

# Comparing dimensions of national culture for secondary analysis of consumer behavior data of different countries

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## Abstract

**Purpose** – The purpose of this paper is to find consumption-related similarities and differences between the three major dimensional models of national culture, to help researchers select specific models or dimensions for their cross-cultural studies.

**Design/methodology/approach** – First, a review of the theoretical background of cultural values and three models of national culture is provided: those by Hofstede, Schwartz and GLOBE. Then these models are compared through partial correlation analysis, controlling for GNP/capita of a set of 25 relevant consumer behavior-related data with country scores of 21 dimensions of the three dimensional models.

**Findings** – Of all models several dimensions explain differences in consumer behavior. Some dimensions explain values related to specific consumer behavior domains better than others. Only a few dimensions of different models do not show meaningful interesting relationships with consumer behavior issues. Dimensions with the same label do not explain similar differences.

**Practical implications** – Cross-cultural researchers can choose from the several cultural models, but selecting a model only based on descriptions of the contents of dimensions is difficult. The relationships of dimensions with concrete consumer behavior data found in this study facilitate choice. This analysis may help researchers who consider conducting cross-cultural analysis of consumer behavior data to select a specific model, or specific dimensions of different models that apply best to their research question.

**Originality/value** – This is the first study that compares the three major dimensional models with examples of consumer behavior-related items.

**Keywords** Culture, Hofstede, Schwartz, GLOBE, Cross-cultural research, Dimensional models

**Paper type** Research paper

## Introduction

Cultural values can be most powerful explanations of, and influences on consumer behavior (Terlutter *et al.*, 2006). For cross-cultural research in international marketing a much used method is secondary analysis of consumer behavior data using country scores of dimensional models of national culture. These models or frameworks are constructs that include cultural values that were measured at the national level. Several dimensional models of national culture are available that can be used for cross-cultural research in international marketing to find explanations for consumer behavior differences. Those compared in this paper are by Geert Hofstede (2001), Shalom Schwartz (1992, 1994, 2006) and project GLOBE (House *et al.*, 2004). Of such models the dimensions form scales on which countries have a score. These scores can be used as independent variables in secondary analysis. In addition to economic and demographic variables, cultural values have proved to explain the differences in consumer motives and behavior, product ownership and usage, success of a product or brand and appeals in advertising.

The dimensional model of national culture by Hofstede (2001) has been used most for international marketing research, but increasingly researchers are using other models, often without explaining their choice of model. The models differ with respect to the content of the dimensions and the ways the dimensions were measured. Dimensional models have only been compared based on the descriptions of contents (De Mooij, 2013, 2015; Hofstede, 2006, 2010; Javidan *et al.*, 2006). Hofstede (2001) has calibrated his dimensions by comparing them with



other studies and correlating his country scores with many different manifestations of human behavior, including consumer behavior. For the other models, such validation has been limited to social issues. GLOBE mainly presents relationships of dimensions with economic and social indicators, Schwartz (2006) with social problems, in line with the purpose of his work which is about societal functioning of human beings. Interpreting the contents of dimensions based on only the descriptions by the researchers is difficult and often arbitrary.

To help researchers make a better choice of model for their specific research questions, this study compares the three models by correlating all dimensions with the same consumer behavior-related data, thus initiating comparison and validation of the models for application to consumer behavior.

### **Cultural values and dimensions of national culture**

Modern theories of values as used for marketing are grounded in Rokeach's (1973) value research, including the generally used definition of values as "broad tendencies to prefer certain states of affairs over others." Those who started applying the value concept to marketing in the 1970s have drawn its conceptualization from psychology, which examines values from the standpoint of attitudes and personal motives. Values are viewed as standards that among others guide and determine action, attitudes toward objects and situations, and presentation of self to others. Both human values in general and consumer values are derived from, and modified through personal, social and cultural learning. Personal values may underlie and explain a variety of individual behaviors. Cultural or collective values are the values that are shared by the members of specific groups or societies (Clawson and Vinson, 1978; Gutman and Vinson, 1979; Munson and Woodside, 1984; Vinson *et al.*, 1977).

According to the psychologist Oyserman (2015), if made salient both individual values and cultural values are linked with and can predict behavior and choices. Values are codes or general principles guiding action; they are not actions themselves. Both values and related actions may vary across cultures. Thus, two societies can both value achievement but differ tremendously in their norms as to what to achieve, how to achieve and when pursuing achievement is appropriate. Values are abstract constructs and difficult to study, in particular because of reliance on self-reports. Persistent questions arise as to whether they are "real," that is, whether they actually can be shown to have causal influence on behavior (Oyserman, 2015). Although it seems unlikely that collective values have a direct causal effect on individual behavior, there can be an indirect relationship. Collective values are calculated as averages of the value orientations of all country members, and individual consumer behavior elements can be aggregated to the collective level. However, such dependent macro-level variables are not necessarily directly influenced by collective values (Jagodzinski, 2004). The anthropologist Fricke (2003) notes that correlations merely measure covariation and that their usefulness for explaining behavior depends on interpretation. Strict causality is difficult to prove. "Procedures that work well in natural sciences that do not deal with human beings may be too confining for the study of causality in human beings."

However, if companies find significant differences in sales or usage of their products or brands in countries that have a similar level of purchasing power and no other variables can be found that explain variance, it is appropriate to examine the explanatory function of cultural values. Generally, when cross-cultural researchers find consistent relationships between aggregate data on various aspects of consumer behavior and cultural values, they view these values as variables that can explain and predict.

### **Using cultural dimensions in international marketing research**

Both product categories, specific product attributes, product benefits and motives tend to be related to cultural values. Whereas in one culture the design of a car may be the driver of sales, in another country it may be fast acceleration. The underlying values of the two

motives will be different and in many instances related to culture. In some cases cultural values can explain large differences in sales for which no economic or demographic explanation can be found. In Europe, for example, the differences in mineral water sales can only be explained by the differences in cultural values (De Mooij, 2014).

Some products or brands appeal to specific values or motives that are not equally important in all countries. Luxury goods, for example, appeal to the status motive. In some countries, on average, more individuals are driven by the status motive than in others, either a need for social status or more ego-related self-enhancement. The social status motive is relatively strong in cultures where people have a defined position in society and need to demonstrate their social position so others can pay proper respect, which is a common phenomenon in Asia. In 2004, 29 percent of the total turnover of Moët Hennesy-Louis Vuitton SA (LVMH), owner of Louis Vuitton and Dior, and 58 percent of turnover of Cognac producer Remy Martin were concentrated in Asia (Roll, 2006). Other status enhancing products or brands are expensive shoes and clothes. Another example is the internet and related innovative products that more appeal to innovation and change accepting cultures than to change rejecting cultures. Where people cannot easily cope with new or ambiguous situations, they will not be the first to embrace new technological products. On the other hand, does technology as such appeal to those who cherish security.

Behavior and images in advertising are expressions of values, and so are brand images. If behaviors or images do not conform to the values of a culture, the message is difficult to interpret. The global advertising campaign for energy drink Red Bull was meant to reflect competence and excitement. A study across seven countries showed that this was only recognized in the UK (Foscht *et al.*, 2008).

Other examples of findings with the Hofstede model are explaining differences in buying life insurance (Chui and Kwok, 2008), internet shopping (Lim *et al.*, 2004), consumer innovativeness (Yeniurt and Townsend, 2003), international new product take-off (Tellis, Stremersch and Yin, 2003) and international growth of new products (Stremersch and Tellis, 2004). The Hofstede dimensions also have been used for comparing the use of appeals in advertising (Albers-Miller and Gelb, 1996; Chan and Moon, 2005; Emery and Tian, 2014; Rhodes and Emery, 2003), status motives (Zheng, Phelps and Hoy, 2009) or the use of celebrities in advertising (Praet, 2009).

Some international marketing researchers have used the other two dimensional models. Terlutter *et al.* (2006) suggest using GLOBE's dimension assertiveness to help explain the differences in advertising appeals. Diehl *et al.* (2008) found that an identical advertisement expressing performance orientation was perceived differently across countries. They also found a significant relationship between the perceived level of performance orientation and the overall evaluation of the advertisement. Czarnecka and Brennan (2009) found a negative relationship between the community appeal in advertising and GLOBE's dimension institutional collectivism. Soares *et al.* (2007) note that the Schwartz framework has great potential in international marketing.

### Comparing the three major models of national culture

The three major large-scale dimensional models that are compared are the following. Hofstede (2001) and Hofstede *et al.* (2010) developed the five dimensions of national culture. These dimensions are labeled power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance and long-/short-term orientation. Later, a sixth dimension was added called indulgence/restraint, developed by Minkov (2007). Schwartz (1992, 1994) found seven different value types, that can be viewed as three dimensions: embeddedness/intellectual and affective autonomy, hierarchy/egalitarianism and mastery/harmony. GLOBE (House *et al.*, 2004) distinguishes nine cultural dimensions for some of which labels are used that are similar to the Hofstede dimensions. Each dimension is measured at the societal and organizational level. For international marketing research, only societal level dimensions are relevant because

national-level data are needed. The labels are uncertainty avoidance, power distance, in-group collectivism, gender egalitarianism, assertiveness, future orientation, performance orientation and humane orientation.

Differences between the models have been described before by comparing the descriptions of dimension contents (De Mooij, 2013, 2015; Minkov and Blagoev, 2011). Magnusson *et al* (2008) compared the three models for calculating cultural distance and clustering similar markets. They found that the indices based on Schwartz and GLOBE cluster culturally similar markets poorly as compared to Hofstede's indices and conclude that the more contemporary cultural frameworks have provided only limited advancements as compared with Hofstede's original work, but also that the different measures of culture may be better at explaining particular international marketing phenomena. This paper makes comparison more concrete by comparing the results of secondary analysis of 25 consumer behavior-related data with country scores of 21 different dimensions of the three dimensional models.

### Methodology

Many data can be retrieved from public domain databases that can be used to validate relationships with the cultural dimensions. For this study, the percentages answers to 25 selected survey questions were drawn from various databases. Table I shows the surveys and specific questions for which the percentages answers were used. These were data on consumption, ownership, usage or attitudes that were significantly correlated with Hofstede dimensions in Pearson zero-order correlations. This analysis was meant to find which other dimensions might have explanatory power.

Differences in ownership of computers and use of the internet tend to be related to GNP/capita and Hofstede's uncertainty avoidance and individualism, both measures of innovativeness. The importance of appearance, demonstrated by the importance of clothing or buying expensive shoes, and wishing to show one's success can be expressions of status needs that tend to relate to Hofstede's power distance (social status) and/or masculinity (demonstrating achievement). The wish to follow technology can be an expression of the need for control, and limiting uncertain activities such as travel and exercise also tend to relate to Hofstede's uncertainty avoidance. Attitudes to male and female roles tend to relate to Hofstede's masculinity/femininity (De Mooij, 2014).

Because for this European group of countries, most dimensions are significantly correlated with GNI/capita, Pearson partial correlations were conducted, controlling for GNI/capita at PPP. The only dimensions that were not correlated with GNI/capita are Schwartz's hierarchy, mastery and harmony; Hofstede's masculinity-femininity; and GLOBE's assertiveness and humane orientation. A total of 21 dimensions were used. For the GLOBE model the practices that measure "as is" were used as the values that measure "should be" are farther from reality. For the Hofstede dimensions, the scores are published in Hofstede *et al* (2010). The GLOBE scores are available from the book by House *et al* (2004) and in 2011 Shalom Schwartz personally provided the most recent scores for his model. These country scores were not published.

### Results

Tables II-VI combine summaries of the contents of sets of dimensions that are assumed to be similar with the partial correlations found with the consumer behavior items. This covers five Hofstede dimensions, seven Schwartz dimensions and six GLOBE dimensions. The other dimensions are discussed separately.

The specific consumer behavior items selected for this study are computer- and internet-related data such as ownership of a computer, laptop, usage of the internet, etc.; activities like buying expensive shoes, travel and exercise; and attitudes to technology, need for showing success and male-female roles. Data of several items were more significantly correlated with GNI/capita than with the cultural variables, but this was limited to households with a

Source	Data, answers to questions
World Development Indicators database 2014, World Bank, 16 ctrs	GNi/capita at PPP, 2013
World Development Indicators database, World Bank, 16 ctrs, 2013	Percentages households with a computer Percentages individuals using the internet
Special Eurobarometer Survey Social Climate. EBS408, 16 ctrs, 2013	% answers very to question "How satisfied are you with your life in general"
Special Eurobarometer Survey "Sport and physical activity" EBS412, 16 ctrs, 2014	Never exercise; choice of almost daily, a few times in a week, occasionally, or never
Special Eurobarometer Survey "E-communications and Telecom Single Market Household Survey." EBS414, 16 ctrs, 2014	How often do you travel abroad in EU, choice of various frequencies: never Which of the following goods do you personally own? desktop, laptop, tablet, smartphone, have internet connection at home
Special Eurobarometer Survey "Consumer Empowerment" EBS342, 16 ctrs, 2011	Answer "never used internet," choice out of several frequencies If internet is used, percentages who use it every day Balanced decision between you and spouse on expensive purchase; choice between "more you," "more partner" or "balanced"
Eurostat 2009, "Consumers in Europe," 16 ctrs	Percentages of internet users who use it for music and games; use for reading journals and papers
Special Eurobarometer Survey "Social Values, Science and Technology" EBS225, 16 ctrs, 2005	Percentages agree with statement "University is more for a boy than for a girl"
Special Eurobarometer Survey "Gender Equality" EBS428 16 ctrs, 2014	Percentages agree with "A father must put his career ahead of looking after his young child"
Ipsos (2012), 15 ctrs	Percentages agree with last year bought shoes over €500; with my clothing I express who I am; family is woman's first priority; I enjoy the fun of shopping; I enjoy it when people see my success; I follow developments of new technology; I take care of my appearance; own i-phone

**Notes:** The 16 countries used of the World Development Indicators database, special Eurobarometer surveys and Eurostat are Austria, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, and UK. The 15 countries of the European Media and Marketing Survey are Austria, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, and UK; for Eurobarometer surveys, the basic sample design applied in all states is a multi-stage, random (probability) one. In each country, a number of sampling points are drawn with the probability proportional to population size (for a total coverage of the country) and to population density. For most countries, over 1,000 people are interviewed; EMS data are based on 28,000 respondents representing 50.7 million affluent Europeans. These data are not in the public domain

**Source:** Eurostat and World Development Indicators data are compiled from officially recognized international sources

**Table I.**  
Surveys used

computer, individual users of internet, ownership of laptop, tablet and smartphone, never use internet, as well as never travel. These are all relatively expensive goods. Usage and attitude differences, such as the frequency and purpose of usage of the internet (measured among internet users) and most attitudes toward status, success or male-female roles show correlations with GNP/capita that are less significant than the correlations with culture.

*Individualism-collectivism, in-group collectivism and autonomy-embeddedness*

Table II groups Hofstede's (2001) individualism-collectivism with GLOBE's in-group collectivism (Gelfand *et al.*, 2004) and Schwartz's autonomy-embeddedness (Schwartz, 2006).

GLOBE's in-group collectivism shows significant correlations with several computer- and internet-related items, of which two (individuals using internet and usage of internet for reading journals and papers) are the most significant as compared with all other dimensions. Another meaningful correlation is with taking care of appearance, which is important for

**Table II.** Individualism-collectivism, in-group collectivism, autonomy vs embeddedness

Hofstede	GLOBE	Schwartz
<p><i>Individualism-collectivism</i>                      Unique self vs belong to in-groups; independence vs dependence; personal preferences vs duties and obligations; rationality vs relationship. Cross-situational consistency vs importance of context. COL: uphold face                      Individualism correlates only with two items: households with computer (<math>r = 0.53^*</math>) and never use internet (<math>r = -0.44^*</math>)</p>	<p><i>In-group collectivism</i>                      Strong family ties, loyalty, interdependence vs focus on the self and need for adventure                        In-group collectivism correlates with several computer-related items                      Households with computer (<math>r = -0.59^*</math>); personally own tablet (<math>-0.56^*</math>); internet connection at home (<math>r = -0.65^{**}</math>); individuals using internet (<math>r = -0.66^{**}</math>); never use internet (<math>r = 0.61^{**}</math>); use internet every day (<math>r = -0.70^{**}</math>); use internet for music and games (<math>r = -0.65^{**}</math>) and for reading journals and papers (<math>r = -0.60^*</math>)                      Taking care of appearance (<math>r = 0.62^{**}</math>)</p>	<p><i>Autonomy-embeddedness</i>                      Intellectual autonomy: freedom, curious, creativity, broadminded                      Affective autonomy: pleasure, enjoy life, exciting life                      Embeddedness: tradition, social order, family security, obedient, reciprocation of favors                      Intellectual autonomy did not correlate with any of the computer and internet-related items.                      Affective autonomy with internet connection at home (<math>r = 0.48^*</math>) and use of the internet (<math>r = 0.51^*</math>)                      Embeddedness correlates positively with households with computer (<math>r = 0.51^*</math>) and negatively with never use internet (<math>r = -0.68^{**}</math>)                      Family is woman's first priority (<math>r = 0.70^{**}</math>) also correlates negatively with intellectual autonomy (<math>r = -0.54^*</math>)</p>

**Notes:**  $*p < 0.05$ ;  $**p < 0.01$

Hofstede	GLOBE	Schwartz
<p>Power distance: acceptance and expectance of unequal distribution of power                      High: one's status must be clear so others can pay proper respect                      Low: equality                      One correlation points at status needs: clothing express who I am (<math>r = 0.59^*</math>)</p>	<p>Power distance: control, authority over others. Maintenance of inequality.                      Prestige, status, wealth and material possessions                        Households with computer (<math>r = -0.48^*</math>); personally own tablet (<math>-0.48^*</math>); internet connection at home (<math>r = -0.53^*</math>); never used internet (<math>r = 0.60^{**}</math>); use internet every day (<math>r = -0.65^{**}</math>); use internet for music and games (<math>r = -0.56^{**}</math>) and for reading journals and papers (<math>r = -0.55^*</math>)                      Enjoy the fun of shopping (<math>r = 0.66^{**}</math>)</p>	<p>Hierarchy: taking hierarchical distribution of roles for granted, comply with obligations and rules attached to role. Humble, social power                      Egalitarianism: equality, honesty, loyal, responsible, helpful                        Hierarchy: bought expensive shoes (<math>r = 0.49^*</math>); clothing express who I am (<math>r = 0.65^{**}</math>); enjoy when people see my success (<math>r = 0.77^{**}</math>). Agree with family is woman's first priority (<math>r = 0.59^*</math>)                      Egalitarianism: enjoy when people see my success (<math>r = -0.52^*</math>)                      Never exercise (<math>r = 0.75^{**}</math>); never travel abroad in the EU (<math>r = 0.78^{**}</math>)</p>

**Notes:**  $*p < 0.05$ ;  $**p < 0.01$

**Table III.** Power distance and hierarchy-egalitarianism

upholding face, a collectivistic value. Neither Hofstede's individualism-collectivism nor Schwartz's autonomy/embeddedness contributed as much as in-group collectivism did. The direction of the correlations between embeddedness and households with computer and never use internet is puzzling. The significant correlation between embeddedness and the statement that family is woman's first priority points at traditional values. The negative correlation with intellectual autonomy corresponds with this.

**Table IV.**  
Uncertainty avoidance

Hofstede	GLOBE
<p>High: avoiding uncertainty and ambiguity, competence; stress, anxiety; importance of science and technology</p> <p>Low: tolerance for ambiguity, innovativeness, satisfaction with life</p> <p>High: never used internet (<math>r = 0.62^{**}</math>); never exercise (<math>r = 0.47^*</math>); never travel abroad in EU (<math>r = 0.46^*</math>); interested in following technology (<math>r = 0.75^{**}</math>)</p> <p>Low: Satisfied with life (<math>r = -0.71^{**}</math>); household with computer (<math>r = -0.68^{**}</math>); personally own laptop (<math>r = -0.50^*</math>); personally own tablet (<math>r = -0.59^*</math>); personally own smartphone (<math>r = -0.70^{**}</math>); individuals using internet (<math>r = -0.58^*</math>)</p> <p><b>Notes:</b> <math>*p &lt; 0.05</math>; <math>**p &lt; 0.01</math></p>	<p>High: orderliness, consistency, formal law and procedures; high importance of in-groups, lack of interest in out-groups; satisfaction with life; importance of science and technology</p> <p>Low: less religious dogma</p> <p>The only two significant correlations are with clothing express who I am (<math>r = -0.59^*</math>); and agree with family is woman's first priority (<math>r = -0.48^*</math>)</p>

*Power distance and hierarchy-egalitarianism*

Table III groups power distance (Hofstede, 2001; GLOBE, Carl *et al.*, 2004) with hierarchy-egalitarianism (Schwartz, 2006).

With respect to power Hofstede's power distance is more similar to Schwartz's hierarchy than to GLOBE's power distance. Both Hofstede's power distance and Schwartz's hierarchy present power distance as acceptance and expectence of power and authority. GLOBE's power distance is about control of others. Hofstede's power distance and Schwartz's hierarchy also appear to connect to similar items, but the Schwartz dimension explains more items. Hierarchy relates to status needs, as expressed by owning or buying expensive shoes and the importance of clothing. Egalitarianism appears to be the opposite to hierarchy when observing the negative correlation with "enjoy when people see my success." Hierarchy correlates positively with viewing family as woman's first priority, which is negatively correlated with egalitarianism. With this respect the two dimensions seem to be true opposites. Yet there are a few incomprehensible significant correlations between egalitarianism and the percentages of people who never exercise or travel. The relationships between GLOBE's power distance and computer ownership and internet are similar – though less significant – to the relationships with in-group collectivism, which is not surprising in view of the significant correlation between both dimensions ( $r = 0.74^{**}$ ). Thus, Hofstede's power distance is similar to Schwartz's hierarchy, but very different from GLOBE's power distance.

*Uncertainty avoidance*

Table IV compares the two dimensions named uncertainty avoidance (Hofstede, 2001; GLOBE, Sully de Luque and Javidan, 2004).

The results show that the Hofstede and GLOBE uncertainty avoidance dimensions are very different, both in the descriptions and the relationships with consumer-related items. Whereas Hofstede's dimension uncertainty avoidance points at consumer innovativeness in adopting new technology (smartphone, tablet, laptop, use of internet) and following technology, GLOBE's dimension does not do so. Also not traveling (fear of the unknown) an item that relates to high uncertainty avoidance does not correlate with the GLOBE dimension. Many different studies of satisfaction with life in general show negative correlations only with Hofstede's dimension, not with GLOBE's. There are only two significant correlations with the GLOBE dimension but these are difficult to interpret. Part of GLOBE's description includes high importance of in-groups and the relative lack of

interest in out-groups, which are collectivistic values (Minkov and Blagoev, 2011). This is demonstrated by the correlation with in-group collectivism ( $r = -0.82^{**}$ ). The correlations with Hofstede's uncertainty avoidance are most significant of all dimensions for personally own smartphone and follow technology.

*Masculinity-femininity, gender egalitarianism, assertiveness and mastery-harmony*

Table V compares masculinity-femininity (Hofstede, 2001) with gender egalitarianism (Enrich, Denmark and Den Hartog, 2004) and assertiveness (Den Hartog, 2004), and mastery/harmony (Schwartz, 2006).

Apparently all dimensions include values related to relationships between males and females as well as assertiveness, achievement and success orientations, except mastery that seems to be more limited to achievement. With respect to male and female roles, the Hofstede and GLOBE dimensions appear to give the best results and are important for understanding various differences in cross-cultural consumer behavior, such as shopping behavior, decision making in families, activities related to child care, cooking, cleaning and reflections in advertising.

Three items concerning role differences (family is woman's first priority, university education for boys and buying balanced decision, father must put career ahead for child)

Hofstede	GLOBE	Schwartz
Masculinity: assertiveness, achievement orientation; success; role differentiation males-females Femininity: quality of life; overlapping roles males and females	Gender egalitarianism: equal opportunity for women vs male domination Assertiveness: tough, dominant, aggressive in social relationships; enterprising, taking initiative. Directness in communication	Mastery: capable, daring, successful, ambitious, influential, social recognition Harmony: protect environment, unity with nature, world at peace, world of beauty
Masculinity: agree with family is woman's first priority ( $r = 78^{**}$ ); agree with university education is more for boys ( $r = 0.68^{**}$ ); agree with father must put career ahead of looking after young child ( $r = 0.83^{**}$ ); buying expensive goods is a balanced decision with partner ( $r = -0.49^*$ ) Enjoy when people see my success ( $r = 0.69^{**}$ ); take care of appearance ( $r = 0.53^*$ ); enjoy the fun of shopping ( $r = 0.77^{**}$ ) Femininity Use internet every day ( $r = -0.82^{**}$ ), use for music and games ( $r = -0.65^{**}$ ) and for reading journals and papers ( $r = -0.55^*$ ); internet connection at home ( $r = -0.56^*$ ) Personally own laptop ( $r = -0.57^*$ ); personally own tablet ( $r = -0.48^*$ ) Satisfied with life ( $r = -0.47^*$ )	Gender egalitarianism: agree with university education more for boys ( $r = -0.54^*$ ); agree with father must put career ahead of looking after young child ( $r = -0.55^*$ ) Assertiveness: agree with family is woman's first priority ( $r = 0.60^*$ ); agree with university education more for boys ( $r = 0.69^*$ ); agree with father must put career ahead of looking after young child ( $r = 0.61^{**}$ ) Assertiveness: enjoy when people see my success ( $r = 0.57^*$ ); take care of my appearance ( $r = 0.49^*$ ); enjoy the fun of shopping ( $r = 0.50^*$ ) Gender egalitarianism: use internet every day ( $r = 0.73^{**}$ ), use for music and games ( $r = 0.54^*$ ) and for reading journals and papers ( $r = 0.51^*$ ); internet connection at home ( $r = 0.73^{**}$ ); personally own tablet ( $r = 0.53^*$ ). Assertiveness: personally own laptop ( $r = -0.61^{**}$ ) Gender egalitarianism: satisfied with life ( $r = 0.65^{**}$ )	Mastery: take care of appearance ( $r = 0.60^*$ ) Harmony: agree with family is woman's first priority ( $r = -0.57^*$ ); buying expensive goods is a balanced decision with partner ( $r = 59^*$ ) Harmony: enjoy when people see my success ( $r = -0.59^*$ ); clothing express who I am ( $r = -0.49^*$ ); bought expensive shoes ( $r = -0.48^*$ ); households with computer ( $r = -0.56^*$ ); personally own laptop ( $r = -0.65^{**}$ ); personally own smartphone ( $r = -0.56^*$ ) Mastery: own i-phone ( $r = 0.64^{**}$ ) Harmony: own i-phone ( $r = -0.54^*$ )

Notes:  $*p < 0.05$ ;  $**p < 0.01$

**Table V.** Masculinity-femininity, gender egalitarianism, assertiveness and mastery/harmony

correlate significantly with all dimensions, be it that Schwartz's dimension harmony explains more than mastery. One item, that of fathers who put their career first correlates significantly with Hofstede's masculinity and both GLOBE dimensions assertiveness and gender egalitarianism, but not with the Schwartz dimensions.

Two items pointing at the need to demonstrate one's success (taking care of appearance, enjoy when people see my success) correlate with all dimensions, except for the Schwartz dimensions only with mastery or harmony. Enjoying the fun of shopping relates to both masculinity and assertiveness. Several computer- and internet-related items connect with quality of life values as in low masculinity and high gender egalitarianism, in particular frequency of usage, and usage at home. These items also correlate with harmony, less with mastery. Only owning an i-phone correlates positively with mastery and negatively with harmony. In other cases, a negative correlation with harmony is not necessarily a positive one with mastery. Feeling satisfied with life is related to both femininity and gender egalitarianism.

#### *Long-/short-term orientation and future orientation*

Table VI compares the two dimensions named long-/short-term orientation (Hofstede *et al.*, 2010) and GLOBE's future orientation (Ashkanazy *et al.*, 2004).

Only a few meaningful correlations are found with these dimensions. An interesting correlation is between Hofstede's long-term orientation and personally own desktop. This points at thrift. Whereas many people may throw out the desktop when buying newer gadgets like tablets and smartphones, probably in the more thrifty cultures people may longer adhere to the good old desktop. The more modern versions of a computer correlate negatively with long-term orientation. Following technology may be viewed as a reflection of longer-term values. There are only two significant correlations with future orientation, of which never travel abroad seems to reflect the opposite of the values included in this dimension. Not traveling is in contrast with values of pleasure.

#### *Other dimensions*

Other dimensions that are included in the Hofstede, GLOBE and Schwartz models are indulgence/restraint, performance orientation and humane orientation.

Indulgence includes the degree of happiness people experience, the control they have over their own lives, and the importance of leisure. Restraint includes values like hard work and thrift. Indulgence correlates significantly with all computer- and internet-related items, except the desktop, but all correlations are less significant than those with the other dimensions, except for personally own laptop ( $r = 0.63^{**}$ ) and tablet ( $r = 0.67^{**}$ ). This also applies for other items, such as never travel and never exercise that correlate with restraint ( $r = -0.54^*$  and  $r = -0.49^*$ ). As this dimension was introduced only recently, it will take more analysis to understand its real explaining power.

Hofstede	GLOBE
Long-term orientation: perseverance, pragmatism, thrift	Future orientation: investment planning; delaying gratification; persistence, thrift; looser ties with family and friends; low scores include pleasure, importance of customs and traditions, procrastination
Short-term orientation: national pride, tradition, self-esteem, self-enhancement	Individuals using internet ( $r = 0.55^*$ )
Personally own desktop ( $r = 0.61^*$ )	Never travel abroad in EU ( $r = -0.54^*$ )
Personally own laptop ( $r = -0.63^{**}$ )	
Own i-phone ( $r = -0.53^*$ )	
Follow technology ( $r = 0.47^*$ )	

**Notes:**  $*p < 0.05$ ;  $**p < 0.01$

**Table VI.**  
Long-/short-term  
orientation and future  
orientation

Performance orientation includes valuing education, learning and taking initiative (Javidan, 2004). None of the items correlated significantly with this dimension.

Humane orientation is defined as the degree to which an organization or society encourages and rewards individuals for being fair, altruistic, friendly, generous, caring and kind to others vs self-interest, self-enjoyment and self-enhancement (Kabasakal and Bodur, 2004). Negative correlations were found with never exercise ( $r = -0.53^*$ ), never travel abroad in the EU ( $-0.53^*$ ) and personally own a desktop computer. Positive correlations were found with owning an i-phone ( $r = 0.56^*$ ) and personally own a laptop ( $r = 0.62^*$ ). The significance of these correlations was lower than of the correlations with any other dimension.

### Conclusions

In total, 20 out of 21 dimensions explain differences for the 25 items, be it that some explain better or with higher significance than others. Dimensions with the same name do not explain similar differences. GLOBE's and Hofstede's uncertainty avoidance are by no means similar, neither are the two power distance dimensions.

Dimensions that are most similar in their explanatory power are masculinity/femininity, gender egalitarianism and assertiveness. GLOBE's in-group collectivism shows more results than Hofstede's individualism-collectivism and Schwartz's autonomy-embeddedness. Yet, although in-group collectivism correlates significantly with many items, only in a few cases it is the strongest explaining variable.

The results show that for analyzing specific human behavior areas, a choice can be made from different models. First, the most significant relationships with computer- and internet-related items were with Hofstede's uncertainty avoidance, masculinity-femininity and GLOBE's in-group collectivism. Second, items involving status/success motives were equally well explained by Hofstede's power distance and masculinity/femininity, and by GLOBE's gender egalitarianism and assertiveness. Yet also Schwartz's harmony explained variance. Third, overall the explaining variables showed similar relationships, but relationships with the items never exercise or travel varied strongly. These items would be expected to relate to Hofstede's uncertainty avoidance, but that correlation, though significant, is weak. Another meaningful significant correlation is with low indulgence, but the most significant correlations are with Schwartz's egalitarianism that includes no values that explain the relationship.

This proves that there still is a long way to go on the road to fully understanding the capacity of the three models to explain cross-cultural differences.

### Implications for studies of cross-cultural consumer behavior

This study was meant to define differences and similarities of the three major cross-cultural dimensional models for explaining consumer behavior differences, to assist academic researchers in selecting specific dimensions for comparative analysis of the influence of culture on consumer behavior and attitudes. Without analyzing the explanatory power of specific dimensions, a researcher may easily select dimensions that are not applicable, set the wrong hypotheses, find unexplainable results, and draw the wrong conclusions. Deciding on which dimension to use for analyzing specific phenomena is difficult if purely based on the descriptions by the authors. Knowing which dimensions cover which consumer behavior areas makes it easier to select a specific model or dimension.

### Limitations

The sample items used were limited to specific product categories, activities and attitudes. If some dimensions did not contribute to explaining differences for these categories, they may work well for others. The results are also valid for the group of European countries

used in this study and offer indications of the usefulness of the different dimensions. They may be different for a group of countries worldwide. However, it is not easy to find comparable data for a larger and geographically wider group. The number of items used is limited, with the same excuse. More items are needed to get more clear-cut results.

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