

How relevant are Hofstede's dimensions for inter-cultural studies? A replication of Hofstede's research among current international business students

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In the present study the cultural dimensions of the well known Dutch researcher Geert Hofstede were tested on a sample of international business students. The sample consisted of 1 033 students from the Netherlands, Germany, China, South Africa and Qatar. The findings of the present research contest many of Hofstede's original findings. The dimensions power distance and long-term orientation show significant differences with Hofstede's original country values. The dimensions individualism, masculinity and uncertainty avoidance show significant differences for half of the countries. No significant differences were found between male and female students. The results show— if anything — that Hofstede seems to be right with his warning to be careful with relatively small samples. Or, it might be that cultures are less stable after all.

Keywords: Hofstede's cultural dimensions; Dutch, German, Chinese, South African, Qatari business students

Geert Hofstede's theory of cultural dimensions

Geert Hofstede is one of the leading academics on culture (Søndergaard, 1994; Kirkman et al., 2006; Merkin et al., 2014). His original research was conducted in the late 1960s and used an impressive sample of 116 000 – mainly male – IBM engineers. Based on his analysis of the dataset, he initially distinguished four, later five and finally even six dimensions of cultural orientation that are different for various national cultures (Hofstede, 2001; Hofstede et al., 2010b). According to Hofstede, these dimensions are both distinctive and stable.

Hofstede (2001) argues that every person carries his/her own "mental programme" which is already formed in their childhood and further developed later in academic institutions and organisations. These programmes contain parts of national culture. Hofstede et al. (2010b) state that the concept of culture can best be described by naming symbols, heroes, rituals, and values as its main components. Differences between people's mental programmes can be best assessed by comparing the values that prevail among citizens of different countries. Values are the stable element in culture. Social anthropology assumes that all societies face more or less the same problems; researchers have suggested the relation to authority, the relation between individual and society, every person's understanding of masculinity and femininity and their ways of dealing with conflicts as common core issues. When analysing the first results of his widely known study at IBM in the late 1960s, Hofstede was able to verify this classification because results within the categories differed significantly among employees from different countries. He called the four categories "dimensions" and depicted them in his 4-dimension model (4D model): **Power distance** "can be defined as the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally". (Hofstede et

al., 2010b, p. 61) Secondly, **collectivism versus individualism** means whether members of a society are rather expected to care for themselves or if it is deemed best to first look after the welfare of the society. **Femininity versus masculinity** specifies the extent to which the prevailing values of a society are "masculine" (e.g., assertive and competitive) or if gender roles do overlap. Lastly, **uncertainty avoidance** "can be defined as the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede et al., 2010b: 191) and try to avoid such situations.

Later, in 1985, Hofstede added a fifth dimension "**long-term orientation versus short-term orientation**", which resulted from his collaboration with the Chinese University of Hong Kong. It combines the values of persistence, thrift, ordering relationships by status and observing this order, and having a sense of shame on the one hand as well as reciprocation of greetings, favours, gifts, respect for tradition, protecting one's "face", and personal steadiness and stability on the other hand (Hofstede et al., 2010b, p. 236/237).

Criticism

Despite the broad acceptance of Hofstede's framework, many other researchers have raised critical challenges and Hofstede has even met with fierce opposition. Especially McSweeney (2002) criticised Hofstede's approach in several respects: his main reproaches are that surveys are not the most suitable way and nations not the best units to examine cultural differences. Also it would be methodically questionable to assign the results of single employees from one company to their entire nation's scores and that five dimensions are not enough to sufficiently determine cultural aspects. Furthermore, the IBM data would now be outdated. In reaction to McSweeney's (2002) criticism, Hofstede (2002) argued that his survey measured the differences between nations, no absolute numbers and

agrees with McSweeney (2002) that nations are not the most suitable way for measuring cultural aspects but often the only available for conducting this kind of research. Hofstede (2002) is also of the same opinion that surveys should not be the only research instrument and he welcomes every researcher to come up with proposals to define further dimensions. He rejects the accusation of relying on outdated data by claiming that they have centuries-old roots and that recent replications show no loss of validity. Williamson (2002) contributes to this discussion with an unbiased view from a third person and can be recommended for further reading in this regard.

Jones (2007) lists in his comparison of strengths and weaknesses of Hofstede's methodology many of the points McSweeney (2002) mentioned and adds the issue of possible political influences to the development of some dimensions (especially masculinity and uncertainty avoidance) in the time of the Cold War. Orr and Hauser (2008, p. 16) cite the same argument when recommending that Hofstede's "theoretical constructs need to be thoroughly reexamined within the context of early 21st century cross-cultural attitudes and patterns of behavior". Signorini et al. (2009) criticise the "oversimplification" of cultural differences and inconsistencies between categories in Hofstede's 5-D-model and find fault with the fact that it is static, not dynamic.

Fang (2003) focuses on Hofstede's fifth dimension as he argues that there is a philosophical flaw underlying the assumptions of this dimension because the short-term oriented values are labelled as negative and long-term ones as exceptionally positive, which violates the Chinese principle of yin and yang. Furthermore, Fang (2003) notices that the fifth dimension consists of many overlapping value attributes which might lead to confusion and he points out that these values are based on the opinions of students who do not necessarily represent a majority of the population. Consequently, he challenges the validity of Hofstede's fifth dimension and proposes to take the concept of yin and yang into closer consideration for possible revision of some of the aspects of this dimension.

Yeh (1983) also focuses on the Asian context and doubts that Hofstede's analysis of Asian (especially Chinese and Japanese values) is sufficient, because they may interpret value scales in a different way than citizens from Western countries do or may hold other values that are not considered by Hofstede. However, as Minkov and Hofstede (2011) describe, Geert Hofstede tried to solve the "Western bias" in his original VSM by introducing the fifth dimension of long-term-orientation, which he had found to be especially relevant for Chinese respondents.

In a similar way, Huo and Randall (1988) present their findings that sub cultural values from habitants of four different Chinese-populated regions are likely to vary significantly and lead to distorted results. Kwon (2012) extends this research using Hofstede's dimensions to regional differences in China concerning work-related values. Hofstede et al. (2010a) come to a similar conclusion based on their attempt to compare the results of the VSM from different Brazilian counties. As they state, they regard the VSM as "too coarse a net for catching the finer cultural nuances between Brazilian states. Adding locally defined items would have made the studies more meaningful" (p. 336).

Orr and Hauser (2008) emphasise in this context that the

change in the political landscape in recent years entails that cultural and sub-cultural differences that were constrained over a long period of time have started to emerge. This should be taken into consideration when applying Hofstede's dimensions.

Replications in various contexts

The large number of publications referring to Hofstede's work and using his approach indicates its high relevance for over 40 years now. His five dimensions are the most widely recognised and robust (Gong et al., 2007) framework for doing national culture research (Hambrick and Brandon, 1988) and Hofstede's work can still be seen as the most comprehensive and relevant study of cultural differences (Holden, 2004).

As Hofstede (2001, p. 461) writes, all six areas that he proposed for further continued research more than 20 years ago (1. non-Anglo cultural dimensions; 2. additional countries; 3. cultural changes over time; 4. sub-cultures, such as regional, occupational, and organisational cultures; 5. the consequences of cultural dimensions; and 6. foreign organisational and management theories) have been covered. Søndergaard (1994) provides an early overview and classifies citations of Hofstede's work. Besides mere mentioning, criticisms (see above), replications as well as paradigmatic applications are the most common categories. The most recent and comprehensive overview of applications and replications of Hofstede's research in any field has been published by Kirkman et al. (2006). Different from Søndergaard (1994), they classify applications and replications from Hofstede's work as studies where culture is examined as a main effect (Type I studies) at the individual level of analysis, and then at the group/organisation and country levels. Studies that incorporate culture as a moderator, they call Type II studies.

Hofstede et al. (2010b, p. 35) identify six major replications by Hoppe (1990) in an Austrian "elite" context, Shane (1995) on employees, Merritt (1998) on US-American airline pilots, de Mooij (2001) on consumers, Mouritzen and Svava (2002) in a municipal context and van Nimwegen (2002) on bank employees. All six studies mainly confirmed his finding from the original IBM study.

Also, within the fields of tourism studies (Crotts, 2004; Litvin et al., 2004) and information technology (Harvey, 1997; Smith and Chang, 2003) and Kang and Mastin (2008) with their research on tourism public relation websites as a combination of both, some researchers have conducted studies in which they applied or replicated Hofstede's work. Another major field of replication is the attempt to extend Hofstede's findings to other countries or continents. Jackson (2011) focused on Africa, Gray and Marshall (1998) on Kenyan and Korean management orientations, Vadi and Meri (2005) used Hofstede's framework to compare it to Estonian culture, Nasierowski and Mikula (1998) measured the cultural dimensions of Polish managers, and Naumov and Puffer (2000) did the same in a Russian context.

Fernandez et al. (1997) replicated Hofstede's IBM-study also in a working-related context although their sample of 7 201 respondents did not consist of employees from only one company. The nine countries included were the USA, Germany, Japan, the former Yugoslavian states, China, Venezuela, Mexico, and Chile, and their results yielded useful findings of some significant changes – some of the values of

the population of some states had undergone in the years since the Hofstede-study was conducted. Wu (2006, p. 185) conducted an update of the original study in one eastern culture, Taiwan, and one Western, the USA. His results suggest “that work-related cultural values in a specific culture are not static and can be changed over time” and support Fernandez et al.’s (1997) findings. Thus, both authors recommend the periodic updating and re-evaluation of many cultural theories and examinations.

Replication using a student population

This study will elaborate on research that has been conducted applying or replicating Hofstede’s approach with a student population. Similar to the publications in other contexts, most of the authors pursue a more concrete goal and/or are doing research within a narrower field of study (e.g. a certain degree programme) than conducting a replication of Hofstede’s research. In this regard, Bearden et al. (2006) as well as Blodgett et al. (2008) tried to apply the VSM questionnaire at an individual level to find out if this would also have the potential to yield valuable results. However, as expected and suggested by Hofstede et al. (2008), both come to the conclusion that the instrument lacks sufficient validity and is unsuitable to represent multidimensional traits since the instrument is explicitly designed for application in a national context.

Often, the Hofstede approach is used to evaluate cultural aspects of the focus group in combination with other instruments or applied only partly with regard to the measurements of certain dimensions as, for example, Gerritsen (2012) did to measure the uncertainty avoidance indices of 84 Dutch and German Bachelor’s students by using the original VSM 94. Payan et al. (2010) focused on the dimension of individualism/collectivism when they asked marketing and business students from nine countries about their perceptions of academic honesty and then compared the results obtained against Hofstede’s original country scores. Simeon et al. (2001) concentrated on the masculinity-index when they examined gender role attitudes in China, Japan and the USA from altogether 2 832 business students. For this purpose they distributed a revised version (by Dorfman and Howell in the late 1980s) of Hofstede’s work-related cultural value scale to measure and compare masculinity and femininity in the three focus countries.

The former research design seems to be applied more commonly, as the following examples show. Quite specific and focused appears Littlemore’s (2003) study of the understanding and interpretation of metaphors used by British lecturers of Bangladeshi students at a British university. In order to evaluate possible cultural differences between both groups, the author administered Hofstede’s VSM questionnaire.

Boland et al. (2011) had undergraduate students majoring in accounting from Australia (59 respondents), Belgium (121 respondents) and Japan (64 respondents) at different universities in these three countries fill out Hofstede’s VSM for Young People 97 version and Kolb’s Learning Style Inventory to examine if a relation between cultural factors and the students’ learning preferences can be established. Also within the field of accounting but with a more psychological notion, Ho and Lin (2008) used Hofstede’s VSM 94 as a part of their data collection to evaluate the participants’ cultural values. In

combination with Thorne’s Defining Issue Test (assessment of the moral development) they aimed to test the relationship between cultural values and cognitive moral development.

In an educational context, Sulkowski and Deakin (2009) used Hofstede’s dimensions to devise their own questionnaire to evaluate students’ attitudes, values associated with learning, teaching, aspirations, and ethics. Tapanes et al. (2009) focused within this field on e-learning in their pursuit of establishing a link between cultural values of participants and the perceived outcome of such a course. For this purpose, they posed direct questions about culture in the online classroom and used Hofstede’s VSM as an instrument to assess the students’ cultural preferences. Also within the learning context, Tempelaar et al. (2012) investigated cultural differences in learning related dispositions amongst 7 300 first-year students from 81 different nationalities, using the framework of Hofstede as a reference. As a result, their research revealed that cultural differences in inter-correlations turned out to be substantial, which indicates “the difficulty of constructing culture invariant learning theories” (Tempelaar et al., 2012, p. 3).

Rienties and Tempelaar (2013) studied a sample of 757 international students from 52 countries to see if nine geographical clusters using Hofstede’s cultural dimension scores would relate to personal-emotional and social adjustment issues. Their findings show that “international students from Confucian Asia score substantially lower on academic integration than their Western peers, with moderate to strong effect sizes. The cultural dimensions of Hofstede significantly predicted academic adjustment and social adjustment, in particular power-distance (negative), masculinity and uncertainty avoidance” (p. 188). They suggest that extra support for especially non-western students would be called for.

Rienties et al. (2014) use a sample of 146 Dutch and 215 international students which they cluster into ten geographical clusters using Hofstede culture difference scores. They do not attempt to find the actual scores for the participants in their sample, but – as in most studies that use Hofstede – they use the values that Hofstede provides in his reports.

Tantekin et al. (2011) limited their research to architectural students and used the VSM-questionnaire to evaluate their cultural dimensions in order to test their hypothesis that an architect’s professional culture develops significantly during his/her studies. Thomas et al. (2009) approached altogether 110 management students in Cyprus and South Africa using Hofstede’s questionnaire to examine attitudes toward work-related ethics and courses of business ethics at the local universities and to verify if possible differences were rooted in the different cultures of the students’ country of origin. Mueller and Thomas (2000) sought to find out if entrepreneurial traits varied across 9 countries but used Hofstede’s original scores solely as a reference framework against which they compare their results.

In the context of natural sciences, Arrindell et al. (2003) obtained valuable results of the Fear-Survey-Schedule III by using a large sample of 5 491 students from natural, life, and social sciences as well as humanities from eleven countries to measure public anxiety phenomena. They explicitly point out the potential to compare their results against Hofstede’s country scores to “predict observed mean level differences in national fears” (p. 477).

Within the context of Information Technology, Kock et al. (2008) assessed Hofstede's model by comparing data related to information overload obtained from 108 New Zealand MBA students to Hofstede's original country scores. The authors ultimately doubt the accuracy of applying the model in an IT context. Although also confined to the discipline of human-computer interaction (HCI), the studies by Abdelnour-Nocera et al. (2012) and Oshlyansky et al. (2006) have the potential to provide broader insights into cultural thinking of students because the authors conducted their studies in five and eleven different countries respectively. Abdelnour-Nocera et al. (2012) distributed questionnaires in the UK, Denmark, Namibia, Mexico and China and thus point out their broad orientation to four different continents. Their sample remains fairly small with 20 students per country and Hofstede's VSM is applied in addition to Hayes and Allinson's CSI survey. Unfortunately, they do not provide insights in the results they obtained but rather elaborate on the purpose of their study and the methodology they applied. Oshlyansky et al. (2006) conducted their research in a HCI-context in the Czech Republic, Greece, India, Malaysia, New Zealand, Saudi Arabia, South Africa, the United Kingdom and the United States (the number of responses from the Netherlands and France turned out to be insufficient) explicitly with the intention to update Hofstede's research "with a younger, different demographic" (Oshlyansky et al., 2006, p. 11). Furthermore, the authors managed to gather a sample of all in all 1 426 students and only included countries with a valid sample of close to 100 questionnaires. The results of the study ultimately do not replicate Hofstede's original findings (except for the dimension of individualism). Moreover, their factor analysis unfortunately showed that all of the dimensions tested in the VSM had too little explanatory power and therefore failed to yield usable results.

Girlando and Eduljee (2010) chose a similar approach in a smaller context when they updated Russia's and the USA's country scores on Hofstede's dimensions by taking VSM samples from US-American students and Russian students studying in the USA and in Russia.

In this sense, further research has been conducted by researchers with the intention to replicate and in this way to complement Hofstede's original findings by calculating scores on the cultural dimensions for countries that were not included in Hofstede's IBM study. Examples are the studies by Podrug et al. (n.d.), who distributed VSM-questionnaires to 68 Croatian, 30 Bosnian, and 30 Slovenian students in order to be able to reveal possible cultural differences in cultural mindsets of citizens of the former Yugoslavian republics (see also Tipurić et al., 2007 for a similar approach). Similarly, Alkailani et al. (2012) replicated Hofstede's study using 795 Jordanian students to calculate their country's scores which was then assimilated by Hofstede with the scores obtained from other Arab countries. Huettinger (2008) replicated Hofstede's study to obtain separate scores for Latvia and Lithuania also by asking about 600 students altogether to fill out VSM-questionnaires. Kolman et al. (2003) used student samples to estimate the scores of the Czech Republic, Hungary, Poland, and Slovakia to examine if there are substantial differences in value orientations in comparison to Western European countries and among the four countries.

By far, the broadest approach in this overview was taken by van Oudenhoven (2001, p. 89) in his attempt to cross-validate Hofstede's study and to "investigate the

relationship between culture as perceived and culture as desired". By letting over 800 advanced students of economics and business administration from ten countries first assess a company of their choice which they would know very well on the five dimensions and then indicate what the ideal target state in their personal opinion should be, they could support Hofstede's categorisation but did not establish a relation between perceived and desired corporate culture.

This overview clarifies that most of the applications in a student context focus on a certain field of study (e.g. accounting or educational settings, etc.) and try to examine defined issues (e.g. perceptions of academic honesty or understanding of metaphors, etc.) within the chosen context. Many researchers use Hofstede's original findings and compare their measures obtained from different survey methods against them or focus on certain dimensions from Hofstede's model. There seem to be only a few direct replications in a student context and these replications mainly seek to evaluate scores for countries that were summarised by Hofstede under regional scores (e.g. Jordan under the scores for some Arab countries) or for countries in regions that have undergone significant political changes (e.g. the Balkan States) in recent years. Therefore, most of the direct replications were conducted in countries other than the Netherlands, Germany or China. For several reasons, replication studies that include samples of one of these three countries (e.g. Oshlyansky et al., 2006) did not yield sufficient or usable results that could be used for further comparison.

All sources mentioned are listed in Appendix A to provide an overview over the various applications and replications mentioned and the way they used Hofstede's instrument and dimensions. In some categories, further examples of studies in a Hofstede context that are not mentioned above are also provided.

In this regard, it becomes evident that our study has the potential to add further meaning, especially to the question commonly raised by critics as to whether Hofstede's dimensions can still be regarded as valid and meaningful. Moreover, the participants of this study attend various degree programmes from many different fields of study, which further contributes to obtaining more meaningful results. Further conclusions from findings from other authors and researchers will be drawn in the research methods section further below.

Issues for investigation

The aim of this study is to validate Hofstede's results on a new sample. As discussed in the literature review, several replications in a student's context have been conducted. This research is designed to add to the research done already and to support future research in the area. The outcomes of this research are expected to be valid and of interest for researchers in this area and related fields. As Hofstede et al. (2008) state in their manual for the VSM 08, "essential to the use of the VSM is that comparisons of countries should be based on matched samples of respondents: people who are similar on all criteria other than nationality that could systematically affect the answers" (p. 5). Our student sample from one university (see below) matches with such important criteria as a similar educational background (otherwise the students' application would have been rejected by the university) or a similar age range.

Hofstede et al. (2010b) also claim that the usefulness of a replication increases with the number of countries involved. They furthermore state that six major replications were done between 1990 and 2002, all of which include 14 countries or more. However, they also acknowledge the validity of smaller studies including two or three countries only. Research and replications seem to have shown that a confirmation of Hofstede's work can be found even in these samples (Hofstede et al., 2010b).

The sample of this research consists of young adults, male and female, mostly between 17 and 24 years old that are studying at the Dutch-based Stenden University. Stenden University (hereafter Stenden) is the result of a merger in the beginning of 2008 between CHN University (Christelijke Hogeschool Nederland) and Drenthe University, and currently has around 11 000² students from over 50 different countries. It operates on five different sites in the Netherlands (Assen, Emmen, Groningen, Leeuwarden, Meppel) and has also four branches abroad, in Indonesia (Bali), Qatar, South Africa and Thailand. At Stenden, students from all over the world attend classes; however the three major groups distributed among all campus sites were determined to be Dutch (around 8 000 students total), Germans (1 800 students), Chinese (250 students) and smaller numbers of South African and Qatari students.

Most students participating in this research follow courses in international hotel management or media and entertainment management. The five main nationalities, namely Dutch, German, Chinese, South African and Qatari students studying at this university, have been chosen as major areas of interest and therefore a focus was set on the investigation and the replication of Hofstede's model regarding these. Next to the interest in the verification and testing of Hofstede's results a second aim of this research is furthermore to provide recommendations to the university and support an increase in quality of teaching through an increase in cultural knowledge.

The rationale behind this research is to find out whether or not Hofstede's study from the late 1960s can be used and applied to an international student context in the 21st century. This study is therefore an attempt to validate Hofstede's originally suggested dimensions by using an adapted version of the original instrument called "Value Survey Modules" (VSM 08) on a student population.

The following problem statement and research questions state the main aims of this study:

Problem statement

Do the scores of Stenden students from the Netherlands, Germany, China, South Africa and Qatar show a pattern comparable to the scores for these countries in the original Hofstede population?

Research questions

1. Using the key from Hofstede's manual, is there a significant difference between the relative country scores in the Stenden sample and the original IBM population?
2. Is there a difference in gender for the various dimensions across the four countries?

Method

Instrument, sample and data collection

Since the main aim of the study was to replicate Hofstede's original research, we decided to use the VSM 08 questionnaire that is freely available on Hofstede's website. One question on gender was added to study the second research question.

Given the size of the university a first targeted sample size was set at an ambitious goal of 4 000 respondents to improve validity. The authors knew that it would be challenging to reach this number of respondents and agreed to accept a minimum of 2 000 respondents while trying to reach the set 4 000 people target. In the end, given time limitations, availability of students and the scope of this project the sample size ended up being 1 201 (621 Dutch, 181 German, 124 Chinese, 58 South African, 121 Qatari and 96 from various other countries). Since Hofstede et al. (2008) state that a sample size including respondents from one nation should be bigger than 20, we obviously were able to obtain an amount of data which enables us to draw significant conclusions.

The survey was distributed in a printed version to students randomly on the Dutch campus sites of Stenden University by the authors and collected directly. At the same time, the questionnaires were distributed to students directly by their lecturers and collected in a specified place at school. The questionnaire was also available as an online version on www.thesisools.com and invitations to participate were sent by e-mail and via facebook to Stenden students. The majority of questionnaires were distributed in English (VSM 08) since the language of instruction in most courses is English. However, given some streams of the university being taught in Dutch, the Dutch version of the VSM 08 was retrieved from the official Hofstede website and distributed among the respective students. Given potential language difficulties for some of the Chinese and German students, a Chinese/German version also officially available on Hofstede's website³ was placed online and distributed. This was done to assure a good understanding of the questions and ensure reliable answers.

Table 1 provides an overview of the methods used for data collection and the number of questionnaires that were returned.

All results from the paper questionnaires were transferred to evaluation forms that are computer compatible. This way, the results were read into the computer and the results were available as a digital version in Excel format. The results of the online questionnaires were directly available as an Excel file and then added to the file of the computer readable versions to have one file including all results.

All results were transferred into SPSS for the subsequent steps such as descriptive statistics, *t*-tests, and ANOVA tests.

Hofstede's original key of the VSM 08 questionnaire was used to compute the scores for the five dimensions. The scores found

Table 1: Overview of the respondents yielded by each mode of data collection

Mode of collection	Questionnaires returned
Free-range collection (Stenden study landscape)	160
Online questionnaires	105
Classes/Teacher and staff support	936
Total	1 201

in this research were then compared to the original findings from Hofstede's IBM-study using *t*-tests and ANOVA tests.

Also, comparisons between female and male respondents of the same country as well as between only female respondents of different countries and only male respondents of different countries were tested using a series of *t*-tests.

Screening the data

When the data were entered into SPSS and labeled correctly, we found that there were many cases that were not suitable for further analysis. There were a number of cases that had too many missing values (more than 20%) and they were discarded immediately. Based on the different scores in the original Hofstede research, we also decided to screen the group of South African students and to exclude students from neighboring southern African countries such as Zimbabwe and Zambia. A special case are the students from Qatar. These students have various backgrounds, from Lebanese to Pakistani and original Qatar. Following Hofstede and Alkailani et al. (2012), we decided only to accept students with an Arab background and to cluster them into one group.

Finally, after computing all the scores for the Hofstede dimensions, we decided to omit all cases with missing values.

Table 2: Gender of respondents within nationality

Nationality	Total	Male	Female
Dutch	588	218	368
German	168	48	118
Chinese	117	40	76
South African	54	17	36
Qatari	106	37	67
Total:	1 033	360	665

Note: There were missing values, therefore totals do not always match male/female counts

Table 3: Comparing scores Hofstede (H) versus Stenden research (S)

	N	PDI		IDV		MAS		UAI		LTO	
		H	S	H	S	H	S	H	S	H	S
Dutch	588	38	49	80	76	14	44	53	27	44	61
German	168	35	55	67	67	66	51	65	31	31	83
Chinese	117	80	66	20	49	66	60	30	63	118	68
South African	54	49	63	65	47	63	57	49	54	34	75
Qatari/ Arabic world	106	80	58	38	39	52	49	68	64	36	58

Table 4: Statistical comparison of Hofstede and Stenden scores

Nationality	PDI	IDV	MAS	UAI	LTO
Dutch	0.000***	0.152	0.000***	0.000***	0.000***
German	0.000***	0.926	0.000***	0.000***	0.000***
China	0.003**	0.000***	0.246	0.000***	0.000***
South African	0.034*	0.002**	0.394	0.532	0.000***
Qatari	0.000***	0.831	0.613	0.522	0.002**

Results and analysis

The resulting sample consists of 1 033 students, of which 360 are male (35%) and 665 are female (65%). Table 2 provides a male/ female division per country of interest.

Table 3 presents the scores for the five Hofstede dimensions. To put the scores into perspective, the original Hofstede scores are placed in the adjacent columns (S = Stenden; H = Hofstede):

At face value there appears to be some striking differences between the original Hofstede values and the scores for the Stenden sample. To test whether these differences are significant, a series of one-sample *t*-tests were performed on each dimension and for each nationality. For the Hofstede values a fixed norm score was taken from the original scores. The results in Table 4 show that indeed for a number of dimensions the Stenden sample scores are significantly different from those of the Hofstede population:

The analysis shows that Power Distance seems to have increased among Dutch, German and South African business students, but to have decreased for Chinese and Qatari students. Individualism has increased for Chinese students, but decreased for South African students. The Dutch Stenden students are much more competitive than the Dutch IBM engineers in 1970.

Dutch and German students show a decrease in Uncertainty Avoidance, where Chinese students show an increase in this dimension. Long-Term Orientation has decreased for Chinese students, but increased for the other four nationalities.

If anything, all scores of the Stenden sample seem to converge, where the original Hofstede sample scores differentiated more between the various nationalities.

Given the fact that it is well known and perceived that males and females are different, even if from the same country, it seems interesting that only a few researchers (see Kolman et al., 2003; and Hofstede, 2001) have compared or analysed the different scores between males and females within a selected sample. For Hofstede's original IBM research this might have been less relevant as it consisted of 92.5% males. However, since that the Stenden sample is 65% female (see Table 1) it would be interesting to look further into the matter and

Table 5: Differences in scores between males and females for all dimensions

Country	Label	N	PDI	IDV	MAS	UAI	LTO
Dutch M	1	218	52	74	48	24	53
Dutch F	1	368	47	78	42	30	65
Sig.			0.212	0.426	0.133	0.284	0.022*
German M	2	48	61	81	39	32	91
German F	2	118	51	62	55	31	80
Sig.			0.24	0.079	0.081	0.941	0.342
China M	3	40	67	53	58	72	55
China F	3	76	65	47	61	59	78
Sig.			0.874	0.566	0.829	0.275	0.083
South Africa M	4	17	66	48	61	35	75
South Africa F	4	36	62	46	55	63	75
Sig.			0.795	0.870	0.727	0.105	0.987
Qatar M	5	37	63	58	53	59	59
Qatar F	5	67	57	26	48	68	56
Sig.			0.449	0.009**	0.672	0.436	0.864
South Africa M	4	17	66	48	61	35	75
South Africa F	4	36	62	46	55	63	75
Sig.			0.795	0.870	0.727	0.105	0.987

add to the analysis respectively. To test for possible differences we performed a series of ANOVAs per nationality for each dimension. Table 5 shows that there are actually only two significant differences: between Dutch males and females for Long Term Orientation, and between Qatari males and females for Individualism. Qatari women appear to be more collectivist than Qatari men:

Discussion

Even though Hofstede et al. (2008) continually stress the difficulty to replicate his study and the near impossibility of comparing scores to the original scores, this research managed to collect data from a sample that fulfils the requirements of a homogenous group of people (international students within a certain age bracket). This allows for a comparison between the original scores and the scores found at Stenden University and some conclusions respectively. Generally speaking it can be acknowledged that Hofstede et al. (2008) are not keen on replications done by enthusiastic amateurs (the term is Hofstede's, on p. 5), given the fact that this will lead to confusion and potential false accusations of the invalidity of the original research. This research is not supposed to discredit Hofstede's original work, but rather aims to provide a new perspective looking at it in a new context and time. The fact that many differences with Hofstede's original results were found was to be expected, based on the new surrounding of the research and previous research conducted by numerous researchers.

With a total sample of 1 033 students, with five nationalities that include more than 50 students, the study meets the criteria that Hofstede et al. (2008) list in the VSM 08 manual: "Sample sizes smaller than 20 should not be used" (p. 3), and "people who are similar on all criteria other than nationality that could systematically affect the answers" (p. 5).

Our results confirm many of Hofstede's original findings with regard to the ranking of the countries against each other, not necessarily in the absolute scores we obtained. This is in line with Hofstede et al.'s (2008) advice in the manual with regard to interpreting obtained results.

For the dimensions Power Distance and Long Term Orientation, all Stenden scores differ significantly from Hofstede's original scores, but the relative rankings remain the same for all but the South African scores. The other three dimensions present a more diverse picture. In the dimension Masculinity the Dutch still are the most "feminine" country, although they score significantly higher than 40 years ago. However, what clearly strikes the eye is the comparably close range of scores which means that the extreme differences in all categories between the countries tested have diminished in comparison to the original results.

The relatively young age (approx. 17–24) of the respondents may explain this finding as well as the similar educational background of the students, although that is recommended by Hofstede et al. (2008) in their manual. The tendency that national differences are increasingly evening out is quite evident.

Looking at the analysis done with regard to gender it seems amazing that so few differences between males and females can be observed. This might be explained by the nature of the (hospitality and tourism) studies at Stenden, but more research with possibly qualitative methods would be advised.

Limitations

We are aware of the fact that although we have chosen a context for our research that meets the requirements for conducting a replication of Hofstede's original study as well as possible (homogeneous focus group, sufficient sample size, etc.), there certainly are facts that can be named as limitations for this study. Obviously, the sample sizes of the different nations – although in total sufficient for yielding valid results – vary significantly. Another important aspect that should be borne in mind when interpreting the results is the fact that all German and Chinese students are studying abroad, whereas the Dutch and most of the South African and Qatari respondents basically attend university in their home country. It seems reasonable to assume that students who deliberately choose to study abroad (especially Chinese who study far away from their

home) are likely to have different mindsets in comparison to students who choose to stay in their home country.

Besides these more conceptual constraints, we experienced some practical challenges with regards to the instrument itself: the five-point Likert scale that was used for the questionnaires was found to be counter-intuitive. Like in the original Hofstede research, five meant that the item is of very little or no importance and one meant that the item is of utmost importance. While transferring the questionnaires to the computer-readable sheets, the researchers found a few questionnaires with a comment that indicated the respondents' misunderstanding. This way, the researchers could continue with the right answers. This issue was noticed halfway through the project and therefore measures were taken to provide additional verbal instructions when filling out the questionnaires thereafter to get reliable answers.

Furthermore, the researchers clearly stated in the introduction to the online survey that the same study was done in paper form at school and asked people to participate only once. This way, the risk of having double results from one person was minimised, but could not be fully controlled.

All results from the paper-based questionnaires were transferred manually to computer-readable sheets. The research team did this with much concentration and many breaks to make no mistakes. However, it can be assumed, that some mistakes were made during this process, which could influence the results of the research.

Language problems while completing the questionnaire could also be stated as a limitation. Especially Chinese students in their first year of study, and Dutch students following classes only in Dutch might had problems with the English language. To avoid this problem, the questionnaire was made available in Dutch, English, Chinese and German.

Last but not least, it might have been helpful to use a more systematic approach to reach the student population to be able to reach a bigger sample size.

Notes

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- ² All numbers have been provided by Ritske Tjallingii, Senior Functional Application Manager at the Information & Registration Office of Stenden University.
- ³ <http://www.geerthofstede.com/research--vsm>

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Appendix A: An overview of applications and replications of Hofstede's work**Table 6:** Overview over applications/replications of Hofstede's work

Authors	Year	Sample	Focus
Replications of Hofstede's study in business contexts			
Hoppe	1990	Elites (e.g. members of governments) from 18 countries	Application using the VSM 82
Merritt	2000	Commercial airline pilots from 19 countries	Replication using the VSM 82
Mouritzen & Svara	2002	Top municipal civil servants from 14 countries	Replication using the VSM 94
Nasierowski & Mikula	1998	Polish respondents who intend to go into business management	Exploring cultural dimensions of young Polish managers using Hofstede's instrument
Shane	1995	Employees of 6 international corporations from 28–32 countries	Replication in an employee's context
Van Nimwegen	2002	Employees of an international bank in 19 countries	Replication in a banking context
Wu	2006	Employees from US and Taiwanese universities	Replication of Hofstede's study in the USA and Taiwan
Studies using Hofstede's work as a frame or a reference			
Arrindell et al.	2003	5 491 students from 9 different countries	Use of Hofstede's dimensions as a reference when comparing results obtained from other surveys to study phobic anxieties
Bunchapattanasakda & Wong	2010	MBA students currently working in Chinese multinational companies and studying in public and private universities in Bangkok	Use of Hofstede's VSM as a basis for the development of own research questions to analyse Thai and Chinese social concepts
Crotts	2004	302 US residents travelling abroad for the first time	Testing the impact of cultural distance on overseas travel behavior (Using Hofstede as a guideline in comparing results)
Kang & Mastin	2007	Sample frames of English-language tourism websites	Use of Hofstede's work as a frame to identify valid explanatory factors that account for differences in tourism websites
Mueller & Thomas	2001	1 800 students in nine countries	Use of Hofstede's framework as a references to compare tested hypotheses psychological on traits associated with entrepreneurial potential against it
Rienties & Tempelaar	2013	757 international students from 52 countries	A study that compares the relationship between geographical background with personal-emotional and social adjustment issues
Rienties et al.	2014	334 students from ten different countries	The study examines the distinctly different academic and social integration processes amongst international students. The students are divided into nine geographical clusters in line with Hofstede's cultural difference research
Tempelaar et al.	2012	7 300 first-year students from 81 nationalities	Investigate cultural differences in learning related dispositions using the framework of Hofstede as a reference
Thomas et al.	2008	Cypriot and South African management students	Use of Hofstede's framework as a reference in order to understand attitudes towards workrelated ethics and the teaching of business ethics in management programmes at universities
Vadi & Meri	2005	Application with Estonian hotel staff members	Measurement of the Estonian culture using Hofstede's framework as a guideline
Studies testing/referring to single dimensions of Hofstede's work			
Gerritsen	2012	84 Dutch and German bachelor's students	Use of Hofstede's instrument to evaluate the dimension of uncertainty avoidance
Payan et al.	2010	Marketing and business college students from 13 countries	Use of Hofstede's instrument to measure the dimension of ind/col to ultimately test their perceptions of questionable behavior concerning academic honesty
Schimmack et al.	2005		Focus on the individualism/collectivism dimension and analysing its validity for cross-cultural research (Hofstede's approach is compared against others)

Appendix A: Continued

Authors	Year	Sample	Focus
Studies using Hofstede's dimensions to only evaluate cultural values as a basis for further research			
Abdelnour-Nocera et al.	2012	20 undergraduate students in each of 6 different countries	VSM only one part of the study (to evaluate students' cultural values) Research in a HCI context
Ho & Lin	2008	Exploring a relationship between cultural values and cognitive moral development	VSM only one part of the study (to evaluate students' cultural values)
Littlemore	2003	Bangladeshi students at a British university	VSM only one part of the study (to evaluate students' cultural values)
Sulkowski & Deakin	2009		Use of Hofstede's dimensions to evaluate students' attitudes values associated with learning, teaching, aspirations, and ethics
Tantekin et al.	2009	Second and third-year architectural students	Use of the VSM to evaluate their cultural dimensions in order to test their hypothesis that an architect's professional culture develops significantly during his/her studies
Tapanes et al.	2009	Instructors and students in online learning courses	VSM part of the survey in the attempt to establish a link between cultural values of participants and the perceived outcome of such a course
Studies testing the validity of Hofstede's framework in different contexts			
Bearden et al.	2006	292 graduate students	Test of the validity of the VSM on an individual level
Blodgett et al.	2008	157 graduates and faculty members	
Cronjé	2011	12 S&T students from Sudan and 5 professors from South Africa	To what extent is Hofstede's research also a suitable basis for qualitative research? (Hofstede's cultural dimensions are used as categories of interpretation)
Harvey	1997	Comparison of the designs of geographic information systems (GIS) in a German and a US county	Does Hofstede's framework apply to the actual practice of information system design?
Kock et al.	2008	108 US and New Zealand MBA students	Test the validity of Hofstede's dimensions as a basis to explain IM phenomena
Replications of Hofstede's study in a country-specific context			
Alkailani et al.	2012	795 graduate students from universities in Jordan	Replication of Hofstede's original research in Jordan
At-Twajiri et al.	1996	Multinational companies	Application of Hofstede's dimensions in the GCC countries and comparison of the recent results to the original ones
Fernandez et al.	1997	7 201 employed business professionals and adv. business students	Reexamination of Hofstede's country classifications in 9 countries
Girlando & Eduljee	2010	Russian students studying in Russia and in the USA and US students studying in the USA	Replication of Hofstede's work using the VSM 94
Huettinger	2008	Over 800 responses from students in Latvia, Lithuania, and Sweden (to calibrate the other scores	Evaluation of scores in 2 new countries using the VSM 94
Kolman et al.	2002	Respondents from Poland, Czech Republic, Hungary, Slovakia and the Netherlands	Evaluation of scores in 4 new countries using the VSM 94
Naumov & Puffer	2000	250 Russian respondents	Application of Hofstede's survey to find out whether cultural values of Russians have changed
Oshlyansky et al.	2001	1 428 students from 9 countries	Replications in a student's context
Podrug et al.	n.d.	128 students from Croatia, Bosnia-Herzegovina, and Slovenia	Evaluation of scores in 3 new countries using the VSM 94
Tipurić et al.	2007	Doctoral and postgraduate students in the field of economics in Finland, Bosnia-Herzegovina, Croatia, Hungary, and Slovenia	Evaluation of scores in 5 countries using the VSM 94
Wu	2006	Employees from US and Taiwanese universities	Replication of Hofstede's study in the USA and Taiwan