2002), although CO and brand CO studies have made much less use of this theory (for exceptions see Alden *et al.*, 1993; Lee and Ganesh, 1999; Samiee *et al.*, 2005; Balabanis and Diamantopoulos, 2008, 2011).

From the categorization theory perspective, knowledge about a brand and its critical attributes is fundamental in enabling consumers to classify the brand as belonging to a CO, while knowledge of the country to which a brand belongs is crucial for the transfer of CO image to brand image (inference). Thus, the process by which consumers learn to identify brands with specific countries is an issue of major interest. To make sense of brands in the marketplace, consumers create and use categorical representations to classify, interpret and understand any brand information they obtain (Loken *et al.*, 2008). Brands are consumer categories, that is, groups that consumers perceive as being in some way related. Consumers store information about sets of brands in their cognitive systems and later use this information to understand these sets.

Critical use of this information occurs in the categorization process, when consumers employ it to assign a particular brand to a set, so they can understand and draw inferences about that brand. The CO is an extrinsic cue that is stored in the consumers' cognitive system and used during categorization, first, to assign a brand to a country and, later, to infer or evaluate unknown attributes of the brand or characteristics such as the quality of the product (e.g. Kinra, 2006; Hamzaoui Essoussi and Merunka, 2007). Our approach builds on this theory by accepting that consumers will classify brands into COs by using information about their key characteristics and attributes such as their denomination. For instance, a French brand name can suggest that a brand is of French origin. We also defend that once consumers classify the brand into a CO, they will use their knowledge about that country and its brands to make inferences regarding the properties of that particular brand.

The categorization theory underlying our study can later be traced in the formulation of several of our hypotheses. The empirical research design is also anchored in this perspective, implying that consumers rely on diagnostic characteristics such as brand and product category features when assigning a brand to a CO. According to Markman and Ross (2003), features that are diagnostic of the categories are particularly important for classifying new instances and, as we will argue and hypothesize, we expect some brand attributes (e.g. denomination) and product category aspects (e.g. dominance) to be diagnostic.

3. Theoretical model and hypotheses

Studies evaluating the determinants of brand origin recognition (e.g. Paswan and Sharma, 2004; Jin *et al.*, 2006) are scarce and tend to focus on one major determinant: consumer characteristics. Two more recent efforts have also studied brand CO antecedents at the brand level (Balabanis and Diamantopoulos, 2008; Zhuang *et al.*, 2008). We argue that level-2 determinants of brand CO recognition, such as product category- and country-level variables, are also important. We, therefore, suggest four main groups of factors as potential sources of variation in brand CO recognition (see Figure 1). While consumer and brand characteristics are expected to have a "level-1" effect on consumers' brand CO recognition, product category features and brand CO variables can be considered "level-2" characteristics (the brands are cross-classified by product category and CO). In other words, we propose an integrative

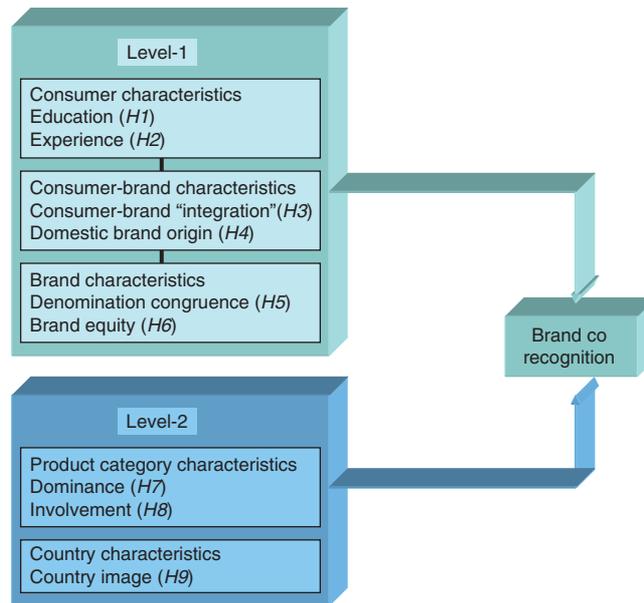


Figure 1.
An integrative framework
of brand country of origin
recognition determinants

framework and present a two-level cross-classified model of brand CO recognition. In line with our study's main objective, the framework and model are intended to integrate meaningful brand CO antecedents at each of the two effect levels.

3.1 Consumer and brand characteristics (level-1)

3.1.1 Education. Education influences the way people communicate and interpret information (Dow and Karunaratna, 2006). Different levels of education are likely to have an effect on brand preferences, consumption patterns and, through the cognitive-perceptual processes of selective attention, distortion and retention (Kotler *et al.*, 2008), on brand awareness. At the micro-level, it is argued that education is an important variable influencing the CO effect (Festervand *et al.*, 1985; Al-Sulaiti and Baker, 1998) and consumers' ability to recognize brand CO. Better-educated consumers can be assumed able to make a more accurate interpretation of the brand information they process and thus less likely to misidentify brand CO. It has also been stated that consumers with higher education and income levels will more readily recognize brand origin information than those with lower levels, who will find brand information less diagnostic than price and value attributes (Samiee *et al.*, 2005). The above reasoning leads to our first hypothesis:

H1. Education is positively related with brand CO recognition.

3.1.2 Experience. We argue that consumers' awareness of brands and products is affected by the learning and experience they have acquired with such brands and products. This awareness and experience can arise from an array of different sources and situations, such as brand internationalization, i.e. the presence of foreign brands in the local market. However, brand awareness will be particularly related to the age of the consumer, since older consumers will have experienced more brands. Although

younger consumers may be more sensitive toward foreign brands and recognize CO more accurately due to greater worldliness (Samiee *et al.*, 2005), we expect consumer age to have a positive influence through greater experience in the marketplace (Samiee *et al.*, 2005). The second hypothesis therefore reads as follows:

H2. Experience with brands is positively related with brand CO recognition.

3.1.3 Consumer-brand “integration”. This is an overlooked factor in previous attempts to explain brand CO recognition. Surprisingly, researchers have never turned their attention to effects derived from the relationship between consumer nationality and brand origin, probably because the typical research design has not attempted to investigate consumers across countries. We begin our reasoning by acknowledging that the ongoing globalization process (Levitt, 1983; Yip, 1992; Bartlett and Ghoshal, 2000) has increased ties between governments, companies and consumers. As a result of reduced trade and investment barriers, consumers living in more integrated regions (e.g. EU, NAFTA, MERCOSUR, etc.) may know more about brands from the set of countries within their region. Indeed, the value of trade between EU member countries is double that with the rest of the world (Eurostat, 2010). At the same time, more companies have become international, multi-national or global and are, therefore, present in multiple countries. This makes it easier for consumers to buy products conceived, designed or manufactured abroad and to become familiar with foreign brands, particularly in more integrated regions. Finally, consumers themselves are probably experiencing higher mobility, interaction and contact with consumers and brands from their own regions. We hypothesize the expected effect as follows:

H3. Integration between consumer nationality and foreign brand origin is positively related with brand CO recognition.

3.1.4 Domestic brand origin. We expect consumers to be more accurate in identifying CO in domestic brands, with which they can be assumed to have higher levels of exposure, familiarity and experience, than in foreign brands. More intense or longer exposure to products and brands in the markets and media can drive consumer brand familiarity. In other words, brands that are “more likely to occur” are expected to be more familiar (Balabanis and Diamantopoulos, 2008). Familiarity, in turn, can increase the likelihood of consumers’ having experienced the brand, and thus increase brand recall and recognition, i.e. enhanced awareness of “experienced” brands. At the same time, the higher availability of domestic brands might be diagnostic in brand CO recognition, leading consumers to assign highly available brands to the “domestic” set during the categorization process. Whatever the specific mechanism is, it will create the conditions to promote consumers’ exposure to, familiarity with or experience of the more frequently-available domestic brands. All this leads to our fourth hypothesis:

H4. Domestic brand origin is positively related with CO recognition.

3.1.5 Brand denomination congruence. Brand denomination is a brand attribute that, intuitively, appears to be closely related to the frequency with which consumers are able to recognize the CO of a particular brand. According to the categorization theory, brands named in a specific language are likely to suggest a CO to consumers (Leclerc *et al.*, 1994). Consumers might, for instance, associate “Benetton” and “Gucci”

to Italy or “Budweiser” and “Harley Davidson” to the USA (or some English-speaking country). In addition, there is empirical evidence suggesting that brand names that are incongruent with a brand’s true origin, have a negative influence on consumers’ CO classification performance (Balabanis and Diamantopoulos, 2008). We hypothesize as follows:

H5. Congruence between a brand’s name and its true origin is positively related with brand CO recognition.

3.1.6 Brand equity. As a result of a positive image and reputation and global presence, some brands have higher brand equity. Typically, they belong to the largest MNEs and are considered one of their main assets, offering them the possibility to obtain premium prices from consumers (Ailawadi *et al.*, 2003). Given that companies with greater brand equity are likely to use a family branding strategy, awareness of the CO of these MNEs can often help consumers to infer the CO of their brands. In addition, higher consumer awareness and intense marketing of these brands make recognition of their CO more likely. Therefore, we hypothesize as the following:

H6. Brand equity is positively related with brand CO recognition.

3.2 Product category and country characteristics (level-2)

3.2.1 Product category dominance. Consumers often associate certain product categories with specific countries of origin. According to Balabanis and Diamantopoulos (2008), a dominant CO is “an origin that is frequently and readily evoked in a product category” (p. 46), usually because it outperforms others in product attributes such as quality, design, frequency of use or has a stronger tradition in producing and consuming that category of products. Over time, the country gains a positive reputation for superior value in that product category, regardless of brand. The CO serves as a positive cue in consumers’ judgments. This cue might even be diagnostic in the specific product category and, therefore, may help consumers assign a new brand to the “dominant” set so they can understand and draw inferences about that brand. Examples include pasta and men’s fashion from Italy, electronic products from Japan and perfumes from France. On this basis, we formulate the following hypothesis:

H7. Product category dominance is positively related with brand CO recognition.

3.2.2 Involvement. The level of consumer involvement in purchasing decisions (Mittal, 1989, 1995; Mittal and Lee, 1989) varies across product categories. The reason is that consumers perceive different levels of risk associated with the purchase of products from different product categories, and risk is frequently considered an antecedent of involvement (Choffee and McLeod, 1973). Higher perceived risk usually results in consumers spending more time searching for relevant information and, thus, in more rational decision-making processes and consumer behavior. Therefore, different product categories mean different perceived risk and, in turn, different consumer behavior and involvement. Product categories differ, for instance, in the self-expressiveness and prices of the products, both of which also affect the perceived risk. Involvement can occur at both the product category and brand levels (Mitchell, 1999). We expect higher consumer involvement with the product category to

have a positive effect on brand-classification accuracy in that particular category. Consumers' information search behavior and the established motivational role of involvement in their attention and comprehension processes (Celsi and Olson, 1988) result in consumers' having more knowledge about brands from high-involvement product categories. Thus, we hypothesize as follows:

- H8. Consumer involvement with a product category is positively related with brand CO recognition.

3.2.3 Country image. The CO of the brand is expected to have an effect on brand CO recognition. That is, brands from countries that are better known or have a more positive image are more popular and their CO is more easily recognized. In other words, it is easier for consumers to associate a brand with a particular country when their awareness of that country is high for economic, political, cultural or historical reasons, or when the brand conveys a positive image of the country and/or its values. Favorable perceptions about a country lead not only to favorable attitudes toward its products and brands (e.g. Leclerc *et al.*, 1994; Gurhan-Canli and Maheswaran, 2000; Ahmed *et al.*, 2002) but also to higher overall product and brand awareness and, in turn, enhanced brand CO recognition. Our last hypothesis, therefore, is the following:

- H9. Better country image is positively related with brand CO recognition.

4. Methodology

4.1 Sample

We use a sample created from random visitors to Yahoo portals. We targeted the four countries (USA, France, UK and Germany) with the greatest number of brands among the Interbrand's 100 Best Global Brands[1]; other developed and emerging markets featured on the Interbrand list (Italy, Sweden, Denmark and Brazil) and one of the few Spanish-speaking countries in which Yahoo was established at the time of the fieldwork (Argentina). A database containing a total of 1,132 responses to a web-based questionnaire, from a total of 61 countries, was obtained online. The last part of the questionnaire was an original "brand CO recognition game." Since some internet users played the brand CO recognition game more than once, the database contained 217 duplicate e-mails and internet protocol addresses. To avoid double data entry, second and subsequent answers from the same person were discarded (e.g. Gosling *et al.*, 2004). After an additional data-filtering process (to remove incomplete questionnaires), the database contained 891 valid responses from 60 countries: Argentina[2] (286), Germany (66), France (61), Italy (54), the UK (53) and the USA (49) accounted for close to 64 percent of them. Despite the fact that hierarchical linear models (HLM) can accommodate unbalanced designs (e.g. Cools *et al.*, 2009), important asymmetries in the number of responses across countries (ranging from 1 to 286), led us to two decisions. First, we randomly extracted the same number of Argentine respondents (66) as the second largest sample, and discarded the rest. Second, we used the data from the resulting six largest samples (ranging between 49 and 66 respondents). This way, we retained a total of 349 respondents.

In terms of demographics, the majority of respondents in the final sample are men (56.4 percent), over the age of 21 but under 36 (48.8 percent) and University graduates (57.1 percent). This is an adequate sample, since internet users are more frequently men, young and educated (e.g. Assael, 2005) and our purpose is to identify brand

CO recognition antecedents at two levels of analysis in an international sample of consumers – thus breaking with the typical research design which uses traditional data collection methods and is based on a sample from a specific country or town. Further, despite the potential self-selection biases typically associated with web-based questionnaires, these have been found to be quite similar to those encountered in traditional questionnaires (Gosling *et al.*, 2004)[3].

4.2 Questionnaire

The electronic self-administered questionnaire was available for web visitors to be filled out online, either in English or Spanish. Language equivalence was guaranteed by applying a back translation technique (Hambleton, 1993, 1994). Before administering the questionnaire, a qualitative pre-test was carried out to ensure face validity and verify completion time. To dispel misgivings in survey respondents, the questionnaire did not request income data. It contained four blocks of questions (this research is part of a larger project) including consumers' socio-demographic variables and an original brand CO recognition game. Since the pre-test of the game showed that questioning on all brands would require a non-affordable completion time and potentially lead to respondent fatigue, we decided to instruct participants to select three product categories (from a total of 15, each with 10 brands) and link each brand to its CO. The product categories (which included products and services, durable and non-durable goods and "male" and "female" goods) and the number of respondents that selected each product category are shown in Appendix. In order to increase response rates, respondents were offered the chance to participate in a draw to win one of three free, nine-day, all-in trips to Spain for two.

Brand selection for the questionnaire was guided by several considerations. First, given their probably higher degree of consumer familiarity and, in line with our multi-country and web-based data collection technique, their presence in a larger set of countries, we targeted multi-regional and global brands (Townsend *et al.*, 2009). The resulting set of brands was, in practice, a combination of the Interbrand's 100 Best Global Brands and another country-specific ranking, Interbrand's "Most valuable brands." This enabled us to include up to seven of the most important internationalized brands in each of the 15 product categories considered, while also taking into account three global brands from three key emerging countries (Brazil, China and Mexico). Thus, we analyzed a total of 109 brands[4].

Finally, all countries with brands in a given category were shown in alphabetical order together with two more countries with no brands in that category (selected from the original pool of 19). This game design was expected to reduce sheer guessing. In addition, the "Don't know" response option was implicitly included, by allowing respondents to continue with the questionnaire after skipping a question.

4.3 Field research

Web-based administration of survey research is fast, flexible and cost saving (Cook *et al.*, 2000). Efficiency (the potential to collect a large amount of data in a relatively short period of time), and data quality (automatic data entry prevents typing errors) are additional strengths of data collection by on-line surveys. This is apparent in our study, since our fieldwork took 34 days spanning March and April 2004. Yahoo was the hired internet portal, where random banners (pop-ups) appeared inviting visitors to take part in the survey. The specific sites were Yahoo Asia, Yahoo.com (English), Yahoo Español (which covered Spain and most Latin-American countries),

Yahoo Argentina, Yahoo Brazil, Yahoo Europe (France, Germany, UK, Italy, etc.), etc. The total number of banner views was 1,440,000 (720,000 Yahoo News and 720,000 Yahoo Mail) and the response rate was close to 0.79 percent/1,000, which is higher than the average rate of large-scale banner-advertised web surveys offering a click-through incentive (e.g. Tuten *et al.*, 2000; Cho and Cheon, 2004).

4.4 Measurement of the variables

4.4.1 *Consumer and brand characteristics (level-1)*. The first, education, was operationalized in four categories (primary, high-school, degree and post-graduate) representing the highest level of education attained by the respondent. The second, experience, was measured as the age of the respondent, also in four categories (see Table II). We also entered a control for gender, a variable for which we could not establish a solid theoretical link with brand CO recognition despite previous empirical observations (e.g. Samiee *et al.*, 2005) found it to be significantly related to brand CO recognition accuracy.

We measured consumer-brand “integration” as a dummy reflecting whether the respondent is from a country participating in a process of economic integration (EU, MERCOSUR and NAFTA) with the country of the brand (i.e. foreign European brands for European respondents, Brazilian brands for Argentine respondents and Mexican brands for US respondents). Domestic brand origin was operationalized in terms of two categories: domestic vs foreign origin. To this end, we compared the nationality of the respondent with the brand CO. The brand was labeled “domestic” if the respondent’s nationality matched the brand CO, and as “foreign” otherwise. Brand denomination congruence was measured as the extent to which the brand name suggests or can be associated with a specific origin. We asked a panel of ten experts on international marketing and/or branding from a total of ten countries and proficient also in a total of ten languages to indicate their level of disagreement or agreement (one

Construct	Measurement	Label
<i>Consumer and brand characteristics (level-1)</i>		
Education	Educational achievement (0 = primary; 1 = high school; 2 = university degree; 3 = post-graduate)	Education
Experience	Age (0 = under 21 years old; 1 = 21-35 years old; 2 = 36-50 years old; 3 = 51-65 years old; 4 = over 65 years old)	Experience
Gender	Dummy variable (0 = man; 1 = woman)	Gender
Consumer-brand “integration”	Dummy variable (0 = no integration; 1 = integration)	Integration
Domestic brand origin	Dummy variable (0 = foreign; 1 = domestic)	Domestic
Brand denomination congruence	Level of agreement (one to seven)	Congruence
Brand equity	Dummy variable (0 = not 100 Best Global Brand; 1 = 100 Best Global Brand)	Equity
<i>Product category and country characteristics (level-2)</i>		
Product category dominance	Dominant vs non-dominant (0 = non-dominant; 1 = dominant)	Dominance
Product category involvement	Summated scale of the three items on Mittal’s (1989) scale (1 to 7)	Involvement
Country image	Anholt-GMI Nation Brands Index	Image

Table II.
Operationalization of the
explicative and control
variables

to seven) with the statement, "Linguistically speaking, the following brand as a word (not a brand) sounds [Language of the brand CO]." We excluded the five Swiss brands because Switzerland has more than one language (Samiee *et al.*, 2005). We found EJ Gallo (1.50) and Hugo Boss (1.60) as the most incongruent brand names, and Campbell's (6.80) and McDonald's (6.70) as the most congruent. Finally, brand equity was measured as "1" when the brand was included in the Interbrand's 100 Best Global Brands and "0" otherwise.

4.4.2 Product category and country characteristics (level-2). In order to measure product category dominance, the panel of experts was asked to indicate the country that first came to their mind when thinking of each of the 15 product categories. Countries mentioned by at least half of the experts were defined as "dominant" in that category. Under this conservative criterion, the USA emerged as the dominant country in four product categories: France in three; and Italy, the UK and Germany in one each[5]. There was not enough agreement on the dominant country in the remaining product categories. As a result, the five product categories with no dominant origin were assigned code "0" and the ten with a dominant CO code "1."

The experts evaluated product category involvement on the three items of the seven-point bipolar rating scale proposed by Mittal (1989). There is evidence of the reliability and validity of this scale in previous studies. The internal consistency (Cronbach's α) of the "involvement scale" was high across product categories: four had coefficients higher than 0.9, seven higher than 0.8, and three higher than 0.7[6]. We used summated scales (Hair *et al.*, 2006) to build an average score per product category. The highest-rated categories for consumer involvement were "automotive" (6.47) and "perfumes and gifts" (5.88); the lowest were "confectionery and snacks" (4.21) and "chains and department stores" (4.58).

Finally, country image was measured using the overall Anholt-GMI Nation Brands Index, developed by Simon Anholt in 2005. This index is based on a worldwide consumer panel's perceptions of the cultural, political, commercial and human assets, investment potential and tourist appeal of several developed and developing countries.

4.4.3 Brand CO recognition performance. The brand CO recognition game provided the raw data used in our analysis. The dependent variable was measured as the individual response of each internet user regarding the CO (level-1) of each brand in the three product categories selected. Wrong answers were coded "0" and right answers were coded "1." This Bernoulli distribution has, therefore, a predicted value equal to the probability of a success.

4.5 Data analysis technique

The relationships proposed in the research hypotheses were analyzed using a two-level cross-classified random-effect model (HCM2). HLM (e.g. Bryk and Raudenbush, 1992; Kreft and de Leeuw, 1998; Snijders and Bosker, 1999) are suitable when the data have a hierarchical structure. Given that the brands in our sample are nested within product categories and countries, multi-level models offer a solution in a situation that cannot be modeled with standard regression techniques.

5. Level and determinants of brand CO recognition

5.1 On the level of brand CO recognition

In this part, we present the descriptive statistics for brand CO recognition performance at the two levels of analysis. First, we found the proportion of correct responses across all internet users and all brands to be 68.2 percent. This is in line with classification

performance rates reported in other studies dealing with well-known and global brands, such as Paswan and Sharma (2004), Jin *et al.* (2006) and Zhuang *et al.* (2008). Corrected for guessing[7] (Balabanis and Diamantopoulos, 2008), the average correct identification rate per consumer is 64.9 percent. Second, the percentages of brand CO recognition vary with the respondent's country, from a maximum of 74.1 percent for the Germans to a minimum of 55.6 percent for the Argentines (see Table III).

Third, the scores for the individual brands (see Table III) show McDonald's (96.8 percent), Ferrari (96.3 percent) and Toyota (96.3 percent) as the three brands with the highest brand CO recognition rates. In contrast, Mentos (0.0 percent), EJJGallo (14.7 percent) and Electrolux (15.4 percent) are the three with the lowest brand CO recognition rates. These three brands either have inconsistent brand names or belong to low-involvement product categories.

Fourth, the correct response rates at the product category level show that the automotive (87.3 percent) and women's fashion (74.5 percent) categories have the highest CO recognition rates, while confectionery and snacks (46.4 percent) and perfumes and gifts (49.1 percent) have the lowest (see Table III). Finally, at the country level, the highest scorers are the Italian (76.8 percent) and US brands (71.8 percent), while the Dutch (60.6 percent) and Swiss (61.1 percent) are the lowest (see Table III).

5.2 Determinants of brand CO recognition

We estimated a two-level cross-classified model consisting of level-2 units (product categories and countries) in which the level-1 units (brands) are nested. The use of an HCM2 enable us also to determine whether or not brands from different product categories and countries show systematic differences in their mean brand CO recognition performance. We expect product category and country characteristics to predict overall brand CO recognition performance (but not to affect the intensity of the relationship between the explanatory and dependent variables). The model specified in equation format, therefore, is:

$$\begin{aligned} \text{Level-1 Model : } \text{Log}[\varphi/(1 - \varphi)] = & \eta = \pi_0 + \pi_1 (\text{Education}) + \pi_2 (\text{Experience}) \\ & + \pi_3 (\text{Integration}) + \pi_4 (\text{Domestic}) \\ & + \pi_5 (\text{Congruence}) + \pi_6 (\text{Equity}) + \pi_7 (\text{Gender}) + e \end{aligned}$$

where π_{pjk} ($p = 1, \dots, 7$) are level-1 coefficients and e denotes the level-1 or within-cell random effect:

$$\text{Level-2 Model : } \pi_0 = \pi_1 = \theta_1; \pi_2 = \theta_2; \pi_3 = \theta_3; \pi_4 = \theta_4; \pi_5 = \theta_5; \pi_6 = \theta_6; \pi_7 = \theta_7$$

where θ_0 is the model intercept; b_{00} the residual row-specific random effect; c_{00} the residual column-specific random effect; γ_{01} denotes the fixed effect of the row-specific predictor and β_{01} and β_{02} the fixed effect of the column-specific predictors.

The results confirm our seven hypotheses regarding consumer, brand and product category characteristics, but do not support the two regarding "dominance" and "country image" (see Table IV). We estimated an initial model (Model a) with all the variables and a final model (Model b) from which the two non-significant relationships were dropped. This final model shows first, that education is positively related with brand CO recognition (*H1*); second, that experience with brands is positively related

	Brand CO recognition (%)	Product category	Brand CO recognition (%)	Brand CO (no. of brands)	Brand CO recognition ^a (%)
<i>Country</i>					
Germany	74.1	Automotive	87.3	Italy (8)	76.8
Italy	71.9	Fashion (women's)	74.5	USA (23)	71.8
France	71.5	Sporting goods	70.9	Spain (4)	70.9
UK	69.3	Food products	69.5	France (18)	68.4
USA	68.6	Wines and beers	69.3	Japan (9)	67.8
Argentina	55.6	Fashion (men's)	69.2	UK (12)	67.6
		Banking	67.3	Germany (10)	63.1
		Telecoms	66.4	Sweden (5)	61.7
<i>Brand</i>					
McDonald's	96.8	Chains and department stores	66.1	Switzerland (5)	61.1
Ferrari	96.3	Sherry and spirits	65.6	The Netherlands (4)	60.6
Toyota	96.3	Travel and tourism	62.5		
Sumitomo Bank	96.2	Non-alcoholic beverages	55.6		
Coca-Cola	94.4	Building material	53.8		
Mercedes	93.9	Perfumes and gifts	49.1		
L.A. Lakers	92.6	Confectionery and snacks	46.4		
Nike	92.6				
Telefónica	92.6				
Microsoft	91.4				
Hugo Boss	30.8				
Maggi	30.7				
Halls	30.0				
Paco Rabanne	28.0				
Carolina Herrera	24.0				
Schweppes	22.2				
SCH	18.5				
Electrolux	15.4				
EJ Gallo	14.7				
Mentos	0.0				
Table III. Highest and lowest brand country of origin recognition performance per country, brand, product category and brand country of origin	Note: ^a To avoid misinterpretation of the descriptive statistical results, we only report brand CO recognition of countries with more than two brands in the game				

with brand CO recognition (*H2*); third, that integration between the consumer and the country of a foreign brand is positively related with brand CO recognition (*H3*); fourth, that internet users' classification performance is significantly better for domestic than for foreign brands (*H4*); fifth, that brand-name congruence with true brand origin is positively related with brand CO recognition (*H5*); sixth, that brand equity explains brand CO recognition (*H6*) and seventh, that product categories with higher consumer involvement enhance brand CO recognition (*H8*). We also found significant *p*-value ($p < 0.000$) for b_{00} and c_{00} rejecting the hypothesis that these values are equal to 0. In other words, there is significant variability among countries and product categories

Fixed effect	Model a				Model b			
	Coefficient	Standard error	t-ratio	Approximate df	Coefficient	Standard error	t-ratio	Approximate df
<i>For intercept 1 (π_0)</i>								
Intercept 2 (θ_0)	-5.54	2.50	-2.21	6,560	-4.96	1.36	-3.66	6,562
Image (H_9) (γ_{01})	0.01	0.03	0.30	14	0.762			
Dominance (H_7) (β_{01})	-0.04	0.28	-0.14	13	0.892			
Involvement (H_8) (β_{02})	0.45	0.25	1.82	13	0.068†		1.86	13
<i>For education (H_1) slope (π_1)</i>								
Intercept 2 (θ_1)	0.32	0.04	7.15	6,560	0.32	0.04	7.15	6,562
<i>For experience (H_2) slope (π_2)</i>								
Intercept 2 (θ_2)	0.15	0.04	3.58	6,560	0.15	0.04	3.59	6,562
<i>For integration (H_3) slope (π_3)</i>								
Intercept 2 (θ_3)	0.58	0.08	6.95	6,560	0.58	0.08	6.98	6,562
<i>For domestic (H_4) slope (π_4)</i>								
Intercept 2 (θ_4)	2.09	0.15	13.45	6,560	2.09	0.15	13.46	6,562
<i>For congruence (H_5) slope (π_5)</i>								
Intercept 2 (θ_5)	0.58	0.03	21.85	6,560	0.58	0.03	21.91	6,562
<i>For equity (H_6) slope (π_6)</i>								
Intercept 2 (θ_6)	0.83	0.09	9.43	6,560	0.84	0.09	9.45	6,562
<i>For gender (control) slope (π_7)</i>								
Intercept 2 (θ_7)	-0.54	0.07	-8.15	6,560	-0.54	0.07	-8.16	6,562

Notes: † $p < 0.10$; * $p < 0.05$; *** $p < 0.001$

Table IV.
Consumer and country
determinants: final
estimation of fixed effects

in their average brand CO recognition rates. Finally, the control “gender” plays a role in explaining brand CO recognition performance, as discussed in the next section along with the rest of the results.

6. Discussion and conclusions

The brand CO recognition performance scores that we found in our empirical study, and presented in the previous section, are in the range of those obtained in other studies using well-known and global brands (e.g. Paswan and Sharma, 2004; Jin *et al.*, 2006; Zhuang *et al.*, 2008) for which higher consumer familiarity is expected. Therefore, our findings differ from classification performance scores reported in studies not specifically dealing with well-known brands (e.g. Balabanis and Diamantopoulos, 2008) and those where brands with well-known origins were excluded (e.g. Samiee *et al.*, 2005). The latter “intentionally excluded brands with well-known origins” (Samiee *et al.*, 2005, p. 394), and found an increase in the recognition accuracy rates of US and non-US brands (from 35 and 22 to 68 and 33 percent, respectively) when adjusted for brand familiarity. We therefore suggest that brand CO recognition appears to be contingent on brand type (e.g. global vs local) and that this should be considered in the debate on brand CO recognition and the interpretation of research findings. As described, the brands used in our research can be considered well known and highly internationalized, and well-known brands may be more likely to convey origin information (Samiee, 1994). Another potential explanation for the brand CO recognition differences found between our study and those reporting lower brand CO recognition rates might stem from the fact that our sample is of internet users and therefore contains a majority of young adults, who are considered more brand knowledgeable than other age groups (Zhuang *et al.*, 2008; O’Cass and Lim, 2002). However, in our sample, brand CO recognition performance increases across the four main groups of internet users (97.9 percent of respondents), decreasing only in the elderly (over 65).

Regarding the determinants of brand CO recognition, we find all level-1 consumer, “consumer-brand” and brand characteristics to be significantly associated with brand CO recognition. First, there is a link between a higher level of formal education and a consumer’s ability to recognize a brand’s CO (*H1*). The more highly educated may possess certain personal or social characteristics and skills and/or exhibit consumer behaviors that make them more willing to try and more likely to remember new products and brands and their origin. This result is in line not only with the findings of Paswan and Sharma (2004) but also with those of Samiee *et al.* (2005) regarding a positive relationship between socioeconomic status (operationalized in terms of education and income) and brand origin recognition accuracy, while contrasting with the non-significant relationship obtained by Balabanis and Diamantopoulos (2008). Our results from an international sample of internet users on multi-regional and global brands particularly complement evidence from middle-to-upper class Indian consumers on four well-known global American brands and from US consumers on US and foreign brands.

Another consumer variable that is significantly related to and strongly connected with consumers’ ability to recognize brand CO recognition is experience (*H2*). Older internet users’ experience with brands and products appear intense enough to have become part of their knowledge. We also included gender in the model as a control and possible predictor of the ability to recognize brand CO. In fact, research based on CO and categorization theory provides evidence regarding the relevance of gender to

product knowledge and assessment (John and Sujana, 1990; Wall *et al.*, 1991). Our results show that men have significantly higher recognition rates than women. Previous studies have also found gender to have an effect on brand CO recognition performance (e.g. Samiee *et al.*, 2005; Balabanis and Diamantopoulos, 2008).

Second, the results for consumer-brand characteristics provided empirical support for the influence of consumer-brand “integration” (*H3*), suggesting that higher brand CO recognition can be expected when consumers evaluate foreign brands from countries linked to their own through integrated markets and the removal of international trade and foreign investment barriers. Therefore, country integration appears to trespass the macro-economic sphere, leaving visible effects on micro-actors such as consumers. In brief, people living in countries belonging to integrated markets have more CO knowledge of brands from other member countries.

Our test of the relationship between domestic brand origin and recognition performance (*H4*) provided empirical evidence of higher rates of brand CO recognition for domestic than for foreign brands. This could challenge findings about non-significant – but better classification performance – for foreign brands (Balabanis and Diamantopoulos, 2008), even though the latter were found in a specific product category. Our results reinforce instead evidence of higher brand origin recognition accuracy among, for instance, US consumers for domestic than for foreign brands (e.g. Samiee *et al.*, 2005). We can expect individuals from a particular country to be more familiar with home brands, and thus have better knowledge about, their origin.

Third, our analysis of brand characteristics showed that a linguistically congruent brand denomination (such as “Manchester United” in English or “Roche Bobois” in French), heightens consumers’ awareness of brand origin (*H5*). Our results clearly increase our understanding of the relationship between brand name congruence and brand CO recognition performance, since they provide evidence of higher recognition rates in a large set of 109 brands from 19 countries and 15 product categories and a multi-country sample, thereby adding to findings for a single product category in a major British city (Balabanis and Diamantopoulos, 2008). Brand equity (*H6*) also has a significant effect on brand CO recognition performance. The most valuable global brands are also the best known generally to consumers, who are also more likely to know their CO.

Fourth, the potential of level-2 product category characteristics as brand CO recognition determinants has been previously overlooked in this stream of research. Nevertheless, our study has shown higher brand CO recognition rates for both product category dominance (*H7*) and consumer involvement (*H8*) in the expected direction. However, although we found empirical support for a significant relationship between the level of involvement with the product category and brand CO recognition, the relationship was not significant for product category dominance. While other research has shown CO and brand to play an important role in consumers’ evaluations even for low-involvement products (Ahmed *et al.*, 2004), our study shows that higher involvement means higher brand CO recognition. Turning the subject to product category dominance, the findings of our study, which is the first to test this effect across categories, contrast with those obtained from British consumers who were able to correctly identify close to 52 percent of dominant, but < 11 percent of non-dominant brands in the micro-wave ovens product category (Balabanis and Diamantopoulos, 2008). We can conclude that belonging to a dominant category generally does not significantly improve a brand’s recognition performance.

Finally, although country image has no significant effect on brand CO recognition performance, the significant p -value for the intercept (b_{00}) indicates that brand CO recognition differs across countries. We can only speculate about other country characteristics leading to higher brand CO recognition rates. For instance, historical and cultural ties between countries might be among the many country aspects potentially enhancing brand CO recognition.

7. Implications, limitations and future research

This paper presents relevant new insights into brand CO recognition, brand management and the consumer/brand relationship, which will benefit international business managers, policy makers and academics focussing on international branding (Whitelock and Fastoso, 2007). One of the immediate implications for international brand management and promotion is that, in addition to consumer and brand characteristics, managers would profit from considering product category and country-specific characteristics. Brand managers, for instance, might adopt a product category perspective if they wish to respond to the challenges to brand CO recognition posed by the level of consumer involvement typically required by the product category. Similarly, managers from countries that are dominant in the product category to which their brands belong can also learn from our study not to take for granted that the competitive advantages associated with those origins will automatically transfer to their brands. Instead, they will need to activate the process through brand denomination and other brand characteristics for which they are responsible. Likewise, since country image does not appear to play a relevant role in brand CO recognition, managers cannot assume that positive images of their countries will, *per se*, enhance the likelihood of the consumer recognizing the CO of the brand and thus transferring the positive perception about the country to the brand. Therefore, managers would benefit from promoting the CO of those brands under their responsibility that are from particular product categories and countries. In this light, we acknowledge that it will be easier for managers in charge of multi-regional and global brands to increase (or decrease) consumers' knowledge of brand CO than to improve product category and country perceptions.

Managers targeting new countries might also consider the fact that greater consumer-brand integration results in consumers' more frequently recognizing brand CO from countries economically integrated with their own. Another related managerial implication has to do with what could be called the "liability of brand origin." Brand managers will find it harder to compete with domestic brands in foreign markets, simply because consumers are more familiar with and better able to recognize the origin of their local brands. While this threat might be seen as an opportunity in less-developed markets, where foreign products are perceived to be of higher quality, it could even represent an insurmountable challenge in countries where local brands and products enjoy a good reputation. Finally, managers in the largest MNEs could benefit from the brand CO recognition catalytic effect of their enormous brand equity.

As prescribed in the literature on CO, public policy makers and governments have an important role to play in the improvement of country image. Therefore, when countries or regions have a positive image, policy makers and governments could encourage firms to move in the direction of a clear association between brands and countries. Otherwise, they need to focus on creating the conditions that would lead to positive attributions to their country and its brands as a source of generic

competitive advantages that would ultimately benefit the firms under their jurisdiction. Support by policy makers and governments can be justified in the light of our study since, as stated, country image does not automatically affect brand CO recognition. However, in product categories where the country is highly competent, public policy makers have to consider that the overall promotion of the product category is not expected to contribute, *per se*, to higher brand CO recognition of specific brands (notwithstanding other important effects). In the latter case, it would be more effective to discriminate between high- and low-involvement product categories and assign public support accordingly. Last but not least, government engagement in economic integration processes ultimately results in higher foreign brand CO recognition by consumers.

Finally, scholars would benefit from considering the two levels of effects and the larger set of potential CO recognition determinants used in our study. Product category and country characteristics would make particularly useful additions to their research models. In this light, we expect the study of brand CO awareness to advance more firmly if researchers approach the topic from the hierarchical perspective (and model) that we have adopted. In addition, the level of brand CO recognition has to be understood as inherently associated with the kind of brands and consumers under analysis. Disregard of this aspect has led to meaningless comparisons and discussions. We would, therefore, encourage the development of models contingent to the type of brands and respondents under study. While this might involve some risk of research fragmentation in what is still a young stream of research, it would have the potential to uncover a number of brand CO determinants particular to specific groups of brands and consumers.

We acknowledge three main limitations of this research. The first is that, although highly adequate and valuable for our purposes, our sample – obtained from random visitors to Yahoo portals – cannot be considered representative of the “World population” or of the populations of consumers in the six countries from which we obtained the answers to our on-line survey. Our aim was to maximize the variability of international respondents and countries and we determined the specific quota of responses per country *ex post*. Our sample, however, does effectively reflect the characteristics of young, educated internet users in developed countries. In addition, we are confident that our research design is a strength of our study since it allowed us to obtain empirical evidence from the largest sample of internet users, brands, product categories and countries ever used in this stream of research. Future studies might provide insights as to whether our findings are context-specific or can be generalized, first, to internet users and then to consumers in general.

Budget constraints were the reason for the second limitation, namely, that the questionnaire and the brand CO recognition game were available (only) in English and Spanish. This may have biased the respondent selection toward countries where these languages are spoken. Although the number of responses from countries such as Italy, Germany and France suggests that this is a surmountable barrier for internet users, the findings have to be interpreted with caution, since our sample may contain less variability than desirable in the linguistic traits of the respondents. We must mention in favor of our approach that “English is typically considered [...] the language of the Internet” – Spanish being the third most important – (Flammia and Saunders, 2007) and most internet users speak English as a first or second language with English web content running as high as 70 percent of all web content (Flammia and Saunders, 2007). The third limitation of our study is its cross-sectional design, which precludes drawing

causal inferences between the different explanatory variables and the brand CO recognition rates.

Finally, with respect to future research directions, we believe that substantial insights into this topic could be gained by replicating the model using different groups of brands (e.g. luxury, hedonist, utilitarian, etc.), including brands from other origins such as, for instance, Latin-American and Arab countries, evaluating the various potential moderating effects and interactions between the determinants, and by considering more brand, product category and country characteristics. More importantly, the integration of both the antecedents and consequences of brand CO recognition (and awareness) in a comprehensive framework appears a very interesting challenge for scholars interested in developing this stream of research. In this light, the model could be extended to link brand CO recognition with other aspects of consumer attitude and behavior. Finally, the impact of corporate operations (M&A) on brand CO perception is a very promising future research topic on which new studies are expected to emerge. We are confident that these lines of future research will benefit from our integrative framework and multi-level approach.

Notes

1. The Interbrand List of the World's most valuable brands is published annually by the *Financial Times* and *Business Week* magazine. The Interbrand methodology is recognized by auditors, tax authorities and stock exchanges across the world (see Fehle *et al.*, 2008).
2. A tentative explanation of the fact that Argentina ranked first in number of responses – beyond the higher internet penetration rate in this country in comparison with other Latin American nations – is that the Argentines may have had “extra” motivation to participate in the game due to the incentive (win a free trip to Spain). Probable reasons may be historical links (the Argentine is the country with the highest number of descendents of Spaniards holding double nationality) and the country's difficult economic situation (the “corralito” had ended just a few months prior to our field research).
3. Indeed, Gosling *et al.* (2004, p. 99), in a comparative analysis of internet and traditional questionnaires found that “Internet samples are more representative than traditional samples with respect to gender, socioeconomic status, geographic location, and age [...]”
4. In connection with the larger project, a pool of 41 Spanish multi-regional and global brands (the two or three most internationalized Spanish brands from each of the 15 product categories) was also included in the game. In order to avoid overrepresentation of Spanish brands among the most valuable brands, they were excluded from the analyses.
5. The USA was the dominant country in non-alcoholic beverages (100 percent agreement), confectionary and snacks (66 percent), chains and department stores (66 percent) and sporting goods (75 percent); France dominated in wines and beers (50 percent), women's fashion (70 percent) and perfumes and gifts (100 percent); the UK in sherry and spirits (70 percent); Italy in men's fashion (100 percent) and Germany in automotive goods (60 percent).
6. The reliability was lower than expected only in the “travel and tourism” category (0.64). However, this value is high enough to keep the category in the analysis, given, also, that the scale works well with the rest of the product categories and that an exploratory factor analysis revealed its unidimensionality.
7. Given that the correlation between the observed percentage of correct responses and the percentage corrected for guessing, is 0.996, and that the findings and conclusions are similar, in order to avoid repetition and save space, we report only the analysis based on the observed scores.

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Appendix

<i>1 (%)</i>	<i>Food products</i>	<i>n = 189</i>	<i>2 (%)</i>	<i>Non-alcoholic beverages</i>	<i>n = 18</i>
72.0	Barilla	Italy	94.4	Coca-cola	USA
96.8	Mcdonald's	USA	72.2	Lipton	UK
79.4	Campbell's	USA	50.0	Nescafé	Switzerland
56.1	Danone	France	38.9	Orangina	France
83.1	Kellogg's	USA	61.1	Perrier	France
30.7	Maggi	Germany	22.2	Schweppes	USA
68.8	Nestlé	Switzerland	50.0	Sunkist	USA
	<i>Confectionery and snacks</i>	<i>n = 20</i>	<i>4 (%)</i>	<i>Wines and beers</i>	<i>n = 129</i>
3 (%)	Cadbury	UK	89.1	Budweiser	USA
60.0	Halls	USA	71.3	Carlsberg	Denmark
30.0	Kinder	Germany	64.3	Coronita	Mexico
60.0	Lays	USA	87.6	Dom Perignon	France
45.0	M&M	USA	14.7	EJ Gallo	USA
75.0	Mentos	The Netherlands	70.5	Heineken	The Netherlands
0.0	Toblerone	Switzerland	87.6	Tsingtao	China
55.0	<i>Sherry and spirits</i>	<i>n = 59</i>	<i>6 (%)</i>	<i>Fashion (men)</i>	<i>n = 39</i>
5 (%)	Absolut	Sweden	84.6	Armani	Italy
59.3	Jack Daniels	USA	74.4	Burberry	UK
76.3	Bailey's	Ireland	30.8	Hugo Boss	Germany
57.6	Beefeater	UK	74.4	Lacoste	France
67.8	Hennessy	France	89.7	Levi's	USA
59.3					

Table AI.
Product categories, respondents (*n*), brands and brand CO recognition rates (percent)

(continued)

55.9	Johnnie Walker	UK	61.5	Tommy Hilfiger	USA
83.1	Martini	Italy			
7 (%)	<i>Fashion (women)</i>	<i>n = 79</i>	8 (%)	<i>Perfumes and gifts</i>	<i>n = 25</i>
81.0	Benetton	Italy	24.0	Carolina Herrera	USA
86.1	Gucci	Italy	80.0	Cartier	France
78.5	Hermes	France	28.0	Paco Rabanne	France
63.3	Kenzo	Japan	44.0	Seiko	Japan
50.6	La Perla	Italy	68.0	Shiseido	Japan
83.5	Louis Vuitton	France	48.0	Swarosky	Austria
72.2	Prada	Italy	52.0	Swatch	Switzerland
81.0	Zara	Spain			
9 (%)	<i>Automotive</i>	<i>n = 82</i>	10 (%)	<i>Telecoms</i>	<i>n = 81</i>
96.3	Ferrari	Italy	50.6	Alcatel	France
91.5	Harley Davidson	USA	53.1	Ericsson	Sweden
80.5	Hyundai	Korea	91.4	Microsoft	USA
80.5	Jaguar	UK	50.6	Nokia	Finland
93.9	Mercedes	Germany	75.3	Siemens	Germany
80.5	Michelin	France	69.1	Sony	Japan
96.3	Toyota	Japan	92.6	Telefonica	Spain
79.3	Volvo	Sweden	48.1	Vodafone	UK
				<i>Travel and tourism</i>	<i>n = 180</i>
11 (%)	<i>Banking</i>	<i>n = 54</i>	12 (%)	<i>tourism</i>	<i>n = 180</i>
57.4	ABN-AMRO	The Netherlands	45.6	AVIS	USA
75.9	Barclays	UK	57.8	Club Med	France
75.9	BBVA	Spain	60.0	JAL	Japan
79.6	BNP-Paribas	France	87.6	Lufthansa	Germany
72.2	Citibank	USA	67.2	Quantas	Australia
88.9	Deutsche Bank	Germany	52.8	Varig	Brazil
18.5	SCH	Spain	67.2	Virgin	UK
96.2	Sumitomo Bank	Japan			
44.4	UBS	Switzerland			
	<i>Chains and department stores</i>	<i>n = 52</i>	14 (%)	<i>Building material and households</i>	<i>n = 13</i>
42.3	ALDI	Germany	38.5	Bang and Olufsen	Denmark
63.5	Bloomingdale'S	USA	15.4	Electrolux	Sweden
76.9	Carrefour	France	53.8	Grohe	Germany
86.5	Harrod'S	UK	69.2	Phillips	The Netherlands
61.5	IKEA	Sweden	76.9	Roche-Bobois	France
34.6	Isetan	Japan	69.2	Samsung	Korea
82.7	Lafayette	France			
80.8	Walmart	USA			
15 (%)	<i>Sporting goods</i>	<i>n = 27</i>			
44.4	Adidas	Germany			
92.6	L.A. Lakers	USA			
	Manchester				
88.9	United	UK			
92.6	Nike	USA			
33.3	Reebok	UK			
66.7	Rossignol	France			
77.8	Shimano	Japan			

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