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Revisiting Hofstede's Uncertainty-Avoidance Dimension: A Cross-Cultural Comparison of Organizational Employees in Four Countries

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Abstract: The present study was designed to explore the validity and applicability of the uncertainty-avoidance dimension in the contemporary world. Because social, cultural, and commercial interrelationships among countries have significantly increased since the introduction of this dimension, it would be advisable to revisit and investigate the substantiality of this dimension before making beneficial suggestions to people who engage in cultural encounters. A questionnaire was constructed, tested, edited, and distributed to 2,000 organizational members in Japan, France, Great Britain, and Singapore. Among the 1,258 questionnaires returned, 1,215 were included in the analysis. Not surprisingly, cultural differences among countries still exist. The findings of the present study suggest that cultural characteristics have become more complicated since the uncertainty-avoidance dimension was introduced four decades ago. To yield more detailed guidelines on cultural variabilities, future studies should examine factors such as education, generation gaps, occupations, religions, and degrees of intercultural contacts, along with how these factors influence variability among cultures.

Keywords: uncertainty avoidance, cultural comparison.

1. Introduction

Geert Hofstede (1980) introduced several systematic dimensions of cultural values. His original four dimensions include individualism/collectivism, power distance, masculinity/femininity, and uncertainty avoidance. After the application of these dimensions to various cultural and social issues, scholars have broadly agreed that Hofstede's comparative cross-cultural approach has shaped the basic themes and structure of the field (e.g., Peterson 2003, Lustig & Koester 2006). Among those dimensions, the individualism/collectivism dimension has been the most popularly used in cultural studies followed by power distance (Erez 2011). In contrast, uncertainty avoidance has been one of the least used dimensions in studying cultural phenomena.

As the fourth dimension of the original four, uncertainty avoidance, like the other three, was designed to distinguish work-related values of people in multi-national organizations. Since its introduction, however, the uncertainty avoidance dimension has been used to study various facets in intracultural and cross-cultural encounters such as negotiation interactions (Giebels, Oostinga, Taylor & Curtis 2017), product perceptions (Lee, Garbarino & Lerman, 2007), Internet shopping (Lim, Leung, Sia & Lee, 2004), international marketing (Mooij & Hofstede 2002), medical curricula (Jippes & Majoor 2011) and other topics in business, social sciences, and the medical field.

While Hofstede's cultural dimensions have been generally well accepted as an effective tool to study cultural values, some scholars have questioned their validity (Kirkman, Lowe & Gibson 2006), usefulness (Ashkanasy, Gupta & Mayfield 2004), generalizability (Robinson

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1983), and method of study (McSweeney 2002). To explore whether the uncertainty-avoidance dimension is still valid, scholars have replicated (Merritt 2000; Minkow & Hofstede 2014), re-conceptualized (Sully de Luque & Javidan 2004) and even made a recommendation not to use this dimension -- at least not for international marketing decisions (Messner 2016). Regardless of the questions and criticism, scholars largely agree that intercultural conflicts often take place due to differences in value orientations (Martin & Nakayama 2010; Gunkel, Schlaegel & Taras 2016). To enhance the quality and comprehensibility of this dimension for people who are involved in intercultural environments, it is necessary to reassure its effectiveness. Therefore, this study discusses the characteristics of uncertainty avoidance and the importance of revisiting the uncertainty-avoidance dimension, presents the method (respondents, procedure, and statistical analysis), and finally provides results and a discussion of the current research.

1.1 Uncertainty avoidance

From the earlier introduction of "tolerance for ambiguity" (Martin & Westie, 1959), the uncertainty-avoidance dimension has been used to understand people's behavioral patterns regarding their value orientations in various social settings. For example, this dimension has been used to understand how strangers are treated (Gudykunst & Kim, 2003), how individuals behave and what they should expect in intercultural encounters (Neuliep, 2015) that could produce unforeseen consequences (Beamer & Varner, 2001), and how one should analyze the quality of interactions after cultural meetings are completed (Klopf, 1998). Hofstede (1980) describes uncertainty avoidance as the extent to which people in different cultures perceive unstructured, unclear, or otherwise unpredictable situations with various degrees of nervousness for possible future consequences. People in high-uncertainty avoidance cultures (e.g., Greece, Portugal, and Japan) try to seek stability through formal rules and regulations (Samovar, Porter, McDaniel & Roy 2017) and avoid deviant or ambiguous situations at all costs (Klyukanov 2005). They prefer clearly interpretable and predictable structure in their organizations, institutions, and relationships (Hofstede 2001) as motivated by job (Hofstede, Hofstede & Minkov 2010) and life (Chen & Starosta 1998) security. Because people see uncertainty as a hazard that must be fought (Hofstede 1980), overcome (Lustig & Koester 2006) or avoided (Neuliep 2015), it is linked to a level of anxiety and stress (Samovar & Porter 2001) that directly correlates with communication apprehension (Neuliep & Ryan 1998).

On the other hand, people in low uncertainty-avoidance cultures (e.g., Singapore, Denmark, and Sweden) can more easily accept uncertainty as a normal part of life (Neuliep 2015), are not as threatened by deviant people or situations (Samovar & Porter 2001), and are motivated by their achievements and personal esteem (Hofstede, Hofstede & Minkov 2010). Because people show a high tolerance level for innovative ideas that may conflict with the social norm (Hofstede, Hofstede & Minkov 2010), they often show tendencies that welcome ambiguity (Klyukanov 2005) and see unclear situations as many shades of gray in life (Andersen 2000). Consequently, people tend to "take more initiative, show greater flexibility, and feel more relaxed in interactions" (Chen & Starosta 1998: 52), while accepting dissent (Martin & Nakayama 2010) and taking risks (Samovar & Porter 2001) that would cause less stress. These cultural tendencies perhaps stem from early childhood education when students feel comfortable in unstructured learning environments where they are rewarded for innovative approaches to problem solving (Hofstede 1986).

In terms of geographical location, southern Europeans and South Americans have historically dominated the list of high uncertainty-avoidance cultures (Andersen 2000), possibly due to their Roman Catholic religious backgrounds (Hofstede 1982) in which they tend to have an extensive system of rules and laws that govern social conduct (Lustig &

Koester 2006). More frequently, people in northern European and south Asian cultures display low uncertainty-avoidance predispositions (Andersen 2000): anywhere that Protestant Christians, Hindus, and Buddhists dominate national populations (Hofstede 1982).

1.2 Importance of revisiting the uncertainty-avoidance dimension

When Hofstede's value dimensions were first introduced, some critics argued that culture has received more than its proportionate share of attention (Bhagat & McQuaid 1982). However, in this modern time when global interconnectedness continues to expand vigorously to new cultural, social, political, commercial, and educational fields, it is evident that culture-focused studies are becoming more in demand, both in terms of topics and depth. At the same time, because intercultural-communication mistakes can be costly (Sorrells, 2013), it is necessary to revisit findings that provide meaningful information about past human behavior.

Many cultures possess a high or low uncertainty-avoidance orientation. Other cultures may show mixed characteristics that place them along a continuum. On the individual level, people associate uncertainty with concern for loss or desire to win (Demaree, DeDonno, Burns & Everhart 2008), fear of failure or hope for success (Cheung & Chan 2007), a sense that what is different is dangerous (Hofstede, Hofstede & Minkov 2010) or a sense that what is different is curious (Neuliep 2015). When people interact with those from different cultures, it is important to know expectations and how to judge cultural behaviors expressed by one's counterparts. People's level of tolerance for uncertain and unpredictable situations varies across cultures (Neuliep 2015), and communication strategies and ability to adapt to ambiguous situations are different (Gudykunst & Kim 2003). Factual understanding of other people's behavioral tendencies based on their value system should prepare one for more successful outcomes in cultural interactions.

To find practical ways to increase predictability and manage uncertainty in multicultural settings, scholars have generated theories that can be used in intercultural communication settings. Those attempts include the uncertainty-management theory, which suggests that effective interpersonal, intergroup, and intercultural communication is a function of how individuals manage the anxiety and uncertainty they experience when interacting with others (Gudykunst 1995); the theory of motivated information management, which links the uncertainty and interpretation phase (Afifi & Weiner 2004); and uncertainty reduction theory (Berger & Calabrese 1975, Douglas 1991), which offers principles and derived assumptions that describe communicative and noncommunicative causes and consequences of uncertainty (Bradac 2001). While referencing these efforts that strive to clarify scholarly avenues and enhance the quality of cultural instructions, the aim of the present study is to address two research questions:

> **RQ1:** Do organizational members in Japan and France (high uncertainty-avoidance countries) present a higher degree of uncertainty avoidance compared to organizational members in Great Britain and Singapore (low uncertainty-avoidance countries)?
>
> **RQ2:** Do organizational members in Japan and France present a higher degree of uncertainty-avoidance characteristics in four subcategories: degree of ambiguity judgment, level of risk taking, acceptance of rules and regulations, and tolerance level for uncertain situations?

2. Method

To explore the current validity of the uncertainty-avoidance dimension for organizational members in four countries, a questionnaire was used. To measure the reliability of the questionnaire, a pilot study was conducted with 142 participants (Japanese, $n = 36$; French, $n = 39$; English, $n = 35$; Singaporean, $n = 32$) using English, Japanese, and French versions of

the questionnaire, which led to the adjustment of length, improvement of equivalent word choices, and modification of question arrangement. Even though 74.3% of the Singaporean population consisted of people with Chinese background (Xie & Cavallaro 2016), English is the first language of Singapore for education and business (Rubdy & Tupas 2009). Therefore, the English version of the questionnaire was used for Singaporean participants. The questionnaire for the main study consisted of 40 items divided into four subcategories to explore issues relating to uncertainty avoidance such as degree of ambiguity judgment, level of risk taking, acceptance of rules and regulations, and tolerance level for uncertain situations.

2.1 Respondents

Forty-two international members of the National Communication Association (USA), a professional membership-based academic society that advances communication as a discipline, were contacted for participation. However, not enough members were recruited to distribute the survey to respondents from the top three high uncertainty-avoidance countries (Greece, Portugal, Belgium) from Hofstede's original ranking of forty countries; see Appendix A. In the end, Japan (#4) and France (#7) were included to represent high uncertainty-avoidance countries. Scholars from Great Britain (#35) and Singapore (#40), representing low uncertainty-avoidance countries, agreed to help collect data. Finally, two scholars from each of the four countries agreed to conduct, collect, and return the questionnaires. Because the degree of urbanization (Hofstede 2001) and location within a country (Yi 2004) could affect people's value orientations and behavioral patterns, two cities with a varying population size were selected in each of the four countries for data collection.

Table 1 indicates the number of participants representing each country (n = 1,215; males: n = 736; females: n = 479) with employment in private (n = 984; males: n = 654; females: n = 330), and government-related organizations (n = 231; males: n = 48; females: n = 183). For purposes of the present study, a large city is defined as having more than one million residents and a small city as having fewer than 500,000. In Japan, there were 179 participants from Yokohama, a large city (males: n = 111; females: n = 68) and 141 from Matsudo, a small city (males: n = 82; females: n = 59). In France, there were 172 participants from Paris (males: n = 96; females: n = 76) and 163 from Toulouse, a small city (males: n =98; females: n = 65). In the UK, there were 133 participants from Birmingham, a large city (males: n = 82; females: n = 51) and 145 from Liverpool, a small city (males: n = 93; females: n = 52). In Singapore, 145 participants were from metropolitan areas (males: n = 90; females: n = 55) and 137 from suburban areas (males: n = 84; females: n = 53). Sixty-four percent of participants (n = 778; males: n = 479; females: n = 299) said that they grew up or studied in cities comparable to the size of the city in which they were employed.

Table 1: Summary of respondents.

	Small city		**Large city**		**Male**	**Female**	**Total**
Japan	Matsudo	141	Yokohama	179	193	127	320
France	Toulouse	163	Paris	172	194	141	335
Great Britain	Liverpool	145	Birmingham	133	175	103	278
Singapore	suburban	137	metropolitan	145	174	108	282

The Singaporeans were the oldest group (M = 38.6 years) followed by the Japanese (M = 36.2 years), the British (M = 31.3 years) and the French (M = 30.6 years). The oldest participant was a Singaporean female who works at the government health department (59.8 years). The youngest participant was a female college student interning at a bank in Toulouse (20.6 years).

2.2 Procedure

After being constructed in English, the questionnaire was translated into French and Japanese for both the pilot and main study. Proper translation was imperative to ensure that the same meanings of words and phrases were presented; see Appendix B. After the translations were done, back translations (Brislin, 1980) were performed by native speakers of French and Japanese who did not see the original text. Even though this method is controversial (Behr 2017), has no clear scientific basis (McKenna & Doward 2005), and does not address issues of conceptual equivalence (Douglas & Craig 2007), it is still believed to be an effective technique for cross-cultural studies (Gudykunst et al. 1992) and a practical way to improve translation fidelity (Ting-Toomey et al. 1991) if carefully executed. It has been widely used in cross-cultural research and produced meaningful suggestions (Ayyash-Abdo 2001; Choi, Kushner, Mill & Lai 2012).

Two hundred and fifty copies of the questionnaire were sent to each location. Because Singapore is a city state of 5.8 million people, it was divided into a metropolitan and suburban area for purposes of this study. Among 1,258 copies returned, 1,215 were included in the statistical analysis. Forty-three were excluded for various reasons: e.g., twelve participants did not sign the consent form and thirteen did not answer demographic questions about age, gender, and nationality. Eighteen were excluded because the participants' nationalities differed from the location of employment.

To reduce the possibility of participants interacting with one another while completing the questionnaire, participants were advised not to discuss questions with other participants or take the questionnaire home to discuss with friends or family. This was done to improve the accuracy of thoughts and values without risk of contamination.

3. Statistical analysis

After the data were collected, a simple analysis of variance (ANOVA) was used to compare means for factor scores concurrently. The dependent variable was uncertainty-avoidance level, and the independent variable was location. The unit of analysis was the total mean score of forty items for each respondent followed by the mean score for four subitems as a separate unit of analysis. Nationality, age, and type of organizations were used to describe the participants; gender was the only demographic information included in the statistical analysis.

A factor analysis was conducted to see how items were grouped and if consistent groupings were produced when compared with previous studies. This was done to assure that the findings could be interpreted as the indicators of the dimension that this study aimed to explore. The questionnaire was constructed by using Likert scales with 5 for “strongly agree”, 4 for “agree”, 3 for “neutral”, 2 for “disagree”, and 1 for “strongly disagree”. Reliability for each item was computed using Cronbach’s alpha coefficient for inter-item consistency. The Duncan Multiple Range test was performed to compare pairs of means followed by significant F-ratios to calculate the variation among group means.

The reliability was $\alpha = 0.63$ for the pilot-study questionnaire items and $a = 0.89$ for the main study. After modification and rearrangement of items into four subgroups, the Cronbach’s alpha coefficient of reliability was $\alpha = 0.89$ for degree-of-ambiguity judgment items, with inter-item correlations ranging from -0.01 to 0.41; $\alpha = 0.87$ for level-of-risk-taking items, with inter-item correlations ranging from -0.01 to 0.39; $\alpha = 0.90$ for acceptance-of-rules-and-regulations items, with inter-item correlations ranging from -0.02 to 0.34; and $\alpha = 0.91$ for tolerance-level-for-uncertain-situation items, with inter-item correlations ranging from -0.03 to 0.32.

Research Question 1 was supported by the data. Research Question 2 yielded interesting interpretations. The Japanese participants presented the highest overall uncertainty avoidance ($n = 320$; $M = 132.24$; $SD = 9.87$) followed by the French ($n = 335$; $M = 120.68$; $SD = 9.88$),

the English (n = 278; M = 117.73; SD = 8.67), and the Singaporeans (n = 282; M = 107. 55; SD = 7.39). As indicated in Table 2, the findings are consistent with Hofstede's original ranking of countries on uncertainty avoidance, except that the British females scored slightly higher (n = 103; M = 125.34; SD = 7.65) than the French females (n = 141; M = 124.11; SD = 8.24) albeit without a significant difference (F = 3.67; df = 1; p = 0.059). Significant differences were found between the Japanese and British participants (F = 1.36; df = 1; p = 0.005), Japanese and Singaporean participants (F = 1.12; df = 1; p = 0.005), and British and Singaporean participants (F = 1.24; df = 1; p = 0.005). Even though France is historically categorized as high uncertainty avoidance and Great Britain as low uncertainty avoidance, the findings indicate that the gap between them was narrower than expected and without statistical significance (F = 3.45; df = 1; p = 0.059).

Table 2: Uncertainty avoidance differences by country.

	# of items / possible score	**Overall mean score (ranking)**	**Male mean score (ranking)**	**Female mean score (ranking)**
Japan	40/200	132.24 (1)	128.69 (1)	136.29 (1)
France	40/200	120.68 (2)	117.18 (2)	124.11 (3)
Great Britain	40/200	117.73 (3)	114.27 (3)	125.34 (2)
Singapore	40/200	107.55 (4)	106.45 (4)	115.80 (4)

As indicated in Table 3, the small-city Japanese showed the highest uncertainty avoidance among all eight groups (n =141; M = 141. 79; SD = 15.02), followed by the large-city Japanese (n = 179; M = 137. 67; SD = 14.45), the large-city French (n = 172; M = 122.69; SD = 14.42) the small-city French (n = 163; M = 118.94; SD = 12.22), the small-city British (n = 133; M = 118.37; SD = 11.89), the large-city British (n = 145; M = 116.35; SD = 12.98), the suburban Singaporeans (n = 137; M = 109.89), and the metropolitan Singaporeans (n = 145; M = 105.48; SD = 11.39).

Table 3: Uncertainty avoidance differences by in-country location.

	# of items / possible score	**Overall mean score (ranking)**	**Male mean score (ranking)**	**Female mean score (ranking)**
Matsudo*	40/200	135.11 (1)	129.72 (1)	137.24 (1)
Yokohama**	40/200	130.89 (2)	127.23 (2)	136.77 (2)
Paris**	40/200	122.69 (3)	116.88 (3)	124.89 (4)
Toulouse*	40/200	118.94 (4)	114.64 (5)	123.39 (6)
Birmingham**	40/200	118.37 (5)	116.24 (4)	124.68 (5)
Liverpool*	40/200	116.35 (6)	112.04 (6)	126.77 (3)
sub. Singapore*	40/200	109.89 (7)	107.64 (7)	116.38 (7)
met. Singapore**	40/200	105.48 (8)	102.89 (8)	115.08 (8)

*city with less than 500,000 people; **city with more than 1,000,000 people.

Females of all eight groups showed higher uncertainty avoidance compared with males of the same city. Previous research has found that females are less likely to take risks than males (Pawlowski, Atwal & Dunbar 2008), three times less likely to break the law (Tsirigotis 2018), and generally more likely to make safe choices (van Geen 2013). Cultures place importance on gender differences (Yeganeh & May 2011) that can be seen as manifestations of societal norms and values (Neculaesei 2015). The findings in this study are overall consistent with previous research. However, as indicated in Table 2, the Singaporean females showed lower uncertainty avoidance than Japanese or French males. As employees in Japanese organizations have bene shown to exhibit the lowest level of risk taking in cross-cultural analysis (John, Litov & Yeung 2008) while the French are well-known for precise schedule planning to avoid surprises (Browaeys & Price 2008), it would be plausible to argue that

certain overwhelming cultural values might be a stronger influence on cultural-value formation than gender.

Table 4 shows uncertainty-avoidance scores divided into four subcategories: degree of ambiguity judgment, level of risk taking, acceptance of rules and regulations, and tolerance level for uncertain situations. For degree of ambiguity judgment, the Japanese females from Matsudo (n = 59; M = 34.02; SD =4.32) scored highest followed by the British females from Liverpool (n = 52; M = 31.99; SD =4.64). The two groups with the lowest score were the metropolitan Singaporean males (n = 90; M = 24.53; SD = 3.45) and the suburban Singaporean males (n = 84; M = 25.73; SD = 3.79). The item that yielded the highest mean-score difference was "I do not like ambiguous situations that I cannot predict outcomes". For this item, the Japanese females from Yokohama had the highest scores (n = 68; M = 4.11; SD =0.67) and the suburban Singaporean males the lowest (n =84; M =2.14; SD =0.78) that produced a significant statistical difference (F = 1.09; df = 1; p = 0.005).

Table 4: Uncertainty avoidance mean-score differences by subcategory.

	Ambiguity judgment (m/f)	**Risk taking (m/f)**	**Rules & regulations (m/f)**	**Tolerance level (m/f)**
Matsudo*	32.39/34.02	34.12/34.74	31.69/35.61	31.52/32.87
Yokohama**	30.68/31.97	32.14/35.81	33.02/33.12	31.39/35.87
Toulouse*	29.77/30.98	27.53/32.22	30.32/31.67	27.02/28.52
Paris**	29.60/30.94	30.84/34.01	28.60/27.20	27.84/32.74
Liverpool*	28.93/31.99	26.91/32.11	28.03/33.20	28.17/29.47
Birmingham**	27.26/31.96	31.11/29.83	28.45/32.82	29.42/30.07
sub. Singapore*	25.73/28.23	25.84/29.94	28.84/30.45	27.23/29.22
met. Singapore**	24.53/28.70	24.34/28.98	27.90/30.17	26.12/27.20

*city with less than 500,000 people; **city with more than 1,000,000 people. Each subcategory comprised ten questions for a total of 50 possible points.

For level of risk taking, the Japanese females from Yokohama scored highest (n = 68; M =35.81; SD = 5.99) and the metropolitan Singaporean males lowest (n = 90; M = 24.34; SD = 5.87). Chinese people (74.3% of Singaporeans have a Chinese background) view gambling as a way of life and an enjoyable form of recreation (Clark, King & Laylim 1990). Because of concern for the impact of gambling on family members and society outweighing the benefits of potential gains (Ozorio, Lam, & Hong 2010), the National Council on Problem Gambling in Singapore has been closely monitoring gambling among Singapore residents (NCPG 2015). Even though people in most cultures gamble, the tendency toward risk taking represented by gambling differ between cultures, as reflected in answers to one question that stated: "I do not enjoy gambling as it poses potential loss". For this item, the Japanese females from Matsudo scored highest (n = 59; M = 4.08; SD =0.76) and the suburban Singaporean males lowest (n =84; M =2.25; SD =0.68) with a significant statistical difference (F = 1.10; df = 1; p = 0.005). This finding is consistent with previous research that games of chance (e.g., the lottery) are more often played in countries with a low uncertainty-avoidance index (Hofstede 2001).

Another item in this category yielded an intriguing result. Participants were asked to evaluate the statement "I do not enjoy dangerous sports activities such as bungee jumping or mount-biking." For this item, the French females from Paris had the highest score (n = 76; M = 3.73; SD = 1.04) and the French males from Toulouse the lowest (n = 98; M = 2.52; SD = 1.34). This suggests that people in different cultures perceive gambling, sports activities, and purchasing expensive goods as different kinds of risk-taking behavior. This outcome calls for judicious exploration and analysis.

For the acceptance-of-rules-and-regulations section of the questionnaire, the Japanese females from Matsudo had the highest score (n = 59; M = 35.61; SD = 5.35) followed by the

British females from Liverpool (n = 52; M = 33.20; SD = 5.68), slightly higher than the Japanese females from Yokohama (n = 68; M = 33.12; SD = 5.74). The metropolitan Singaporean males scored lowest (n = 90; M = 27.90; SD = 4.37): significantly lower than both the Japanese females from Matsudo (F = 1.10; df = 1; p = 0.005) and the Japanese males from Yokohama, who had the highest score among all eight male groups (n = 111; M = 33.02; SD = 6.01; F = 1.64; df = 1; p = 0.005).

The Japanese females from Matsudo appeared to be the most sensitive to rules and regulations, scoring the highest on Question 3, which stated: "I prefer specific instructions to broad guidelines" (n = 59; M = 4.12; SD = 0.57); and Question 7, which stated: "With possible penalties existing, I would not break rules for mere pragmatic reasons" (n = 59; M = 4.18; SD = 0.78). The British males from Birmingham scored the lowest on Question 3 (n = 82; M = 2.77; SD = 0.68) and the metropolitan Singaporean males the lowest on Question 7 (n = 90; M = 2.65; SD = 0.78).

The last subcategory – tolerance level for uncertain situations – yielded similar results to the other three subcategories. The Japanese females in Yokohama scored the highest (n = 68; M = 35.87; SD = 7.29) and the metropolitan Singaporean males the lowest (n = 90; M = 26.12; SD = 6.45). Interestingly, the French females in Paris (n = 76; M = 32.74; SD = 7.35) and Toulouse (n = 65; M = 28.52; SD = 6.79) had mean scores that were significantly different (F = 1.68; df = 1; p = 0.005), which was unexpected, since they represent the same country. The question with the highest mean-score difference in this category was "I feel stressful when I cannot predict consequences". For this item, the French females from Paris scored the highest (n = 76; M = 4.12; SD = 0.76) and the suburban Singaporean males the lowest (n = 84; M = 2.46; SD = 0.68).

For Research Question 1, the findings were consistent with Hofstede's national rankings of uncertainty avoidance, whereby people in Japan and France tend to be more inclined to high uncertainty avoidance, while people in Great Britain and Singapore show low uncertainty avoidance. The results for Research Question 2 – where the uncertainty-avoidance dimension was divided into four sub-categories – were, as noted, mixed. The findings indicate that gender and location within a country can be compelling factors in judging national values on uncertainty avoidance.

4. Discussion and implications

Since the introduction of Hofstede's landmark book on cultural values, considerable advancement has been made in studying the relationship between cultural composition and human behavior. Knowing that this advancement continues, the present study did not attempt to produce conclusive evidence on uncertainty avoidance nor does it criticize this dimension by finding flaws in terms of its usefulness or authenticity. Instead, this research inquires about the validity and applicability of past interpretations of this dimension in the context of the contemporary cultural environment. It emphasizes the importance of sensitivity and adaptation to cultural changes. Culture is extremely complex (Harvey 1997), fluid (Matsumoto, Kudoh & Takeuchi, 1996), and vague (Morris 2013). For people who operate in unfamiliar communicative settings, effective preparation and accurate comprehension of cultural factors increases their chance for successful international encounters.

4.1 Limitations of the research

All participants in this study were organizational employees and as such do not constitute a representative sample of the population of the four countries surveyed. With that limitation in mind, this study attempted to find possible variations in cultural values by including gender and location for sub-analysis.

Scholars have suggested that, in addition to these factors, generation gap is an important aspect for cultural studies (Yu & Miller 2003, Parry & Urwin 2017). To yield more generalizable findings, future studies should include factors such as generational differences, education, religion, and occupation.

To measure the degree of people's uncertainty avoidance, this study employed a questionnaire. Although a survey is useful to "obtain information describing characteristics of a large sample of individuals" (Ponto, 2015: 168) tending to yield high reliability (Babbie 2001), it could lack depth on the topic being investigated (Kelley, Clark, Brown & Sitzia 2003) and cannot, in any case, evaluate the actual behavior of participants (Monette, Sullivan & DeJong 1986). To improve accuracy, future studies should consider other methods such as participant observation that would allow the opportunity to document people's behavior in real-life situations (Nation 1997) rather than relying upon participants' statements (Persell 1984).

4.2 Implications

Despite these limitations and unanswered questions about the relationship between value formation and human behavior, the present study conveys two important messages. First, although cultural interrelationships among countries display a steadily increasing curve in various aspects, cultural differences still exist in diverse facets including perception of uncertainty avoidance. People could benefit from cultural studies if more precise approaches were made in terms of participants and methods. Second, because of increased frequency of cultural encounters, cultural gaps between countries might be narrower than people presume. To assure more successful and promising outcomes in cultural activities, careful descriptions of cultural changes should be provided.

Most cross-cultural studies focusing on value differences offer practical and theoretical guidelines about the way people from different cultures interact with others. However, not many studies demonstrate why people exhibit values that are different from those of people in other regions or nations. Some scholars speculate that value differences might stem from cultural traits (Boyd & Richerson 2005), cultural environment (Nisbett 2003), religion/spirituality (Schwartz 1992), or national wealth (Cox, Friedman, & Tribunella, 2011). Because values, attitudes, beliefs, and behaviors shared by a cultural group must have reasons, in-depth exploration in future studies would provide valuable instruction on understanding cultural value development and practices.

5. Conclusions

People live in a world that is significantly different from the one Hofstede surveyed four decades ago. Economic advancement, transportation, technology, and social media have helped to speed globalization; the shift of culture has influenced the way people think and behave. In this study, cultural differences were found, but it would be a mistake to confine individuals from other cultures to boundaries suggested by scholars and researchers. Findings from cross-cultural studies offer guidelines for people to equip themselves better in cross-cultural situations so long as they do not apply these findings as hard-and-fast rules when they participate in cultural activities. In an effort to include more countries, factors, and variation in future studies, highly explicit and generalizable outcomes and guidance for people can be offered.

About the author

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Appendix A: Ranking of countries on uncertainty avoidance

Ranking	Country
1	Greece
2	Portugal
3	Belgium
4	***Japan***
5	Yugoslavia
6	Chile
7	***France*** (tie)
7	Peru (tie)
9	Spain
10	Argentina
11	Turkey
12	Mexico
13	Israel
14	Colombia
15	Venezuela
16	Brazil
17	Italy
18	Pakistan
19	Austria
20	Taiwan
21	Germany
22	Thailand
23	Iran
24	Finland
25	Switzerland
26	the Netherlands
27	Australia
28	Norway
29	South Africa
30	New Zealand
31	Canada
32	USA
33	Philippines
34	India
35	***Great Britain***
36	Ireland
37	Hong Kong
38	Sweden
39	Denmark
40	***Singapore***

A low ranking means that the country can be considered one that is comfortable with uncertainty and *vice versa*. The four countries participating in the study are in italics.

Appendix B: Sample questions (English/French/Japanese)

I do not like ambiguous situations that I cannot predict outcomes.
Je n'aime pas les situations ambiguës dont je ne peux pas prédire les résultats.
予測のつかないあいまいな状況が好きではない。

I do not enjoy dangerous sports activities such as bungee jumping or mount-biking.
Je ne prends aucun plaisir dans les activités sportives dangereuses, comme le saut à l'élastique ou le vélo de montagne.
バンジージャンプやマウンテンバイクのような危険なスポーツは楽しめない。

I feel stressful when I cannot predict consequences.
Je me sens stressé(e) quand je ne peux pas prédire les conséquences.
結果が予想できないとストレスを感じる。

I do not like to choose risky alternatives when making decisions.
Je n'aime pas choisir des alternatives risquées quand je prends des décisions.
何かを決めるときにリスクのある選択肢は選ぶのは好きではない。

I prefer to be sure of something before purchasing.
Je préfère être sûr(e) de quelque chose avant de l'acheter.
何なのかしっかり分かってから購入したい。

I take precautions for the unexpected before starting a task.
Je prends en compte les choses imprévisibles avant de commencer quelque chose.
何かを始める前に不測の事態に警戒する。

It is important for me to have long term security of employment.
Il est important pour moi d'avoir une sécurité d'emploi à long terme.
安定した長期雇用につけることが大事だ。