

# Cross-National Logo Evaluation Analysis: An Individual Level Approach

Ralf van der Lans, Joseph A. Cote, Catherine A. Cole, Siew Meng Leong,  
Ale Smidts, Pamela W. Henderson, Christian Bluemelhuber, Paul A. Bottomley,  
John R. Doyle, Alexander Fedorikhin, M. Janakiraman, B. Ramaseshan,  
and Bernd H. Schmitt

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Email address corresponding author	cote@wsu.edu
Address	Erasmus Research Institute of Management (ERIM) RSM Erasmus University / Erasmus School of Economics Erasmus Universiteit Rotterdam P.O.Box 1738 3000 DR Rotterdam, The Netherlands Phone: + 31 10 408 1182 Fax: + 31 10 408 9640 Email: <a href="mailto:info@erim.eur.nl">info@erim.eur.nl</a> Internet: <a href="http://www.erim.eur.nl">www.erim.eur.nl</a>

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ABSTRACT AND KEYWORDS	
Abstract	<p>The universality of design perception and response is tested using data collected from ten countries: Argentina, Australia, China, Germany, Great Britain, India, the Netherlands, Russia, Singapore, and the United States. A Bayesian, finite-mixture, structural-equation model is developed that identifies latent logo clusters while accounting for heterogeneity in evaluations. The concomitant variable approach allows cluster probabilities to be country specific. Rather than a priori defined clusters, our procedure provides a posteriori cross-national logo clusters based on consumer response similarity. To compare the a posteriori cross-national logo clusters, our approach is integrated with Steenkamp and Baumgartner's (1998) measurement invariance methodology. Our model reduces the ten countries to three cross-national clusters that respond differently to logo design dimensions: the West, Asia, and Russia. The dimensions underlying design are found to be similar across countries, suggesting that elaborateness, naturalness, and harmony are universal design dimensions. Responses (affect, shared meaning, subjective familiarity, and true and false recognition) to logo design dimensions (elaborateness, naturalness, and harmony) and elements (repetition, proportion, and parallelism) are also relatively consistent, although we find minor differences across clusters. Our results suggest that managers can implement a global logo strategy, but they also can optimize logos for specific countries if desired.</p>
Free Keywords	<p>design, logos, international marketing, standardization, adaptation, structural equation models, Gibbs sampling, concomitant variable, Bayesian, mixture models</p>
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**CROSS-NATIONAL LOGO EVALUATION ANALYSIS:  
AN INDIVIDUAL LEVEL APPROACH**

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Ralf van der Lans  
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M. Janakiraman  
B. Ramaseshan  
Bernd H. Schmitt

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Ralf van der Lans is Assistant Professor of Marketing, Rotterdam School of Management, Erasmus University, Rotterdam. Joseph A Cote is Professor of Marketing, Washington State University. Catherine A. Cole is Professor of Marketing at the Henry B. Tippie College of Business at The University of Iowa. Siew Meng Leong is Professor of Marketing, NUS Business School, National University of Singapore. Ale Smidts is Professor of Marketing Research, Rotterdam School of Management, Erasmus University, Rotterdam. Pamela W. Henderson is owner of New Edge Inc., a marketing consulting firm in Richland WA. Christian Bluemelhuber is Professor of Marketing at the Technical University of Munich. Paul A. Bottomley and John R. Doyle are Distinguished Senior Research Fellow and Professor of Marketing, respectively, at the Cardiff Business School, Cardiff University, UK. Alexander Fedorikhin is Associate Professor of Marketing at Kelley School of Business, Indiana University, Indianapolis. M. Janakiraman is Associate Professor of Marketing, Indian Institute of Management at Lucknow. B. Ramaseshan is Professor of Marketing and Head, School of Marketing, at Curtin University of Technology, Perth, Australia. Bernd H. Schmitt is the Robert F. Calkins Professor of International Business and Director of the Center on Global Brand Leadership at Columbia Business School.

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Please send correspondence regarding this manuscript to Joseph A Cote, Department of Marketing, Washington State University, 14204 NE Salmon Creek Avenue, Vancouver, WA 98686; 360-546-9753; [cote@wsu.edu](mailto:cote@wsu.edu).

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**Abstract**

The universality of design perception and response is tested using data collected from ten countries: Argentina, Australia, China, Germany, Great Britain, India, the Netherlands, Russia, Singapore, and the United States. A Bayesian, finite-mixture, structural-equation model is developed that identifies latent logo clusters while accounting for heterogeneity in evaluations. The concomitant variable approach allows cluster probabilities to be country specific. Rather than a priori defined clusters, our procedure provides a posteriori cross-national logo clusters based on consumer response similarity. To compare the a posteriori cross-national logo clusters, our approach is integrated with Steenkamp and Baumgartner's (1998) measurement invariance methodology. Our model reduces the ten countries to three cross-national clusters that respond differently to logo design dimensions: the West, Asia, and Russia. The dimensions underlying design are found to be similar across countries, suggesting that elaborateness, naturalness, and harmony are universal design dimensions. Responses (affect, shared meaning, subjective familiarity, and true and false recognition) to logo design dimensions (elaborateness, naturalness, and harmony) and elements (repetition, proportion, and parallelism) are also relatively consistent, although we find minor differences across clusters. Our results suggest that managers can implement a global logo strategy, but they also can optimize logos for specific countries if desired.

**Keywords:** design, logos, international marketing, standardization, adaptation, structural equation models, Gibbs sampling, concomitant variable, Bayesian, mixture models

## 1. Introduction

Design is a language that communicates to consumers and others, independent of verbal information. Hence, it is critical that marketing managers and scholars understand design's impact on viewers. In general, visual information is processed differently from, faster than, and independent of verbal information (Edell and Staelin, 1983). In addition, visual information can trigger affect prior to cognitive processing (Lutz and Lutz, 1977).

Most marketing research has examined how individual design elements such as color, symmetry, proportion, and angularity affect consumers' reactions (e.g., Pittard et al., 2007). While such research is useful, it is like studying alphabets — critical to understanding but offering limited insight into word or sentence meaning. Henderson and Cote (1998), in an early attempt to understand broader design characteristics, uncovered three basic design dimensions: elaborateness, naturalness, and harmony. Elaborateness refers to a design's richness and its ability to capture the essence of an object; natural designs depict commonly experienced objects; and harmony refers to the congruency of the patterns and parts of a design. Extending our analogy, these design dimensions act as words instead of letters. Preliminary evidence indicates that these design dimensions are important for understanding reactions to a variety of marketing stimuli such as typeface (Henderson et al., 2004) and wine bottle design (Orth and Malkewitz, 2008).

While the evidence suggests that elaborateness, naturalness, and harmony are universal words that are useful for understanding visual marketing stimuli, we have limited evidence about whether these design dimensions exist across cultures. We also do not know if people from different cultures respond in the same way to these design dimensions. Evolutionary psychology suggests that human response to visual stimuli is genetically programmed and relatively immune

from cultural influence (Adams, 2003). For example, we have an innate ability to determine what stimulus features provide information across several domains including evaluations of landscapes (Orians and Heerwagen, 1992), facial expressions of emotion (Ekman, 1998), and physical attractiveness (Jones, 1996). However, some research on reactions to individual design elements find cultural differences (e.g., Perfetti et al., 2005, Zhang et al., 2006), while others such as Pittard (2007) report similarities across cultures.

Given the literature's conflicting findings, our study examines whether the design dimensions uncovered by Henderson and colleagues underlie reactions to logos in ten different countries: Argentina, Australia, China, Germany, Great Britain, India, the Netherlands, Russia, Singapore, and the United States. Using consumer and designer ratings of 195 stimuli, we apply a Bayesian finite-mixture, structural-equation model employing an MCMC algorithm to uncover latent differences in cultural perceptions of and responses to designs. This will provide the most comprehensive and rigorous test to date of such cultural variations regarding design dimensions (as opposed to individual design elements<sup>1</sup>). Specifically, we build upon Henderson and Cote (1998) to examine the following research questions:

1. Do the design dimensions of elaborateness, naturalness, and harmony exist cross-nationally?
2. Are consumers' responses to these design dimensions stable cross-nationally?

Beyond studying the theoretical questions of design dimension universality and consumer response stability, our paper also makes a methodological contribution. Research in experimental aesthetics typically analyzes data at the stimulus level by averaging individual judgments for each stimulus (e.g., Henderson and Cote, 1998). However, such an approach does not consider heterogeneity in individual responses, which will mask information contained in individual response variation. This may bias correlations between judgments about different stimuli

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<sup>1</sup> A design element is a single characteristic, while a design dimension is a combination of elements.

(DeShon, 1998). Thus, we extend finite-mixture, structural-equation models (DeSarbo et al., 2006) to simultaneously analyze responses at the stimuli level while accounting for individual judgment heterogeneity through an additional hierarchical layer. Our model also uses a concomitant variable specification (ter Hofstede et al., 1999) to allow the probabilities of stimuli's latent clusters membership to vary across countries. We then use the country-specific cluster probabilities to interpret the latent clusters. Last, we assess measurement invariance (Steenkamp and Baumgartner, 1998) across clusters rather than across countries. This offers two advantages. First, the number of cross-national clusters is usually smaller than the number of countries if many countries are studied – so fewer computations are required and invariance testing is more tractable (invariance tests grow exponentially with the number of countries). Second, Steenkamp and Baumgartner's framework usually selects countries a priori, while our approach is not restricted to country.<sup>2</sup> A priori allocations may not be realistic because “consumers in different countries often have more in common with one another than with other consumers in the same country” (ter Hofstede, Steenkamp and Wedel, 1999).

We use logos as a context to examine the research questions. As a key component of corporate visual identity, managers employ logos to create positive emotions, convey meaning, or enhance recognition about the company and brand. However, managers have expressed uncertainty about how to manage corporate visual identity systems globally (e.g. see, Alashban et al., 2002). The literature suggests that logos are most often used in an unaltered form when going abroad (Kapferer, 1992). Does using unaltered logos in new markets accomplish their communication goals, or would it be necessary to modify logos for individual countries? Depending on our findings, managers can either feel secure using standardized logos and other

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<sup>2</sup> The constrained finite-mixture does not require that all stimuli within a country be part of the same cluster. Any cluster may contain only a portion of stimuli from a given country.







































































































