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An investigation of the cross-national determinants of customer satisfaction

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Abstract Many multinational corporations have implemented cross-national satisfaction measurement programs for tracking and benchmarking the satisfaction of their customers across their various markets. These companies measure satisfaction with the goal of maximizing customer loyalty and the financial benefits associated with loyalty. However, existing research comparing consumer satisfaction across nations is limited, with the few existing studies examining only a small number of countries or predictors of satisfaction, or a small group of consumers within a particular economic sector. To expand our knowledge of the determinants of cross-national variation in customer satisfaction, we study three sets of factors: cultural, socioeconomic and political-economic. We utilize a unique sample of cross-industry satisfaction data from 19 nations, including nearly 257,000 interviews of consumers. Consistent with our hypotheses, we find that consumers in traditional societies have higher levels of satisfaction than those in secular-rational societies. Likewise, consumers in self-expressive societies have higher levels of customer satisfaction than those in societies with survival values. We also find that literacy rate, trade freedom, and business freedom have a positive effect on customer satisfaction while per capita gross domestic product has a negative effect on customer satisfaction. We discuss the implications of these findings for policymakers, multinational corporations, and researchers.

Keywords Customer satisfaction · International and cross-cultural marketing · Multinational corporations · Economic freedom

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Introduction

As firms globalize their operations, examining cross-national differences in consumer attitudes and behaviors has become a topic of considerable interest. This invigorated interest is due in large part to the rising importance of foreign revenues and profits for U.S. firms and the need to understand how to improve customer satisfaction and loyalty in foreign markets. According to some estimates, 48% of the revenues of S&P 500 companies in 2008 came from abroad (Vigna and Shipman 2010), and the share of international profits as a percentage of total profits has risen from 5% during the 1960s to over 25% in 2008 (Aeppel 2007). Researchers, research practitioners and corporations are keenly interested in determining the sources and consequences of cross-national differences in consumer attitudes and behaviors, particularly as a growing number must understand these attributes in multiple national contexts simultaneously. Although several studies have examined the role of national culture in explaining cross-national variance in phenomena like customer satisfaction,

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consumer expectations, price sensitivity, service quality, loyalty, and so forth, they have limited generalizability because prior work uses only a small number of countries and regions, a limited set of predictor variables, and/or a small group of consumers within a particular economic sector.

This paper examines a variety of national-level predictors we hypothesize will be correlated with cross-national variation in satisfaction—including cultural, socioeconomic, political-economic, and sector/industry type factors. We use a unique and very large sample of cross-national, cross-industry customer satisfaction data from 19 nations in diverse regions of the world, including nearly 257,000 interviewed consumers. Consistent with our hypotheses, we find that consumers in traditional societies have higher levels of satisfaction than those in secular-rational societies. Likewise, consumers in self-expressive societies have higher levels of customer satisfaction than those in societies with survival values. We also find that literacy rate, trade freedom, and business freedom have a positive effect on customer satisfaction while per capita gross domestic product has a negative effect on customer satisfaction.

This study contributes to the existing literature in several ways. First, by providing the first truly multi-national, multi-industry investigation of customer satisfaction, this study provides useful insights particularly as they pertain to disentangling possible sources of variation in consumer satisfaction (or related variables) across nations. Second, this study should prove valuable to market research practitioners within multinational corporstions (MNCs) engaged in multinational customer satisfaction measurement programs, as increasingly these researchers are tasked with deciphering differences in satisfaction across many different nations and regions, and making vital decisions based on this information. Finally, this study provides insight and guidance to MNCs in their international growth strategies, and to policymakers within nations seeking economic growth through improved customer satisfaction.

Cross-national customer satisfaction

Firms are increasingly focused on international markets to improve sales and profitability (Ghemawat 2007). Crossing national boundaries, however, makes it more difficult for managers to deliver consistent service, to meet customers' unique needs, and to judge the performance of disparate operations in successfully satisfying customer needs and wants. As a result, customer satisfaction measurement has become an international phenomenon. It is common today for multinational corporations to implement satisfaction measurement programs, with data collected using standardized instruments in multiple languages across a dozen or

more countries/markets and results compared across these markets and utilized as the basis for performance incentives, operational decision-making, and process improvement.

The overriding goal of these programs is more than just the creation of happier customers. Rather, cross-national satisfaction measurement is driven by the underlying belief that improving satisfaction will result in increased customer loyalty and the financial benefits typically associated with more loyal customers. A large body of research supports this belief. Research has found that customer satisfaction has a measurable impact on purchase intentions (Kumar 2002; Mittal et al. 1998, 1999), customer retention (Anderson and Sullivan 1993; Ittner and Larcker 1998; Loveman 1998; Mittal and Kamakura 2001), positive word-of-mouth (Anderson 1998; Parasuraman et al. 1988, 1991), and financial performance (Anderson and Fornell 1994; Anderson et al. 1994, 1997; Anderson and Mittal 2000; Bernhardt et al. 2000; Fornell et al. 1996; Keiningham et al. 1999; Rust and Zahorik 1993). Customer satisfaction has also been shown to positively impact equity prices and valuation ratios such as Tobin's q (Anderson et al. 2004), market-to-book ratio (Ittner and Larcker 1998), cash flow variability (Gruca and Rego 2005), and stock prices and shareholder value (Aksoy et al. 2008; Anderson et al. 2004; Fornell 2007; Fornell et al. 2006, 2009a, b) and to lead to lower volatility in stock returns and lower systematic risk (Tuli and Bharadwaj 2009). In sum, research into customer satisfaction overwhelmingly supports the position that satisfaction impacts consumer intentions and business outcomes typically associated with customer loyalty and thus supports the implementation of these cross-market, cross-national satisfaction measurement programs.

For these multinational corporations, however, operationalizing satisfaction efforts globally to secure customer loyalty across a variety of often very different markets presents distinct challenges. Academic researchers and research practitioners have long recognized that consumers from different cultures and countries vary in their response styles in surveys (i.e., in how they use rating scales). As a result, researchers have sought ways to effectively equate responses from various cultures to allow for meaningful comparisons (e.g., Iacobucci et al. 2003; Smith and Reynolds 2001; Steenkamp and Baumgartner 1998). The underlying assumption in these calibrations, particularly as they relate to satisfaction, is that different rating levels between cultures can correspond to the same actual levels of satisfaction, and thus to potentially very different conclusions, recommendations, and operational implications.

Yet for the researcher or practitioner exploring cross-national consumer satisfaction, the issue is much more complex than just determining culturally-invariant ratings scale levels that allow managers to compare the performance of various business units. While culture has been

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found to complicate interpretation of differences in survey data, we would also expect a variety of national-level differences to have a substantial effect on a phenomenon such as consumer satisfaction. Indeed, a range of cross-national differences—including culture, but also political, economic, and socio-economic factors—are likely to influence both how consumers perceive and respond to their consumption experience and the level of satisfaction delivered by an economy. For example, are consumers within more competitive, freer market economies generally more or less satisfied? Do national-level variations in consumer wealth or literacy impact consumer satisfaction? What role, if any, do political institutions or political-economic policy play in driving satisfaction? Do these differences impact how researchers and managers should interpret cross-national/cross-cultural satisfaction results? Might these differences also offer insight into the markets multinational corporations should focus on (or avoid) in their international expansion efforts, due to differential "thresholds of satisfaction" across nations? And perhaps most importantly, could these results even provide evidence of the importance of customer satisfaction to policymakers within nations as they set essential social, political and economic policy?

Given the importance of these and related questions to policymakers, the growing number of enterprises operating across countries, and the expanding cohort of researchers working in this area, one would expect a significant body of literature on cross-national consumer satisfaction to have emerged. Yet while a few studies have explored these and related topics, such as cross-national service quality, complaint behavior, customer loyalty, etc. (Brady and Robertson 2001; Donthu and Yoo 1998; Furrer et al. 2000; Khan et al. 2009; Lam 2007; Liu and McClure 2001; Malai and Speece 2005; Straughan and Albers-Miller 2001; Ueltschy and Krampf 2001), the extant literature remains quite limited. Most existing studies analyze survey data from only two to four countries (and only one or two regions of the world), include data on only a single industry or economic sector, and/or focus exclusively on the role of culture (and not other potentially important factors) in explaining cross-national differences in satisfaction. Therefore, even at best, the ability of researchers and managers to generalize from these findings is limited. Against this backdrop, our goal in this paper is to study the influence of several national-level factors on cross-national customer satisfaction in 19 countries—Denmark, Estonia, Finland, Colombia, Czech Republic, Hong Kong, Iceland, Japan, Latvia, Lithuania, Norway, Russia, Singapore, Sweden, Thailand, Turkey, Ukraine, the United Kingdom, and the United States—using a sample of consumer survey data from national satisfaction indices in each of these countries.

Hypotheses

In what follows, we present six hypotheses in three categories that we argue should help explain cross-national variance in customer satisfaction: cultural, socio-economic, and political-economic factors.

The case for cultural differences

For most of the decisions we make, it is impossible to separate our choices from the culture through which we filter and interpret information, the symbols and values that lend meaning to our lives. Individuals in every society make decisions and pursue life plans against the backdrop of a complex network of cultural relationships influencing these decisions. Hofstede defines culture as "the collective programming of the mind which distinguishes the members of one group or category of people from those of another" (1994, p. 4). Furthermore, despite heterogeneity among individuals, Sivakumar and Nakata (2001, p. 559) observe that "within any nation-state there is a modal set of values. Other values may co-exist, but one set is more common and thus broadly descriptive of the society as whole. This value set constitutes a country's 'national culture'."

Given the pervasive influence of national culture on how individuals perceive and interact with their environment, this "collective programming" is also likely to impact individual members of society in their role as consumers. A growing body of research has confirmed the importance of culture to cross-national marketing, discovering a link between it and a range of relevant consumer intentions and behaviors. For example, prior research suggests a link between culture and customer satisfaction (Khan et al. 2009), consumer expectations (Donthu and Yoo 1998; Tsikriktsis 2002), sensitivity to prices (Ackerman and Tellis 2001), consumer tipping behavior (Lynn et al. 1993), perceptions of service quality (Furrer et al. 2000; Mattila 1999), the relationship between price and perceived quality (Jo and Sarigollu 2007) and between perceived service quality and satisfaction (Reimann et al. 2008), complaint behavior (Liu and McClure 2001), brand loyalty intention (Lam 2007), and loyalty to domestic (versus foreign) retailers (Straughan and Albers-Miller 2001). Given these and related findings, there is a strong likelihood national culture will also help explain cross-national variance in consumer satisfaction.

Most cross-cultural studies in the marketing discipline have employed Hofstede's (1983) five dimensions of culture to test its importance. However, given some of the limitations of the Hofstede dimensions, and particularly the age of the data and the lack of coverage of certain countries (including four countries in our sample), we adopt an alternative set of cultural indicators. Following Inglehart

and Baker, we identify two broad, dichotomous measures of national-cultural values, multidimensional indicators that have been linked empirically to modernization (defined broadly) within nations: traditional vs. secular-rational values, and survival vs. self-expression values (Inglehart 1997; Inglehart and Baker 2000, p. 25).[1] Inglehart and Baker define the traditional vs. secular-rational cultural values dichotomy as follows:

> Yet although the people of traditional societies have high levels of national pride, favor more respect for authority, take protectionist attitudes toward foreign trade, and feel that environmental problems can be solved without international agreements, they accept national authority passively… They emphasize social conformity rather than individualistic striving, favor consensus rather than open political conflict, support deference to authority, and have high levels of national pride and a nationalistic outlook. Societies with secular-rational values have the opposite preferences on all of these topics.

Furthermore, Inglehart and Baker define the survival vs. self-expression values dichotomy in this way (Inglehart and Baker 2000, p. 28):

> Societies that emphasize survival values show relatively low levels of subjective well-being, report relatively poor health, are low on interpersonal trust, relatively intolerant of outgroups, are low on support for gender equality, emphasize materialist values, have relatively high levels of faith in science and technology, are relatively low on environmental activism, and relatively favorable to authoritarian government. Societies high on self-expression values tend to have the opposite preferences on these topics.

A few aspects of Inglehart and Baker's formulation of national-cultural values strike us as significant, and point to potential relationships between these values and consumer satisfaction. Beginning with the traditional vs. secular-rational values dichotomy, individuals in traditional societies strive for consensus and the minimization of conflict, and value conformity over individuality. Passivity and deference to authority is the norm in traditional societies, and open conflict or disagreement is frowned upon. On the

other hand, secular-rational societies tend to produce individuals who are less constrained by the traditional structures of authority (religious, familial or political) that both shape and direct judgment and opinion. While these values undoubtedly impact political institutions within these societies, they should also impact economic relationships and consumer perceptions of economic institutions, and thus both actual consumer experiences and the way in which consumers recall these experiences. Therefore, we suggest that as societies move away from traditional and toward secular-rational values, individual consumers will be more willing to reject authority, question institutions, and thus be more able (and willing) to both form independent critical judgments about and express lower satisfaction with a consumption experience. Thus,

H1: Consumers in more secular-rational societies will express lower satisfaction with the goods and services they have experienced.

On the other hand, in self-expressive, post-industrial societies, individuals take physical and economic security for granted (i.e., lose their survival values). The greater levels of interpersonal trust that have developed in these societies should extend beyond personal relationships to other human interactions, including consumer interactions. Stronger perceptions of health and subjective well-being in self-expressive societies should also correlate to greater happiness and satisfaction with a range of life experiences for these individuals. For these reasons, we suggest that as societies move away from survival and toward self-expressive values, satisfaction with consumption experiences will increase. Therefore,

H2: Consumers in more self-expressive societies will express greater satisfaction with the goods and services they have experienced.

The case for socioeconomic differences

Marketing research at the individual-consumer level has demonstrated a relationship between the characteristics of consumers and their attitudes and behaviors. Marketing practitioners have long understood that different groups of customers are not the same (Claycamp and Massy 1968), leading to the development of customer segmentation models and differentiated customer relationship management strategies within many companies. Moreover, not only do different groups of consumers expect different attributes from a product or service, in terms of the marketing mix, but some customers are harder to satisfy than others (Anderson et al. 2008; Bryant and Cha 1996; Mittal and Kamakura 2001). Given the well-established link between consumer characteristics and satisfaction at the individual

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[1] It is worth noting that the Baker-Inglehart cultural dimensions are strongly correlated to the Hofstede dimensions (IDV, UAI, PDI and MAS) for the countries in our study (where data exists for both sets of dimensions). Regressing the traditional vs. secular-rational values dimension on these four predictors produces a multiple correlation of $r=0.57$, with PDI having the strongest influence. Likewise, regressing the survival vs. self-expression values dimension on these four predictors produces a multiple correlation of $r=0.91$, with PDI and IDV having roughly equal influence.

level, it is reasonable to assume that these relationships apply at a higher level of aggregation as well, at the national level. More specifically, we suggest that, similar to findings at the individual-consumer level, two national-level socioeconomic indicators—wealth and literacy—are likely to be related to cross-national variation in satisfaction (Anderson et al. 2008; Bryant and Cha 1996; Mittal and Kamakura 2001).

Economic prosperity within a nation—measured by a traditional indicator such as per capita gross domestic product (GDP)—could be assumed to be positively related to consumer satisfaction. Research at the consumer level once made this assumption as well, suggesting that wealthier consumers should be more satisfied consumers (Anderson et al. 2008; Bryant and Cha 1996; Mittal and Kamakura 2001). On this line of reasoning, it was postulated that because more prosperous consumers should have a greater ability to purchase the goods capable of satisfying them, and because the more expensive goods purchased by higher income consumers are typically of higher quality, these consumers should be more satisfied. However, research has consistently shown that as income increases, consumers in fact tend to become more critical of the goods they consume and less satisfied, most likely as a consequence of the higher standards and more discerning nature of these consumers (Anderson et al. 2008; Bryant and Cha 1996). Following from these findings and extrapolating to the national level, we suggest that:

H3: Consumers in societies with higher per capita gross domestic product will express lower satisfaction with the goods and services they have experienced.

On the other hand, we suggest that a higher literacy rate within a nation should lead to greater satisfaction among consumers. In the first instance, consumers with increased access to information conferred by literacy should be able to conduct more effective research and make better decisions about which goods to consume (across all economic sectors), and thus should be more satisfied with the goods finally selected and consumed. Also, literate consumers should, for instance, be better able to function in the rapidly growing number of "self-service technology" (SST) environments marking both developed and developing countries. Literate consumers are likely to be, in short, "better" consumers, more capable of self-gratification through educated choices and greater competence. Moreover, and perhaps most vitally, a higher national literacy rate should lead to greater customer satisfaction through a higher-quality labor force generated by increased literacy. The link between literacy and a high-quality, competitive workforce has been previously noted (Berryman 1994), and this relationship is particularly important in terms of customer satisfaction. That is, given the centrality of the

provision of (human) services and the services sector to both developed and developing economies, and the importance of a well-trained, literate labor pool across nearly every economic sector, increased literacy should result in stronger consumer satisfaction. Therefore,

H4: Consumers in societies with higher literacy rates will express greater satisfaction with the goods and services they have experienced.

The case for political-economic differences

Differences between nations extend beyond cultural and socioeconomic factors, of course. In particular, nations often differ greatly in their political history and culture, political institutions, and the resultant political-economic policies in ways that can dramatically impact a marketplace. These factors—generally referred to as components of a country's economic freedom—directly impact not only the ability of international firms to enter a market, but also the incentives a firm has to satisfy its customers in that market (Thompson 2004). Such factors also impact the options presented to consumers in terms of competitive alternatives, which in turn influence how customers can manifest their brand/firm loyalty.

The potential link between the economic freedom or competitiveness of a nation and the satisfaction of its consumers has long been noted. The most basic precepts of free market economics, going back at least to Adam Smith, suggest that consumers should experience greater utility (or satisfaction) from goods consumed within a free market economy. Because competition among suppliers to attract and win loyal customers results in higher quality products and services, lower prices, and so forth, competition should be positively related to consumer satisfaction. More recently, research by Johnson et al. (2002) argues that firms in countries with higher levels of economic freedom will have a greater motivation to satisfy their customers. They argue that this is driven in large part by the greater ability and economic incentive of entrepreneurial ventures to be established and flourish through an increased focus on better satisfying customer needs. Therefore, we would expect that greater economic freedom would positively impact satisfaction within a nation. The logic here is straightforward—less economic freedom means less choice for consumers.

While economic freedom is a complex, multi-dimensional concept, we suggest that two of its dimensions—the openness of a market to foreign trade and international commerce, and the openness of a market to internal business development—should be relevant vis-à-vis customer satisfaction. Both of these types of economic freedom should increase competition and broaden the number, quality and pricing of competitive

alternatives in a manner beneficial to the consumers (and their satisfaction) within these nations. Therefore, with regard to economic freedom we suggest the following hypotheses:

H5: Consumers in societies with fewer barriers to free trade and international commerce will express greater satisfaction with the goods and services they have experienced.

H6: Consumers in societies with fewer barriers to internal business development will express greater satisfaction with the goods they have experienced.

Data and measures

Data collection and the customer satisfaction variable

To test the hypotheses outlined above, we analyze a cross-national sample of consumer satisfaction survey data. The dataset consists of interviews with customers in 19 nations —Denmark, Estonia, Finland, Colombia, Czech Republic, Hong Kong, Iceland, Japan, Latvia, Lithuania, Norway, Russia, Singapore, Sweden, Thailand, Turkey, Ukraine, the United Kingdom, and the United States. All of the data were collected for analysis by research groups implementing national customer satisfaction indices employing a common methodology (to the extent possible) and a common customer satisfaction model. This model was first implemented in 1989 in Sweden with the Swedish Customer Satisfaction Barometer (SCSB) and later applied in the United States by the American Customer Satisfaction Index (ACSI) and across Europe by the Extended Performance Satisfaction Index (EPSI Rating) (Bryant et al. 2008; Eklöf and Selivanova 2008; Fornell 1992; Fornell et al. 1996). Through partnerships with the ACSI, the same model is also being applied in a variety of additional nations, providing the broad and diverse dataset available for analysis.[2]

For each of these national satisfaction indices, interviews of customers were conducted by local market research firms to measure consumer experiences with a range of econom-

ically important companies, industries and economic sectors. In each nation, the administered questionnaire consists of a core set of questions on both the antecedents and outcomes of customer satisfaction, including customer expectations, perceptions of quality and value, complaint behavior, and customer loyalty. To maximize comparability and study equivalence across nations, several steps were taken (Smith and Reynolds 2001). First, the administered questionnaire was kept as homogenous as possible at all levels of measurement to maximize comparability across companies, industries and economic sectors. The groups administering data collection in each country followed the same set of methods, and therefore interviewing parameters, survey question wording, response scales, and so forth were kept as identical as possible, or altered where culturally appropriate and necessary, across the 19 countries. To establish temporal equivalence, the sample includes data collected during the 2007 calendar year for all nations.

Furthermore, prior to data collection, the questionnaires were translated into the appropriate local language(s), back-translated, and checked for consistency. Interviewing was done using face-to-face, online, and computer-assisted telephone interviewing (CATI) techniques, depending on local necessities and standard market research practices in each country. Appropriate steps were taken in each country to insure a random sample drawn from as representative a cross-section of the population as possible, although "representativeness" in the context of these studies denotes something different for each measured industry. Each potential respondent was screened prior to interviewing to determine eligibility to participate, and the respondent was deemed eligible if he/she had personally purchased and consumed the particular type of product or service of interest within a defined timeframe (e.g., "shopped at a department store in the last 6 months"). This screening method ensures to some extent that respondents have had actual and relatively recent experience with the product or service being measured and thus the ability to report their satisfaction with the experience.

Once data collection was complete, analysis of the data was initially conducted using the statistical methodology first developed for the SCSB and ACSI (Fornell 1992; Fornell et al. 1996). This methodology employs a multiple-indicator latent variable approach for producing scores for satisfaction and the other measured latent variables. A form of partial least squares (PLS) structural equation modeling is used to estimate the measurement and structural models. While the survey questions are asked during interviewing on a 1–10 scale, the latent constructs are transformed to 0–100 indices during analysis. The customer satisfaction latent construct, the variable of interest for this study, is operationalized using three survey questions: overall (cumulative) consumption satisfaction,

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[2] Data for the United States was made available by the American Customer Satisfaction Index. Data for Denmark, Estonia, Finland, Czech Republic, Iceland, Latvia, Lithuania, Norway, Russia, Sweden, and Ukraine was made available by EPSI Rating. Data for the other seven nations was made available by organizations partnered with the ACSI and administering projects in their own countries: in Turkey, the Turkish Customer Satisfaction Index (TMME); in Colombia, the Customer Index Value (CIV); in the United Kingdom, the National Customer Satisfaction Index-UK (NCSI-UK); and in Singapore, the Customer Satisfaction Index of Singapore (CSISG). Data for Hong Kong, Japan and Thailand was provided by CSISG as part of a benchmarking study.

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the confirmation/disconfirmation of prior expectations, and comparison to an ideal (Bryant et al. 2008; Fornell et al. 1996).[3]

All of the latent constructs produced through this modeling procedure have been shown to have high reliability and validity, to accurately measure and reflect the "true" underlying phenomenon of consumer satisfaction (Fornell et al. 1996). Most importantly, the satisfaction latent variable has been empirically linked to a variety of external measures of corporate and financial performance, providing the most important evidence of validity (Aksoy et al. 2008; Anderson et al. 2004; Fornell et al. 2006, 2009a, b; Gruca and Rego 2005; Tuli and Bharadwaj 2009).

Using these methods, latent satisfaction index scores (unweighted mean scores from the case-level data) were produced in each country for each measured company. However, rather than analyzing either case-level or company-level satisfaction scores, the unit of analysis in our study will be industry-level index scores for all measured industries across all nations. Industry-level scores are produced in each country by weighting the company satisfaction scores by market share (i.e., company sales relative to total industry sales), and then aggregating these results to produce weighted industry satisfaction scores. Mathematically, these industry index scores are calculated as:

$$\text{Index for Industry } i \text{ at time } t = I_{it} = \sum_{f}^{F} \frac{S_{fit} I_{fit}}{\sum_{f}^{F} S_{fit}} \qquad (1)$$

where

S_{fist} = Sales by firm f, industry i, sector s at time t
I_{fist} = Index for firm f, industry i, sector s at time t

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[3] There is a great deal of debate among social scientists regarding the empirical modeling of data across cultures, particularly as to whether general conclusions can be derived from the analysis of multiple cultures. The emic view holds that "attitudinal or behavioral phenomena are expressed in a unique way in each culture" (Usnier 1996, p. 142), and therefore models should be fitted separately by culture, with little comparison between cultures (Hofstede et al. 1993). On the other hand, the etic view is concerned with identifying universal constructs across cultures, and therefore cross-cultural analysis is justified. Iacobucci et al. (2003, p. 9) write, "Both philosophies are defensible on scientific grounds—generalization, abstraction, and parsimony support the etic [philosophy]." Specifically, with regard to cross-cultural satisfaction research, we believe the etic philosophy appropriate given the universal and generic nature of satisfaction. To quote Zeithaml et al. (2006, p. 170), "Customer satisfaction is the most widely used perceptual metric because it is generic and can be universally gauged for all products and services (including nonprofit and public services). Even without a precise definition of the term, customer satisfaction is clearly understood by respondents, and its meaning is easy to communicate to managers."

We analyze data at this level of aggregation because it both maximizes the sample available for analysis (i.e., a single company does not need to operate or have its satisfaction measured in each country for that company or industry to be included in our analysis), and because this approach provides a set of results most likely to minimize bias and error in the sample. That is, this type of aggregate-level analysis of satisfaction data has been advocated precisely on the grounds that it "should increase the stability and resulting comparability of satisfaction measures, as [through aggregation] individual differences become self-canceling random factors" (Johnson et al. 2002, p. 751).

While an identical assortment of industries was not measured in each country—due to both differential project objectives for the indices in each nation, and to different economic circumstances across the national economies (i.e., some industries and sectors are not as economically important in some nations)—the economic sectors included in the final sample are reasonably comparable (see Table 1 below). The total sample in terms of interviewed consumers is 256,875 across the 19 nations, but because we are analyzing industry-level satisfaction scores, our total sample is $N=272$. Table 1 provides the frequencies of industries included in the sample for each country, coded by NAICS sector (http://www.census.gov/eos/www/naics/).

Cultural and socioeconomic variables

For our cultural variables, we follow Inglehart and Baker's traditional vs. secular-rational and survival vs. self-expressive conceptualization of culture, discussed above, and append these variables to our sample. The Inglehart and Baker data is publicly available and was accessed through the "World Values Survey" (WVS) website (http://www.worldvaluessurvey.org/), the source of the survey data Inglehart and Baker use to compute their multidimensional constructs. We use data from the most recently available WVS wave for each country. Data for 2006 (the most recent wave) were available for nearly all of the countries in our sample, but where unavailable (in the Czech Republic, Denmark, Iceland, Latvia, Lithuania, and Singapore) we used data from the earlier 2000 WVS wave.

The data for both of these cultural indicators reflect national-level factor loadings from a case-level principal component factor analysis performed by Inglehart and Baker (2000). Each indicator includes five survey items. The resultant factor loadings reflect "low to high" results for each country, from traditional (low) to secular-rational (high), and from survival (low) to self-expression (high) values. Figure 1 illustrates the scores on both of these cultural indicators for each country in our sample.

The socioeconomic variables in our study—per capita gross domestic product and literacy rate—were accessed

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Table 1 Industry customer satisfaction data by NAICS sector

Country	NAICS sectors											Total
	Utilities	Transportation and warehousing	Information	Health care and social assistance	Accommodation and food services	Educational services	Manufacturing (nondurable goods)	Manufacturing (durable goods)	Public administration	Retail trade	Finance and insurance	
United States	1	3	12	1	3	0	8	5	4	5	4	46
Singapore	0	6	2	4	5	3	0	1	0	9	1	31
Hong Kong	0	2	2	3	3	1	0	0	0	6	1	18
Japan	0	2	2	2	4	2	0	0	0	5	1	18
Thailand	0	3	2	3	3	1	0	0	0	5	1	18
Colombia	0	0	1	2	0	0	0	1	0	1	2	7
Turkey	0	2	1	1	1	1	14	5	4	4	4	37
United Kingdom	0	0	1	0	2	0	0	1	0	0	3	7
Denmark	0	1	3	1	0	1	0	0	1	0	2	9
Finland	1	1	4	1	0	1	0	0	0	1	2	11
Norway	0	0	3	0	0	0	0	0	0	2	2	7
Sweden	1	5	3	3	0	4	0	0	2	5	5	28
Iceland	1	0	2	0	0	0	0	0	0	4	2	9
Czech Republic	0	1	1	1	0	1	0	0	0	0	2	6
Russia	0	1	1	0	0	0	0	0	0	0	1	3
Ukraine	0	1	1	0	0	0	0	0	0	1	2	5
Estonia	0	0	2	0	0	0	0	0	0	1	1	4
Latvia	0	0	2	0	0	0	0	0	0	1	1	4
Lithuania	0	0	2	0	0	0	0	0	0	1	1	4
Total	4	28	47	22	21	15	22	13	11	51	38	272

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from a widely-used source for this type of cross-national data, the U.S. Central Intelligence Agency's *World Fact-book* (https://www.cia.gov/library/publications/the-world-factbook/). For GDP, we use purchasing power parity-adjusted per capita GDP expressed in thousands of U.S. dollars, with 2007 results for this data (rather than the more recent 2008 or 2009 data) appended to the sample to match the year the customer satisfaction data was collected. The same data source was used for the literacy rate variable (defined as the percentage of individuals over 15 years of age capable of reading and writing), although the most recent year of reporting for this data varied across the 19 countries in our sample (from 2000 to 2005).

Political economy variables

Several independent sources of information exist to assist corporations and managers in determining inter-national opportunities and risks. One of the most widely used measures of economic freedom is the Index of Economic Freedom produced by the Heritage Founda-tion (http://www.heritage.org/Index/). For this index, economic freedom is measured as a function of ten interrelated components: Trade Freedom, Business Free-dom, Financial Freedom, Fiscal Freedom, Government Size, Monetary Freedom, Investment Freedom, Property Rights, Freedom from Corruption, and Labor Freedom. Two of these measures of economic freedom—trade and business freedom—most closely match the hypotheses we present above.

In the Heritage dataset, Trade Freedom is defined as an absence of obstacles to international commerce (such as tariffs and non-tariff barriers), and is scaled from 0–100, with a higher score on the scale indicative of a market more open to free trade and international commerce. Business Freedom is defined as an absence of regulations

(concerning opening a business, closing a business, obtain-ing licenses, etc.) that impact entrepreneurship and impede internal private sector growth. This variable is also scored on a 0–100 scale, with a higher score indicating fewer government regulations and greater business freedom. Figure 2 illustrates the scores on both of these economic freedom indicators for each country in our sample.

Sector control variables

Finally, we include in our sample (and below in our analysis) a group of sector-level control variables, dummy variables corresponding to the sector frequencies in each country shown in Table 1. We add these controls for two reasons. First, several studies have demonstrated a relation-ship between the industry from which a product or service comes and the resultant level of customer satisfaction, both within and across nations (Anderson 1994; Fornell and Robinson 1986; Fornell et al. 1996, 2005; Johnson and Fornell 1991; Johnson et al. 2002). The amount of competition within an industry (i.e., monopolistic vs. free markets) and the quantity of human intervention required in a consumption experience (i.e., services vs. tangible goods) have been suggested as likely explanations for cross-industry variation in customer satisfaction (Fornell and Robinson 1986; Johnson and Fornell 1991). Nevertheless, this phenomenon has been pervasive enough, and its effects potentially serious enough, to warrant the inclusion of controls in any cross-industry investigation of customer satisfaction.

Second, as mentioned earlier and as Table 1 demon-strates, our sample of customer satisfaction data by industry and sector is not invariant across country. That is, not all industries or sectors are measured in each country in our sample, and in some cases measurement was performed for several industries within a sector in one country, and none at all in another. Without controlling for these sampling
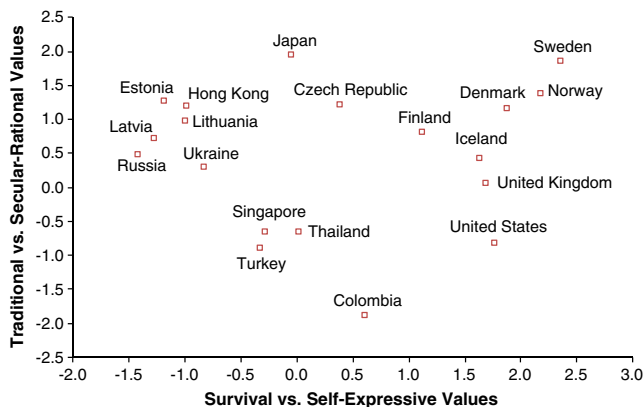

Fig. 1 Traditional vs. secular-rational and survival vs. self-expressive values by nation
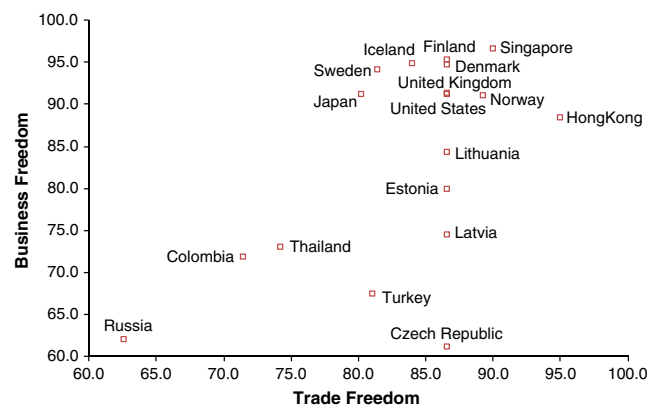

Fig. 2 Heritage trade freedom and business freedom values by nation

differences, it would be difficult to differentiate what is real cross-national variance in satisfaction from the impact of the industries included for measurement in each country. Descriptive statistics for all variables are provided in Table 2. Correlations among the variables (excluding the dummy variables) are provided in Table 3.

Statistical methods and models

To test our hypotheses and the effects of these national-level variables on cross-national customer satisfaction, we estimate several regression models. While alternative modeling techniques were considered, the limitations of the existing literature and the lack of a strong theoretical rationale pointing to alternative methods (such as principal component path analysis, structural equation modeling, nonlinear estimation, and so forth) suggests linear modeling.[4] Thus, we specify standard cross-sectional models of the form:

$$Y_i = X_i \beta + \varepsilon_i, \qquad (2)$$

where Y represents the response variable; X represents a vector of determinants of the response variable; βs are the parameters to be estimated; and ε is the error term associated with each observation i.

Our first equation includes the satisfaction data for all measured industries across all 19 nations (i.e., the full sample of $N=272$ industries). This model tests the six hypotheses presented above and includes all of the predictor variables, as well as ten dummy variables as controls corresponding to each NAICS sector from Table 1. This model thus takes the form:

$$
\begin{aligned}
Y^{CSI} = {} & \alpha + \beta^{TRAD} + \beta^{SURV} + \beta^{GDP} + \beta^{LIT} + \beta^{TRADE} \\
& + \beta^{BUS} + \gamma^{UTILS} + \ldots + \gamma^{FIN} + \varepsilon,
\end{aligned} \qquad (3)
$$

where Y represents the industry-level customer satisfaction response variable; TRAD represents the traditional vs. secular-rational cultural variable; SURV represents the survival vs. self expression cultural variable; GDP repre-

sents the per capita purchasing power parity-adjusted gross domestic product variable; LIT represents the literacy rate variable; TRADE and BUS represent the trade freedom and business freedom variables, respectively; UTILS… FIN the ten NAICS sector dummy variables (abbreviated, with the Health Care sector serving as the reference category); and ε the error term. Results from this model are presented in Table 4.

In addition to this primary model, we estimate two further models. Because our total sample in terms of measured industries is relatively small and therefore more susceptible (potentially) to fluctuations in the parameter estimates, we estimate these two equations as a form of sensitivity analysis and a test of model robustness (Chatterjee and Hadi 1988). In these two models, we include the same six predictors discussed above, but truncate our sample and include observations from only two NAICS sectors (one in each model) where at least some data is available for each nation—the Finance and Insurance sector, and the Information sector. Results from these two models should provide insight into the stability of the estimates under varying model specifications. Results from these two models are provided in Tables 6 and 7. Results for all three models are discussed in the next section.

We offer one final test of the robustness of the estimates in our models using bootstrapping. Because we have limited knowledge about the cross-national population distribution of customer satisfaction, and because our sample is relatively

---

[4] We also considered the use of hierarchical linear modeling (HLM) for our analysis. HLM extends the traditional multiple linear regression model to multi-level data, where effects for different groups or clusters within the sample (such as nation-states, to use a relevant example from our data) are thought to exhibit unique characteristics (West et al. 2007). However, because the purpose of HLM is to test and compare random slope variances at the cluster level, and because a few of the nation-states in our sample provide only a few observations (once data is aggregated to the sector level), such an approach would produce results with limited power and reliability (Snijders 2005). For this reason, we deemed OLS to be the more appropriate method.

Table 2 Descriptive statistics for model variables

	N	Min	Max	Mean	SD
Customer satisfaction	272	47.90	85.70	71.216	6.464
Traditional vs. Secular rational	272	−1.87	1.96	0.184	1.127
Survival vs. Self-expression	272	−1.42	2.35	0.597	1.176
Heritage trade freedom (2007)	272	62.60	95.00	84.154	5.864
Heritage business freedom (2007)	272	43.60	96.70	85.074	12.485
Per capita GDP (PPP, 2007)	272	7.10	58.00	33.462	15.641
Literacy rate (2007)	272	87.40	100.00	95.781	4.420
Utilities dummy	272	0.00	1.00	0.015	0.121
Transportation dummy	272	0.00	1.00	0.103	0.304
Information dummy	272	0.00	1.00	0.173	0.379
Health care dummy	272	0.00	1.00	0.081	0.273
Accommodation dummy	272	0.00	1.00	0.077	0.267
Education dummy	272	0.00	1.00	0.055	0.229
Nondurable dummy	272	0.00	1.00	0.081	0.273
Durable dummy	272	0.00	1.00	0.048	0.214
Public dummy	272	0.00	1.00	0.040	0.197
Retail dummy	272	0.00	1.00	0.188	0.391
Finance dummy	272	0.00	1.00	0.140	0.347

Table 3 Correlations for model variables (excluding dummy variables)

	1.	2.	3.	4.	5.	6.
1. Customer satisfaction	–	–	–	–	–	–
2. Traditional vs. Secular rational	−0.478**	–	–	–	–	–
3. Survival vs. Self-expression	0.011	0.156**	–	–	–	–
4. Trade freedom (2007)	−0.154*	0.129*	0.015	–	–	–
5. Business freedom (2007)	−0.273**	0.302**	0.503**	0.552**	–	–
6. Per capita GDP (PPP, 2007)	−0.284**	0.209**	0.449**	0.728**	0.864**	–
7. Literacy rate (2007)	−0.198**	0.569**	0.565**	0.151*	0.475**	0.484**

**$p<0.01$; *$p<0.05$

small (overall, but especially the sub-samples used in the sensitivity analyses) and thus more susceptible to influential observations that could skew the analysis, bootstrapping will help gauge the sensitivity of our estimates to sampling variations (Chernick 2008; Efron and Tibshirani 1986). For our full model, we re-estimate the standard errors of our parameters using three bootstrap procedures. The first method is a random case resample bootstrap, with 500 samples ($B=500$) drawn with replacement from among the full sample of $N=272$ (with each case/row having a $1/N$ probability of selection), and our parameter standard errors recalculated using these bootstrap samples.

The second and third methods are based on a stratified bootstrapping approach. The stratified bootstrapping method draws randomly with replacement from identified sub-groups within a sample. On this method, each case has a $1/n$ probability of selection (with $n =$ to the sample size of each sub-group), but each sub-group is represented by exactly n cases in each bootstrap sample, thus preserving the proportion of each sub-group in every bootstrapped sample. Using this procedure, we stratify by both the 19 countries and the eleven NAICS sectors (at $B=500$) in the sample. Unlike the random case resample bootstrap, these two stratified bootstrapping methods will detect the sensitivity of our models to

Table 4 Cross-national satisfaction linear model (including all countries and sectors)

	Unstandardized estimate	Standard error	t
Constant	−8.025	12.390	−0.648
Traditional vs. Secular rational	−3.049***	0.306	−9.975
Survival vs. Self-expression	0.858**	0.326	2.630
Per capita GDP (PPP, 2007)	−0.307***	0.046	−6.723
Literacy rate (2007)	0.546***	0.097	5.617
Heritage trade freedom (2007)	0.343***	0.076	4.480
Heritage business freedom (2007)	0.107*	0.044	2.418
Utilities dummy	−4.884*	2.278	−2.144
Transportation dummy	−3.598**	1.185	−3.036
Information dummy	−2.620*	1.100	−2.381
Accommodation dummy	−0.928	1.272	−0.729
Education dummy	−0.812	1.395	−0.582
Nondurable dummy	8.427***	1.311	6.427
Durable dummy	3.045*	1.489	2.045
Public dummy	−8.426***	1.557	−5.412
Retail dummy	−0.757	1.060	−0.714
Finance dummy	0.154	1.134	0.136
F-statistic	25.240***		
R^2	0.613		
Adjusted R^2	0.589		

$N=272$ measured industries (across all 19 countries)

***$p<0.001$; **$p<0.01$; *$p<0.05$

sampling idiosyncrasies at the country or industry levels, respectively, potential problems caused by the within-country sampling variance noted earlier.

Results from these bootstrap procedures for all three models, comparing the original (or "sample") standard errors to the standard errors produced by each resampling method, along with the significance of the parameter for each standard error, are shown in Tables 7 and 8.

Results

The primary purpose of our study is to examine determinants of cross-national customer satisfaction variance. As such, the first, full model results provided in Table 4, a model that includes satisfaction data for all of the industries in all 19 countries in our sample, all six of our substantive predictor variables, and the full cohort of controls for sector/industry effects, offers the most direct test of our hypotheses. This model is statistically significant, with an F-value of 25.240 ($p<0.001$). The model R^2 is 0.613, with an adjusted-R^2 of 0.589. The model appears to fit the data well, and these variables explain a sizable proportion of the variance in customer satisfaction across nations. The variance inflation factor (VIF) statistics indicate some multicollinearity among the substantive predictors, with the highest VIF value for per capita GDP (8.054) the most troubling. This VIF value indicates a significant increase in the size of the standard error (roughly 2.8 times) for the per capita GDP estimate. Nevertheless, because all of the substantive predictors are significant even with the existence of this multicollinearity (and we therefore run little risk of committing a type II error), and because none of the VIF values for the substantive predictors exceed a value of 10 (the standard upper-bound value for declaring multicollinearity unacceptably high) (Hair et al. 1992), we leave our model unchanged. All six of the national-level predictor variables in the model (i.e. not including the dummy/control variables) are significant.

We find support for H1 and H2, suggesting that culture strongly and significantly impacts cross-national consumer satisfaction. As predicted, national cultures that tend toward secular-rational values (rather than traditional values) generally experience and report lower customer satisfaction (coefficient=−3.049, $p<0.001$). Also as predicted, societies that tend toward self-expressive values over survival values experience and report higher customer satisfaction (coefficient=0.858, $p<0.01$).

We find support for H3 and H4 which predicted a significant relationship between national socioeconomic characteristics and customer satisfaction. Both of the socioeconomic predictors, a nation's per capita gross domestic product and its literacy rate, are significant and

in the directions hypothesized. As suggested, as average per capita GDP (purchasing power parity adjusted [PPP-adjusted]) within a nation increases, consumers become less satisfied (coefficient=−0.307, $p<0.001$). Further, consumers in nations with higher literacy rates tend to experience greater customer satisfaction (coefficient=0.546, $p<0.001$).

Finally, the model shows a significant relationship between political-economic factors (trade and business freedom) and customer satisfaction, as suggested by H5 and H6. As predicted, consumers in nations with fewer barriers to trade experience and report stronger customer satisfaction (coefficient=0.343, $p<0.001$). Moreover, consumers in nations with fewer barriers to business freedom generally experience and report higher customer satisfaction (coefficient=0.107, $p<0.05$). Therefore, our findings suggest that economic freedom does indeed impact cross-national consumer satisfaction, and both H5 and H6 are fully supported.

Finally, the results indicate sector-level differences in customer satisfaction apply across national boundaries. Six of the dummy variables—for the Utilities (−), Transportation (−), Information (−), Nondurable goods (+), Durable goods (+), and Public administration (−) sectors—are significant.[5]

We conducted additional analyses (see Tables 5 and 6) to explore differences across distinct industries and sectors. In particular, we explored the extent to which our results hold in information intensive industries such as Finance and Insurance and Information sectors, as these industries are likely to offer relatively similar product and service offerings across national boundaries. Table 5 shows results for a model with the same six predictor variables (excluding the dummy variables) across all 19 countries, but with the sample truncated by industry to include only industries in the Finance and Insurance sector (a sample of $N=38$ industries). This model is statistically significant, with an F-value of 6.558 ($p<0.001$). The model R^2 is 0.559, with an adjusted-R^2 of 0.474, reasonably similar to the full model. The variance inflation factor (VIF) statistics indicate less multicollinearity among the predictors for this model, with the highest value again for per capita GDP (5.755). Four of the six national-level predictor variables in the model are significant. The parameter estimates for the traditional vs. secular-rational, PPP-adjusted per capita GDP, literacy rate, and trade freedom variables are all significant, with the coefficients directionally unchanged from the full model and similar in magnitude. The survival

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[5] Again, multicollinearity among the dummy variables—and particularly for the Retail and Information sector dummies—should be noted. However, because we are less interested in the parameter estimates or the significance of these dummies and more in their role as controls, we leave our model unchanged.

Table 5 Sensitivity analysis model (including only finance and insurance sector industries)

	Unstandardized estimate	Standard error	t
Constant	−51.362	25.781	−1.992
Traditional vs. Secular rational	−3.739***	0.764	−4.896
Survival vs. Self-expression	1.012	0.789	1.284
Per capita GDP (PPP, 2007)	−0.407***	0.099	−4.107
Literacy rate (2007)	0.846***	0.220	3.852
Heritage trade freedom (2007)	0.520**	0.151	3.437
Heritage business freedom (2007)	0.142	0.079	1.799
F-statistic	6.558***		
R^2	0.559		
Adjusted R^2	0.474		

$N=38$ measured industries (across all 19 countries)

***$p<0.001$; **$p<0.01$; *$p<0.05$

vs. self-expression and business freedom variables are not significant in this second model, although the smaller sample and corresponding larger standard errors appear to be more responsible for this outcome than changes in the size of the parameter estimates.

Table 6 shows results for a model with the six predictor variables across all 19 countries, but with the sample truncated by sector to include only industries in the Information sector (a sample of $N=47$ industries). This model is statistically significant, with an F-value of 8.622 ($p<0.001$). The model R^2 is 0.564, with an adjusted-R^2 of 0.499, reasonably similar to the other two models. The variance inflation factor (VIF) statistics indicate limited multicollinearity among the predictors, with the highest value for per capita GDP (4.399). For this model, three of the six predictors are significant. The parameter estimates for the traditional vs. secular-rational, PPP-adjusted per capita GDP, and literacy rate variables are all significant, with the coefficients directionally unchanged from the earlier models, and similar in magnitude. The remaining three variables are insignificant predictors in this model. Nevertheless, neither the results in this model nor those reported in Table 5 indicate the type of radical deviation in parameter estimates (or other model statistics) one would

expect from an unstable model capitalizing on a particular model specification or sample.

Our final set of statistical tests, the bootstrap tests presented in Tables 7 and 8, seek to study the relative stability of our model to variations in sampling. While the three bootstrapping methods used for our full model in Table 7 reveal some inflation in the standard errors of the estimates, in some cases resulting in a "loss of significance" in terms of p-value and level of significance, none of these methods result in substantially different conclusions than those arrived at originally. Importantly, the same is true for the two sub-sample sensitivity analysis models with results in Table 8, which utilize much smaller samples than the full model. In other words, the parameter estimates in all of the models appear to be relatively robust.

Discussion

Our goal in this study was to understand the cultural, socioeconomic and political-economic determinants of cross-national variation in customer satisfaction. The findings suggest that researchers working in this context must take cultural, socioeconomic, political-economic, and in-

Table 6 Sensitivity analysis model (including only information sector industries)

	Unstandardized estimate	Standard error	t
Constant	−15.283	26.366	−0.580
Traditional vs. Secular rational	−3.376***	0.672	−5.027
Survival vs. Self-expression	0.610	0.759	0.803
Per capita GDP (PPP, 2007)	−0.269**	0.086	−3.126
Literacy rate (2007)	0.835**	0.242	3.448
Heritage trade freedom (2007)	0.251	0.155	1.620
Heritage business freedom (2007)	−0.088	0.089	−0.997
F-statistic	8.622***		
R^2	0.564		
Adjusted R^2	0.499		

$N=47$ measured industries (across all 19 nations)

***$p<0.001$; **$p<0.01$; *$p<0.05$

Table 7 Three bootstrap tests of the full linear model

	Unstandardized estimate	1. Sample	2. Random case resample bootstrap	3. Stratified bootstrap (by NAICS sector)	4. Stratified bootstrap (by country)
		SE	SE	SE	SE
Constant	−8.025	12.390	13.165	12.738	11.637
Traditional vs. Secular rational	−3.049	0.306***	0.324**	0.319**	0.297**
Survival vs. Self-expression	0.858	0.326**	0.378*	0.380*	0.384*
Per capita GDP (PPP, 2007)	−0.307	0.046***	0.054**	0.054**	0.047**
Literacy rate (2007)	0.546	0.097***	0.095**	0.092**	0.092**
Heritage trade freedom (2007)	0.343	0.076***	0.108**	0.107**	0.103**
Heritage business freedom (2007)	0.107	0.044*	0.054*	0.052*	0.049*
Utilities dummy	−4.884	2.278*	1.834**	1.720**	1.835**
Transportation dummy	−3.598	1.185**	1.374*	1.358*	1.324**
Information dummy	−2.620	1.100*	1.142*	1.153*	1.036*
Accommodation dummy	−0.928	1.272	1.193	1.245	1.204
Education dummy	−0.812	1.395	1.296	1.252	1.173
Nondurable dummy	8.427	1.311***	1.135**	1.148**	1.121**
Durable dummy	3.045	1.489*	1.435*	1.390*	1.497*
Public dummy	−8.426	1.557***	1.957**	1.852**	2.057**
Retail dummy	−0.757	1.060	1.092	1.097	1.093
Finance dummy	0.154	1.134	1.170	1.163	1.129

N=272 measured industries (across all 19 countries)

***$p<0.001$; **$p<0.01$; *$p<0.05$

dustry/sector factors into account when comparing satisfaction across nations. As in past studies, we find that culture matters when trying to understand cross-national variance in consumer attitudes, in this case regarding customer satisfaction. Simply put, consumers in traditional societies tend to either experience or express far higher levels of satisfaction than secular-rational societies, while consumers in self-expressive societies do the same. These results suggest that cultural factors must be accounted for when benchmarking or comparing satisfaction results across nations, as we suspected.

Furthermore, these results may point to differential "thresholds of satisfiability" among consumers within different cultures, suggesting that consumers from some cultural groups may simply be harder to please (or at least less likely to express pleasure) than others. Finally, while not a first-order goal of this research, our results suggest that the Inglehart and Baker conceptualization of culture, so far rarely used in the marketing literature, may have value and warrant use in future marketing research. Some of the advantages of this dataset (when compared to the Hofstede Cultural Dimensions), including the frequency with which it is updated, the smaller number of variables (minimizing problems of multicollinearity), and its availability across all nations, should appeal to researchers.

These findings vis-à-vis culture and satisfaction have significant implications for corporations operating in multiple nations. In the first instance, marketing managers should recognize that any effort to benchmark and compare satisfaction levels between traditional and secular-rational societies, for example, is likely to be confounded by culture. Moreover, these results suggest that efforts to improve satisfaction may have a less noticeable effect (in terms of the magnitude of changes) in some nations, suggesting that efforts to establish "targets" for satisfaction improvement across nations may be difficult. Strategically, MNCs should also recognize these culturally-driven satisfaction thresholds when considering entry into new national markets. That is, MNCs are likely to find efforts to please consumers in *both* secular-rational *and* survival-oriented nations more difficult than expected.

We also find that socioeconomic factors—in this instance, a nation's per capita GDP and its literacy rate—impact cross-national satisfaction. We find that consumers in nations with higher average per capita GDP are more difficult to satisfy, as we hypothesized. While important, this result should be interpreted carefully. It would be incorrect to infer from this result that economic policy-makers should, for instance, seek a *lower* per capita GDP for their nation, as this would create consumers who are

Table 8 Bootstrap tests of sensitivity models

	Unstandardized estimate	1. Sample SE	2. Random case bootstrap SE	3. Stratified bootstrap (by country) SE
Finance and insurance sector models				
Constant	−51.362	25.781	28.375	27.206
Traditional vs. Secular rational	−3.739	0.764***	0.902**	0.842**
Survival vs. Self-expression	1.012	0.789	1.316	1.284
Per capita GDP (PPP, 2007)	−0.407	0.099***	0.131**	0.128**
Literacy rate (2007)	0.846	0.220***	0.199**	0.170**
Heritage trade freedom (2007)	0.520	0.151**	0.296*	0.278*
Heritage business freedom (2007)	0.142	0.079	0.081	0.075
Information sector models				
Constant	−15.283	26.366	26.053	22.826
Traditional vs. Secular rational	−3.376	0.672***	0.716**	0.677**
Survival vs. Self-expression	0.610	0.759	0.882	0.767
Per capita GDP (PPP, 2007)	−0.269	0.086**	0.103**	0.085**
Literacy rate (2007)	0.835	0.242**	0.266**	0.235**
Heritage trade freedom (2007)	0.251	0.155	0.248	0.208
Heritage business freedom (2007)	−0.088	0.089	0.070	0.062

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$

actually *more satisfied*. While dynamic interpretations like this are always difficult in cross-sectional studies, this conclusion seems especially implausible. On the contrary, we interpret this finding to mean that consumers, as their wealth grows with the nation's economy (both over long periods of time), gradually become more demanding. In turn, corporations (multinational or domestic) should anticipate having a more difficult task satisfying consumers who are more demanding, hold higher expectations, and so forth.

Similarly, we find that consumers in nations with higher literacy rates are generally more satisfied. It is likely that this result emanates from both the nature of the consumers and the nature of the workforce within these societies, with literate, more informed consumers proving better consumers, and a more literate workforce better able to satisfy consumers. For policymakers, the implications of this finding are clear: efforts to improve literacy within a nation will enhance customer satisfaction, and the economy along with it. Likewise, MNCs looking to expand into new markets should consider the available domestic workforce, as this workforce will certainly impact their ability to offer a satisfying consumer experience. It is also worthwhile to note here that the literacy rate variable was a relatively more important predictor for the Information sector (see Table 6) than it was in the full model. This result makes sense and suggests that while literacy is vital to customer satisfaction across all economic sectors, it is especially important in information sector industries and for economies seeking to grow their information sectors.

Finally, we find that political-economic factors impact cross-national satisfaction, as we anticipated. Confirming both classical economic theory and contemporary accepted wisdom, we find that both free trade and business freedom positively impact customer satisfaction. For policymakers, the implications of this finding are straightforward: greater economic freedom should improve the satisfaction of domestic consumers, boosting prospects for long-term economic growth. While MNCs are constrained in the first instance by economic freedom itself in determining which markets to enter, they should nevertheless recognize that the existing levels of economic freedom within a nation will likely condition the satisfaction of consumers within that market, and therefore impact their prospects for creating customer satisfaction.

As with all scientific research, there are limitations to our study that need to be explicitly noted, and these limitations point to directions for future research. Despite the fact that the sample used in this study is quite large when compared to other studies in this area, 19 nations still represent a fairly small subset of the population of the world. Therefore, future research with a larger sample of nations would be useful. Moreover, while we have selected a cohort of predictors grounded in prior research and theory and more expansive than that employed in most of the existing literature, there remains a need to consider other relevant variables which may be salient in other settings.

We suggest at least three opportunities for further research. First, it will be useful to extend this work by focusing on a particular product or service across countries

(such as mobile phones, healthcare, education) to derive insights applicable to specific industries. Focusing on products or services that are IT-intensive or information-intensive may be particularly valuable because such products lend themselves to greater standardization and may permit finer-grained analyses of cultural, socioeconomic, and political-economic influences.

Second, prior research suggests important differences in customer satisfaction and customer loyalty when it comes to service provision by government vis-à-vis the private sector (e.g., Kankanhalli and Kohli 2009; Mithas et al. 2006–07, 2010; Morgeson and Mithas 2009). There is a need to investigate these differences across national boundaries for generalizable insights. Finally, there is a need to conduct cross-national studies for customer satisfaction at the firm level, incorporating the effect of other relevant variables such as IT investments and information management practices which have been shown to influence customer satisfaction and firm performance in single-nation studies (Mithas et al. 2005, 2011; Mithas and Rust 2010).

In conclusion, this study provides compelling evidence of the importance of clearly identifying the cultural, socioeconomic, political-economic, and sector/industry factors that impact cross-national variation in satisfaction. Furthermore, the results indicate that unless appropriately accounted for, corporate-wide standards of customer satisfaction will place some country managers at a disadvantage simply because of the characteristics of their nations, not because of objective performance. The results also indicate that much of the variation in customer satisfaction data can be explained by incorporating readily available data on national culture, socio-economic factors, and economic freedom. As a result, managers at MNCs should be better able to identify real differences in service performance across their operations.

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