

## **ABSTRACT**

RUOHAN, SUN. Study-Abroad Experiences' Influence on Chinese Students' Culture Dimensions. (Under the direction of Dr. Tim Hatcher).

China is increasingly involved in globalization. Historically, cultural differences between China and the US began with politically oriented communication. More recently, it serves to facilitate business communication. Although the cultural differences between China and the western world have been studied for decades, there is little research on how cross cultural experiences impact the worldview of Chinese students studying abroad. The present research uses a quantitative approach to analyze how the study abroad experience influences behavior, habits, values, and the worldview of Chinese students. The research sought to identify the significance of different variables in changing Hofstede's five dimensions of culture measurements of students who returned to China after receiving education in a western culture. Geert Hofstede's (2005) five cultural dimensions theory has been used to study the differences between cultures. In the present study culture is measured according to five cultural dimensions: (1) individualism-collectivism, (2) power distance, (3) masculinity-femininity, (4) uncertainty avoidance, and (5) time orientation. (Hofstede, 1984, 1991). These cultural dimensions reflect the many aspects of an individual's cultural identification such as behavioral habits, values, and one's worldview. In this exploratory research, Hofstede's theory is utilized to study and measure the cultural difference of Chinese students before and after the study abroad. The purpose of this study is to test the cultural change of individuals from the East (China) who experienced higher education in the West (US, Canada, Britain, Australian, and New Zealand).

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Exploratory Research on Study Abroad Experience Influence on Returned Overseas Chinese  
Students' Culture Dimension

by  
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**DEDICATION**

I dedicate this thesis to my grandparents Mr. Yuzhi Guan and Ms. Rongchun Qu, Who  
dedicated their lives selflessly to the entire family.

## **BIOGRAPHY**

Ruohan Sun was born in Yinchuan of Ningxia in the year of 1984. She completed her Bachelor degree in Art at Beifang University of Nationalities in 2006 and came to US to fulfill her curiosity in different cultures and started her graduate study. She graduated from Shaw University with a Master of Science degree in curriculum and instruction and got her North Carolina teaching license. In 2010, she joined the program of human resource development at North Carolina State University to pursue her dream in this field. With the guidance and encouragements from her advisor Dr. Tim Hatcher, she started her new journey to learn about culture and the field of Human Resource Development.

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## **CHAPTER 1:INTRODUCTION**

China has become more and more involved in globalization (Wang, 2011). The significant potential of profit to be made in Chinese markets has attracted large investments from most countries in the western world (Mceie, 2011). This recent collaboration of Asian and western cultures has resulted in a need to better understand how cultures interact, communicate and how they can be rigorously compared based not on opinion but rather on empirical research. For many years cross-cultural research and understanding was limited primarily to anthropology and to a lesser extent sociology. There was a dearth of multi-disciplinary research that cut across related disciplines such as psychology, sociology and human development. In addition, the impact that learning may have on acculturation and culture transformation has been studied only on a limited basis.

This chapter offers a discussion of how culture is defined, a summary of cross-cultural research, and a description and discussion of Hofstede's major works on culture. It also includes the research problem and purpose, the research questions, assumptions and limitations.

Different countries and different regions have different cultures, so there is a need to understand the impact of cultures on international communications. To facilitate business and political communication, cultural differences between China and the west have been studied for many decades (Wu, 2010). Culture, consisting essentially of people's collective deep-held values and beliefs, is a critical factor in shaping peoples conceptions of the world around them. There have been many studies aimed at understanding national cultures and identifying

the influences of people's different values and beliefs on their life and work. Research has explored various areas of difference between Chinese and Western cultures based on three dominant models, namely those of Hofstede (1991), Trompenaars (1993), and Schwartz (1994). To provide a useful and valid measure of cultural differences Geert Hofstede developed an instrument based on factors or dimensions that differentiate cultures. Hofstede's five cultural dimensions have been used in numerous studies to compare the differences between cultures (Hofstede, 1991,; Sondergaard, 1994; Steenkamp, 2001). The five dimensions are assigned indexes applicable to all cultures. Cultures are linked with demographic, geographic, economic, and political aspects of a society (Kale & Barnes, 1992), a feature unmatched by other cultural frameworks. The five dimensions are: (1) individualism-collectivism, (2) power distance, (3) masculinity-femininity, (4) uncertainty avoidance, and (5) time orientation. (Hofstede, 1984, 1991). Each dimension is described below. Hofstede's research is one of the most comprehensive and robust in terms of the total number of cultures sampled (Smith 1996 ). Four dimensions were initially detected through a comparison of the values of matched samples (employees and managers similar in all respects except nationality) working in 53 national subsidiaries of the IBM Corporation. A fifth dimension of time orientation was added based on a study of students in 23 countries using a questionnaire prepared by the Chinese Value Survey in Hong Kong (1987). The study suggested that China is somewhat different from the UK and the USA on dimensions of masculinity-femininity and uncertainty avoidance, and more distinctly different on

dimensions of power distance, individualism-collectivism and time orientation.(Chen & Partington, 2004)

Hofstede's work was one of the first that could be quantified, and could be used to explain observed differences between cultures. His work established a major research tradition in cross-cultural psychology and has also been used by researchers and consultants in many fields relating to international business and communication. It continues to be a major resource in the study of culture and cross-culture examination. It has inspired a number of other major cross-cultural studies of values, as well as research on other aspects of culture, such as social beliefs.

Research on students who have studied abroad has increased our understanding of how students experience multiculturalism, meaning that they are better able to relate to and communicate with people from different cultural backgrounds. As a result of living, working, and learning in a different culture, students may begin to question their culturally based ways of thinking, and allows them to see their own culture from a different perspective. This new perspective may provide them an increase in awareness of cultural sensitivity.

Institutes of higher education are realizing the importance of global competence. It is generally understood that study abroad professionals believe that in order to become fluent in a language and truly understand another culture, students must study for a longer period of time (Dwyer & Peters, 2004). It is important that students learn that there is life outside of their native country. Study abroad experiences provide international opportunities to many

students who would otherwise be unable to have exposure to different cultures and see other parts of the world (Arenson, 2003). Study abroad programs are playing a significant role in the internationalization of higher education and a new set of standards from the Forum of Higher Education that can be utilized when planning and executing study abroad programs (Fischer, 2009). These standards could be used along with the general study abroad standards that the Forum of Higher Education has recommended. Previous studies have indicated that there are a multitude of benefits that accrue to students that participate in study abroad programs: the opportunity to interact with locals and increased international knowledge, cultural knowledge, and student engagement (Arenson, 2003). The following quote highlights the importance of holistic student development. It expresses the idea that regardless of the time spent abroad, participating in a study abroad program has the potential to change participant's cultural point of view: "The experience abroad, regardless of the level at which it takes place, engages the student holistically, the entire process involving both physical and psychological transitions that impact the cognitive, affective, and behavioral domains" (Cushner, 2003, p. 23). The implication is that students are fully engaged when they participate in any kind of study abroad program. One study found that students who had participated in any type of study abroad experience were more globally engaged compared to those with no study abroad experience. (Fischer, 2009)

In 1978, the late Chinese leader Deng Xiaoping promoted the sending of 860 students and scholars to study abroad. Since then there has been a rapid increase in the numbers of Chinese students studying abroad. In 2007, there were over 700,000 Chinese students and

scholars studying in 108 countries and regions all over the world (Ministry of Education, 2007). Of these, approximately 2500 students chose to study in Hong Kong. For the vast majority of locations such as Hong Kong, mainland China is the chief source of international higher education students studying abroad (Yao, 2004). A survey conducted in 2001 by China's National Bureau of Statistics suggested that more than 60 per cent of Chinese families invested one-third of their income in their children's education (Mazzarol & Soutar, 2002). For a family on the Mainland China, spending on their child's education is second only to food expenses. This is driven by the belief of Chinese parents that a good education will guarantee a better future (Ashley and Jiang, 2000). A Chinese citizen with a degree from another country such as the US is perceived by their parents and society to have better skills and employability prospects on returning home (Gareth, 2005). Therefore, despite fluctuations in the numbers of mainland Chinese students reportedly seeking overseas study, parents continue to sacrifice family income, and seek overseas study for their child. Such commitment underlies Mainland China being one of the main sources of international students for many countries (Fan, 2007). With extraordinary economic development in China over the past decade the option to study abroad has become more affordable for an increasing numbers of Chinese families. For example, the number of students choosing to study overseas is reported to have increased by a factor of 11 over the past five years (*China Daily*, 2007).

To improve understanding of culture and to add value to the related literature the present study examined the extent that graduate student's cultural identity as Chinese

changed as a result of their experiences and learning in a Western culture. A few factors that have been shown to be significant in impacting a change in one's cultural paradigm include language, and different values and beliefs about their life and work. The present study chose variables of age, gender, educational major, and length of time studying abroad. These variables are supported by the related literature.

### **Problem Statement**

While there is a multitude of studies on cultural differences using various measures and a variety of participants representing different cultures, there is a growing need to better understand the extent that experiencing and learning in a foreign culture impacts one's culture of origin. Because of the tremendous growth in the number of Chinese students studying abroad in Western universities and colleges and then returning home, understanding the extent that such experiences may change their views of their culture is especially important to understand.

Based on a review of related literature no research was discovered that measured the extent that studying in Western universities impacted Chinese student's cultural identity after returning to China to live and work.

### **Background of the Problem**

Ever since its foundation in 1949, the government of the People's Republic of China has been struggling to communicate with the western world at all societal levels including, the economy, science, technology, sports, education, business and politics (Boltho, Dadush & Otsubo, 1996). Cultural differences have become one of the major barriers between China



and the western world (Ralston, Holt, Terpstra & Kai-Cheng, 2007). With the growing economic and political importance of China in the global economic and societal system, both east and west push the culture barrier in different ways (Bureš, 2003). More and more companies from South America, Europe and Australia are making significant investment in Chinese markets (Huang, 2003). Each year China is sending millions of students abroad to study and obtain advanced knowledge in various fields of study in Western culture (Mceie, 2011). Such efforts from both sides result in the same problem of how to transfer knowledge from the western world back to China after students return (Wang & Tong, 2004). Wang et al. (2004) view this problem from the standpoint of the Chinese government by considering the impact of native Chinese students returning home with a western educational background. Student's education received in a different culture influences their native cultural background and possibly influences their work within Chinese organizations (Wang et al., 2004).

The present research examined how an educational experience in a western culture changed culture measurements of Chinese students. Hofstede's theory was applied to quantitatively measure culture within different dimensions. Although Hofstede's theories originally applied only to a cumulative measure of the differences between countries, with country being the unit of measure, the present study measured differences between individuals.

### **Theoretical Framework: Hofstede's Cultural Dimensions**

The development of *Culture's Consequences*, (Hofstede, 1980) was based on an IBM study, and provides a proven method for identifying national cultural dimensions. The book and Hofstede's exploration culture has greatly influenced research within psychology, social sciences, and organizational studies (Smith, 2002). Hofstede's "dimensions of culture represent a well-validated operationalization of differences between cultures as manifested in dominant value systems" (Hofstede & McCrae, 2004). Hofstede (2001) initially discovered four dimensions in which national cultures differed: (a) individualism-collectivism, (b) power distance, (c) masculinity-femininity, and (d) uncertainty avoidance; later, a fifth dimension called time orientation (long-term and short-term) was added.

The study of dimensions of national culture is related to anthropology, and the study of individual personality fits the discipline of psychology well (Hofstede, Hofstede, Minkov, & Vinken, 2008). Hofstede et al. (2008) used the analogy of comparing 'forests'—national culture—and 'trees'—individual personality—as a means to differentiate, and establish the need for another level of analysis, which is the interaction between national culture and characteristics of the individual. As a result, stereotyping individuals by national societies has become a common misunderstanding about Hofstede's national-culture dimensions (Hofstede, McCrae, 2000). Hofstede's cultural dimensions were developed at a national level, where differences between entire societies should be compared (Hofstede et al.). The individual level encompasses thinking, feeling, and acting, reflected in the study of trait psychology (McCrae, 2000).

Stereotyping occurs when national culture dimensions are used to describe individuals' personalities (Hofstede et al., 2008). Hofstede as well as other researchers have strongly argued against using the Values Survey Module instruments, both the 1994 and 2008 versions, at the individual level (Bearden, Money, & Nevins, 2006) as these instruments "should only be used by researchers who subscribe to the concept of a society differing from other societies" (Hofstede p.4). The 1994 Values Survey Module (VSM 94) consists of 26 questions. It was designed to compare culturally determined values of people from two or more countries (Hofstede's, 1994). Hofstede developed this instrument from a survey of 88,000 employees in more than 40 overseas subsidiaries of IBM (Kogut & Singh, 1988). The 20 content questions measure five dimensions of national or regional culture, based upon four questions/items per dimension. The other six questions/items are demographic and capture the respondent's gender, age, education level, kind of job, present nationality, and nationality at birth. To measure these additional demographic factors, the 6 - items have been added to the end of VSM 94. In this version, the researcher is interested in assessing who to survey and how to breakdown overall survey response data into meaningful groups of respondents. Both assessments are based on demographic considerations, so these 6 demographic questions are necessary. There is overwhelming support for the use of the original VSM and the VSM 94, both developed by Hofstede and his colleagues (Bearden et al., 2006). There has also been a substantial increase in the number of doctoral dissertations incorporating Hofstede's measures and theory (Sivakumar & Nakata, 2001).

Using Hofstede's measures, researchers have found meaningful relationships between national culture and important demographic, geographic, economic, and political indicators of a society (Kale and Barnes 1992). His research has been widely accepted and applied at both country and individual levels in cross-cultural studies and the survey are validated using individuals as the unit of measurement. (Yoo, Donthu & Lenartowicz, 2011) Examples of using these measures at the individual level include exploring consumer perception on antismoking web sites (Paek, Yu, and Bae, 2009), ethical norms (Paul, Roy, and Mukhopadhyay, 2006), market segmentation (Kale, 1995), negotiation behavior (Volkema, 2004), personality and transformational leadership (Shao and Webber, 2006), consumer moral ideologies (Swaidan, Rawwas, and Vitell, 2008), package design (Limon, Kahle, and Orth, 2009), and consumer ethnocentrism (Cleveland, Laroche, and Papadopoulos, 2009), to name a few.

Hofstede's work has also been used as a conceptual foundation for many cross-cultural studies. The five-factor model for personality traits has been validated through "systematic research of the past 40 years" (Digman, 1990). His work has created renewed interest among psychologists in the relationship between personality and culture (Lee, McCauley, & Draguns, 1999). According to data analysis using Hofstede's measures, "mean personality scores from 33 countries were significantly and substantially correlated with culture dimension scores" (Hofstede & McCrae, 2004). Even though a myriad of studies have been published using Hofstede's measures and theories a review of the related located no published studies that measured cultural change using Hofstede's VSM cultural

dimensions measurement of students from China who studied at western universities and then returned to China to live and work.

Hofstede's work provides a conceptual framework on how measured cultural change. The empirical model used in this study are used to test the variables, that is, the independent variables of age, gender, educational major, and length of time studying abroad and the dependent variables of the five cultural dimensions. The empirical model illustrates the inter-relational aspects of culture (Hofstede & McCrae, 2004). The five independent variables based upon the four-key factors of a person's demographic factors and the five dependent variables are based upon Hofstede's work-related values of national culture: (a) individualism–collectivism, (b) power distance, (c) masculinity–femininity, (d) uncertainty avoidance, and (e) long-term/short-term time orientation (Hofstede, 1980, 2001). Statistic tests included the use of a multivariate analysis of variance (ANOVA), and measured the individual and pairwise affect the five-factor on the culture change. Table 1, is an illustration of the conceptual framework showing how the variables in this study were related to the outcomes five cultural dimensions.

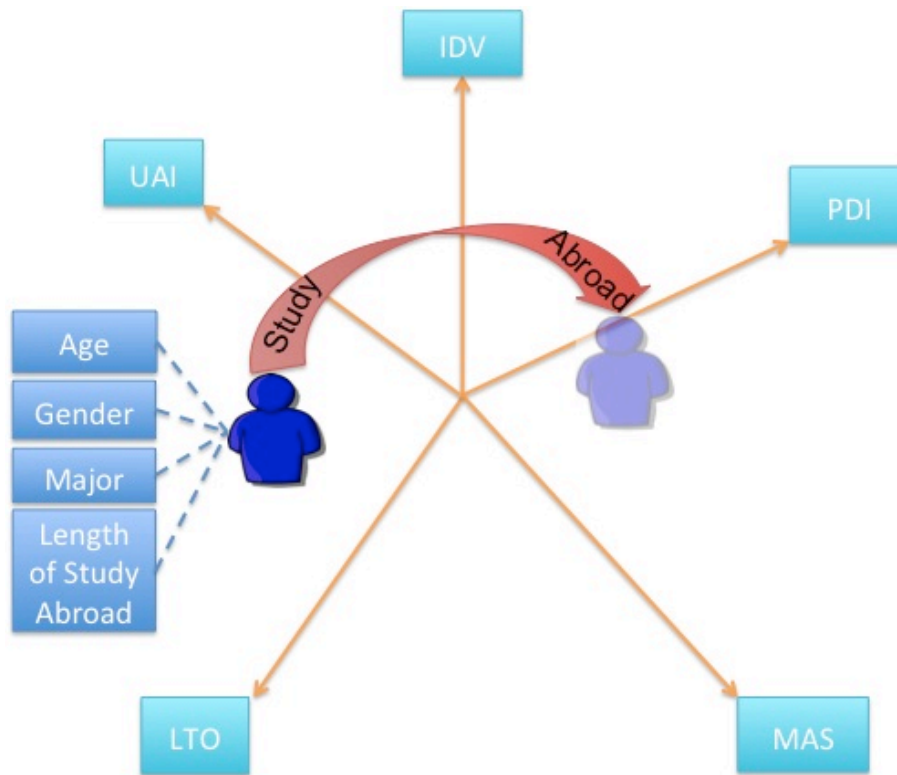


Figure 1. An illustration of the conceptual framework.  
(IDV is Individualism Dimensions, PDI is Power Distance Index Dimensions, MAS is Masculinity-femininity Dimensions, UAI is Uncertainty Avoidance Dimensions, and LTO is Long-term Orientation Dimensions.)

### Purpose of the Study

The purpose of this study was to measure the change in cultural dimensions of individuals from the East (China) who experienced higher education in the West (US, Canada, Britain, Australian, and New Zealand) and returned to China to live and work. Culture was measured according to the five dimensions defined by Geert Hofstede (1980) that reflected the many aspects of an individual's culture identification such as behavior habits, values, and worldview. Hofstede's model was applied to study the change of the Chinese student's values and behaviors before and after their educational experiences abroad.

Hofstede's VSM quantitatively measured the five dimensions of culture, including Power Distance (PDI), Individualism versus Collectivism (IDV), Masculinity versus Femininity (MAS), Uncertainty Avoidance (UAI), Long-Term Orientation (LTO). The VSM survey used in the present study was used as a measure of culture change for Chinese students based on the instrument's five dimensions as referenced above.

### **Research Questions and Hypotheses**

This study examined how Chinese students' study abroad experiences influenced the student's native culture scores along Hofstede's five value dimensions both before and after the study abroad experience. In addition, the study identified and examined the influence of different demographic factors of age, gender, educational major, and length of study abroad on participants' culture change. The study addressed the following research questions:

(1) Do Chinese students' culture dimensions' score change after studying abroad? The following hypotheses were used to test this question:

H1. Individualism–collectivism: There was no significant difference in participant's individualism- collectivism scores prior to and after their experiences abroad.

H2. Power distance: There was no significant difference in participant's power distance scores prior to and after their experiences abroad.

H3. Masculinity–femininity: There was no significant difference in participant's masculinity–femininity scores prior to and after their experiences abroad.

H4. Uncertainty avoidance: There was no significant difference in participant's uncertainty avoidance scores prior to and after their experiences abroad.

H5. Time orientation: There was no significant difference in participant's time orientation scores prior to and after their experiences abroad.

(2) Is there a relationship between participant's cultural change and the demographic variables of age, gender, major and length of study abroad? To answer this question the following hypothesis was used:

H6. There was no relationship between participant's cultural change and the demographic variables of age, gender, major and length of study abroad.

### **Assumptions and Limitations**

It was assumed that the data obtained through the study's survey could capture the change of culture using Hofstede's different dimensions for individuals who studied in a country different from their own.

There were several limitations associated with this study. First, this study used a sample of convenience. Using a non-random sample is another limitation of this study that limits the ability of the study's results to be generalized to a larger population. . The third limitation is recall bias, which is a direct measure of change. In this study participants were asked to recall a prior state (cultural identity prior to the study abroad experience) and compare it with their present state in order to develop a basis for a transition rating. With



measures of change, participants have to recall a specified cultural point of view prior to their study abroad experiences and give it an explicit rating. These memories of past states may be biased. That being said, there are empirical studies that have found substantial associations between prior recall of states and measures taken after a previous state (Meyer, Richter, & Raspe, 2013) by asking participants to recall their experiences versus administering a pre-post test. Their memory may not be a reliable source of information. Inspired by the result of this research on how the study abroad experience changed the cultural dimensions of an individual, further research may be carried out to explore how culture will inversely act on a student's study abroad experience.

The 36% response rate of the survey data is considered low for social science research. However, this response rate might be due to the fact that today there are many more countries offering educational opportunities to Chinese students. Many students choose to study in Asian or European countries other than the five-targeted countries of the present research (United States of America, United Kingdom, Canada, Australia and New Zealand), which were not a part the present research. Many students who studied in those five countries stayed for less than 1 month, a qualification to be included in this research. In addition, there is a large portion of Chinese student who choose not to return to China after they finish a study abroad. So their completed surveys cannot be used in this research.

**Organization of the Study**

Chapter 2 of the proposed study is a literature review that describes the proposed theories, as well as support from the literature for the study's research questions'. Both previous and current theories, models and research are discussed. The theoretical framework is detailed, beginning with the research questions and objectives. Chapter 3 focuses on the methods used to analyze the research questions. The research design strategy is explained in Chapter 3, including sampling design, data collection and data analysis procedures. The limitations of the methods used are also discussed. Chapter 4 presents the study's findings. Chapter 5 provides conclusions, implications for research and practice, and recommendations for further research.

## **CHAPTER 2: LITERATURE REVIEW**

This chapter provides a review of related literature on culture analyses from previously published studies. The review begins with various definitions of culture used in research. It is followed by a brief introduction to different developments and refinements of the definitions of culture over time. Different theories of culture are reviewed with a focus on Hofstede's refined work on culture as the theoretical foundation and measurement used in the study. Then, to illustrate the necessities and value of studying culture, the studies on the influence of culture in people's behavior in various environments is briefly reviewed. After the discussion on the definition and value of culture, previous measurements of culture are reviewed, which provides support for the cultural measures used in the present study to analyze the change of culture measurements of Chinese students before and after their study in the west. Given this study concerns the change of culture measurement in a across-culture education experience, the last section of this chapter discusses studies on the culture different between China and other Western cultures (US, Canada, Britain, Australian, and New Zealand) are reviewed to later provide insight into the comparative study of the participant survey of this study.

### **Defining Culture**

In the previous studies culture have been defined in many different ways. Drake (Drake, 1994) defines culture as a combination of assumption and beliefs that are prevailing in the population under the same historical background. In some other works (Samovar, Porter, & Jain, 1981, p25) the culture is defined as the culmination of some key

elements of human civilization such as knowledge, concepts of the universe and religions. As pointed out by Pressey (Pressey, 2003) , it is very challenging to impose a rigid definition of culture given the fact that it is always changing over time. However in the anthropological community since 1951 there is a widely accepted definition of culture (Hofstede 2001) :

“Culture consists in patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional ideas and especially their attached values”. Hofstede later refine this definition (Hofstede 2005) to characterize culture in two-fold: Culture is the training and enhancement of individual minds and also the consolidation of the populations’ minds.

The aforementioned definition of culture by Hofstede’s was widely adopted by researchers and consistently used throughout this study. In the previous literature demonstrate two main trend of studying the dimensions of culture. The first one is based on the theory of classification systems (F. Kluckhohn & Strodtbeck, 1961). The other one summarize the dimensions of culture by empirical studies (Hofstede, 2001). In these studies based on the hofstede’s culture definition, the values of a society play a critical role in characterizing the culture. Regarding this point, Carter also emphasized in his paper (Carter, 1991) as follows: “What a group considers important and desirable guides the behavior of its individuals, forms the basis for group norms, and dictates life-styles that are deemed appropriate for group members”. Like Hofstede, Trompenaars (1993) believed there is no one prescriptive way to achieve excellence. Proven formulas do not always work. He

described culture as the ‘way in which people solve problems’ and showed that cultures have different ways of solving common problems. Trompenaars used a dimensional model similar to that of Hofstede. The model was further developed in *The Seven Cultures of Capitalism* (date). Finally, Trompenaars proposed a model for corporate cultures and suggested which countries reflected which model. In each of the four quadrants, differences were observed in relationships between ways of thinking and learning, attitudes to people, ways of changing, ways of motivating and rewarding, criticism and conflict resolution. Trompenaars suggested that, strategically, managing across different cultures gives you more ways to achieve your goal. He further suggested that the only system that will genuinely allow this is that of strategic control, as described by Goold and Campbell. Trompenaars (1993) presented a seven-dimensional model of national culture differences, which he argues is particularly relevant to the conduct of international study. Data read from his book were treated using correlation and factor analysis at the country level. Results indicated that only two dimensions can be clearly confirmed statistically: Individualism/Achievement and Universalism/Diffuse. Both are correlated with Hofstede's Individualism dimension. The re-analysis raised concerns about Trompenaars' conclusions and about his methodology. Trompenaars defined “culture” as a series of rules and methods that a society has evolved to deal with the recurring problems it faces. They became so basic, almost like breathing that people no longer think about how they approach or resolve them.

### **Cross-cultural Studies**

Culture has huge impact on how people work together which from time to time impose a great challenges to business managers. Such challenges can be even more severe in case of multi-national culture. In this case people of different culture background have so much different perceptions in their work due to difference of their own career related values. For example given a task require collective work of a group of people, the culture that posses the value of collectivism will positively contribute to the task. However, the culture that of the value of heroism will layout obstacles in forming the collective efforts in this task. Usually the culture studies are executed at the national level (Ogden, Ogden, & Hope, 2004).

Hofstede also affirmed that it is very important for analyses to differentiate national culture and subculture groups. Such differentiation will also set a solid foundation for the study of the interaction between individuals as well as the subculture groups or the national cultures.

The value of multidimensional approaching in cross-cultural research was also demonstrated by Bearden (2006) by illustration of value differences in different culture across national boundaries. Thus, these points substantiate the need for further research using multidimensional approaches, to understand the impact of value differences in terms of culture, and the interrelation aspects of individual personality traits. Hence, a focus on business professionals within the United States and Chinese cultures provides a multidimensional approach for this type of analysis and is demonstrated throughout this paper.

### **Cultural Differences Between China and Western Cultures**

To compare the cultural differences and similarities of China and Western culture and understand these different evolutions helped individuals adjust their strategies when studying culture and cultural differences. For example, the international communications between China and US has been developing rapidly. The study abroad between the two countries has become more and more frequent, thus it has turned to be increasingly necessary to analyze these differences (Shi & Wang, 2011). These differences had imbued each area with a specific set of values and attitudes for relating to foreign cultures.

Today's world continues to change into a political, economical, and environmentally interconnected web through global transportation, communication, commerce, and migration (Olson & Kroeger, 2001). With the trend toward globalization, it has become commonplace for people to move from one country and culture to another (Lustig & Koester, 1996). The need to develop competence in managing intercultural differences is growing. Hence, institutions seek various ways to develop students' skills needed for competing in the global market whether through study abroad program or extracurricular activities (Deardorff, 2008).

According to Xiao and Petraki (2007), many studies of Chinese students' intercultural communication focused on comparing the cultural difference between Chinese students and students from a host country; other studies explored the difficulties and problems that Chinese students encountered in intercultural communication.

For example Liu (2002) conducted a case study to investigate Chinese students'

silence in American classrooms. Three focal Chinese students enrolled in a large Midwestern university were selected as the participants. The results indicated that none of these participants were in the total Integration pattern with one student in conditional participation, another student in Marginal Interaction, and the last student in silent observation. Liu stated that there were differences in construing silence between Chinese and American cultures. In Chinese culture, students' silence is expected and encouraged as a sign of respect for their teachers and classmates (p. 47). However, in American culture, silence in the classroom can be considered as absence or a lack of communication (p. 47). Liu maintained that the silent behavior of Chinese students in the classroom could lead to cross-cultural misunderstanding. Hence, he suggested that Chinese students should moderate their silence in American classrooms to improve their intercultural communicative competence.

Sun and Chen (1999) performed a study to explore the difficulties that Mainland Chinese students came across in adjusting to American culture. The researcher selected ten Mainland Chinese students enrolled in a mid-size public university for the study. The study consisted of 8 females and 2 males. The length of time they stayed in America ranged from 10 months to 3 years. On average their age was 27.9. The researchers conducted structured in-depth interviews with the participants. In addition, an open-ended questionnaire was employed to collect information about participants and their adjustment process. The findings revealed that most of the Chinese students perceived language ability, cultural awareness, and academic achievement as three major dimensions of difficulties.

Due to the vast cultural differences between the geographical areas as well as rapid



increases in globalization, it is important to understand cross-cultural variations between the two geographic areas (China and US) (Jung-Tsung Tu, 2010).

### **Culture Measurement**

Different countries and different regions have different cultures, so there is a need to understand the impact of cultures on international communications as well as on the influences of one culture on another. The similarities and often-competing values of the regions also highlight the role of ethnic and cultural influences in the development of Higher Education. Culture-focused research is becoming more widespread now and understanding culture will be viewed as increasingly important (Mooij and Hofstede, 2010). The concept of national culture has been a core topic of international research for many years, based in large part on the seminal model developed by Geert Hofstede. Hofstede's (1980, 1984) cross-cultural value analysis and study was the first global study that considered differences in organizational culture based on geographical location and societal beliefs and values.

Hofstede's typology on culture is one of the most used in cross-cultural studies and the most frequently cited research effort regarding the relationship between culture and values (Sivakumar & Nakata, 2001). Abdou and Kliche (2004) stated researchers choose Hofstede's framework as the basis of study for several reasons: First, no other study in the field of culture is of an equal or greater size; second, the cultural values are linked to a numerical index, which makes comparing countries more ostensible, and third, Hofstede stressed values that can be found in the workplace and his study is thus well suited for discussing culture in a business context. (Hofstede ,2001, p. 10) The literature showed strong

evidence in support of Hofstede's conclusions that cultural values provide general guidance to behaviors on the society level, which can be quantitatively measured, and the need to distinguish on the individual level due to personality traits. (Shi & Wang, 2011). Blindly looking at national culture and using that to target individual consumers may not work. While culture is defined at the national level (e.g., collectivism), whether an individual shows such a cultural orientation consistent with the national culture needs to be measured (e.g., Does this person show a collectivistic orientation?). This concern is more true when a country consists of a heterogeneous population with different cultural backgrounds. The concept of national culture has been very useful for the study of nations and societies. However, in managerial situations, the reflection of culture at the individual level is more important and relevant (Kamakura & Mazzon, 1991). Accordingly, a strong need has been raised to measure culture at the individual level.

Beside Hofstede's theory another culture measurement, which has been used widely is Trompenaars' culture model (1993). Trompenaars' study involved 30 companies in 50 different countries. Seven dimensions of culture were identified. Five come under the broad heading of relationships with people, which includes universalism vs. particularism, individualism vs. communitarianism, neutral vs. emotional, specific vs. diffuse, and achievement vs. ascription. The sixth dimension concerns attitudes to time and the seventh attitudes to the environment. Trompenaars' seven dimensions have been described as conceptually related to some of Hofstede's dimensions and as such can be interpreted as supportive of Hofstede's model [Gatley 1996]. For example, Trompenaars' dimension

attitudes to time is related to Hofstede's dimensions of individualism–collectivism and uncertainty avoidance in that individualist cultures with a sequential view of time such as the UK and the USA usually have short-term orientation, whereas collectivist cultures such as China, with a synchronous view of time, typically have uncertainty avoidance (long-term orientation).

Another culture model is Schwartz's model (1994). By Drawing on findings from his individual-level study of the content and structure of values Schwartz (1994) proposed a continuum of cultural values representing the relationship between personality and cultural factors. His model was based partly upon Hofstede's (Hofstede, 1980)] and Kluckhohn and Strodtbeck's (1961) work and was tested using data collected between 1988 and 1992 from respondents in 38 nations. The two basic dimensions in Schwartz's model are conservatism vs. autonomy (affective and intellectual) and self-enhancement (hierarchy and mastery) vs. self-transcendence (egalitarian commitment and harmony). Because it arranges value types and broad dimensions into a continuum, Schwartz's model is regarded as a refinement of Hofstede's work. According to the model, the two broad cultural archetypes of societies with different assumptions about life and work can be categorized as contractual cultures and relationship cultures. The former, like the USA (UK data were not included), adopt autonomous values along with value tensions between mastery (in terms of self-enhancement) and egalitarian commitment/harmony (in terms of self-transcendence). The latter, like China, mainly adopt conservative values and accommodate value tensions between hierarchy and harmony.

Although these dimensional studies carry the danger of stereotyping entire cultures, they have nevertheless informed and enabled national cross-cultural comparisons that are relevant to the workplace (Osland, 2000). The results in the above three models presented a list of contrasting dimensions that demonstrated the fundamental differences between Chinese and Western cultures.

### **The Work of Geert Hofstede**

The culture study framework developed by Hofstede (1980, 2001, 2005) has been widely applied in different fields such as psychology, social sciences, and organizational studies (Smith, 2002). In the framework, national culture are differentiated according to five major dimensions: a) individualism–collectivism, (b) power distance, (c) masculinity–femininity, (d) uncertainty avoidance and (e) time orientation (long term of short term). This methodology is proven to be very effective in culture study. One of Hofstede’s early work (1980) carried out a culture study on 116,000 IBM employee in over 40 countries and the result successfully identify the differences in thinking and action of individuals from different culture background. Researchers choose Hofstede’s framework as the basis of study for several reasons.

The first dimension individualism–collectivism characterize people’s intention to work and live as a group or otherwise as an isolated individual. For example, Hofstede stated, “Individualism stands for a society in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family only”. In detail, Collectivism emphasized the interdependence among people in a society. People are

integrated into strong, cohesive in-groups. Collectivism can be further divided into horizontal (or egalitarian) collectivism and vertical (or hierarchical) collectivism. Horizontal collectivism stresses collective decision-making among equal individuals, and is thus usually based on decentralization and egalitarianism. Vertical collectivism is based on hierarchical structures of power and on moral and cultural conformity, and is therefore based on centralization and hierarchy. In the scenario of work, the individualism–collectivism dimension reveals the preferences in what one considers an ideal job. Hofstede’s research demonstrated that the following preferences align with the individualism–collectivism dimension. See Table 1 for an illustration of this alignment:

Table 1. The individualist-collectivism dimension

Individualist	Collectivist
Personal time—have a job that leaves sufficient time for your personal or family life;	Training—have training opportunities to improve your skills or learn new skills;
Freedom—have considerable freedom to adopt your own approach to the job;	Physical conditions—have good physical working conditions (good ventilation and lighting, adequate workspace, etc.);
Challenge—have challenging work to do—work from which you can get a personal sense of accomplishment	Use of skills—fully use your skills and abilities on the job (P76)

Table 1 continue

Adapted from Hofstede, G., & Hofstede, G. J. (2005). *Cultures and organizations: Software of the mind*.

Power distance was defined by Hofstede and Hofstede (2005) as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede & Hofstede, 2005, p.420). The power distance dimension reveals work-related values in terms of how employees and managers alike perceive themselves in the workplace setting. For example, In case of small power distance, employees are not afraid of the authority of their boss and prefer a consultative style of decision-making. On the other hand, in this case, the boss is less autocratic or paternalistic. In case of large power distance, the boss is usually more autocratic and paternalistic. The employees are usually divided into two extremes. One is that the employees accept the autocratic decision making and afraid of challenging the authority. The other one is that the employees are fighting against the unequally distributed power and strongly demand the majority vote in making the decisions. (Hofstede, 2005)

Masculinity is the opposite of femininity and “stands for a society in which emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life” (Hofstede & Hofstede, 2005 ); whereas femininity “stands for a society in which emotional gender roles overlap; both men and women are supposed to be modest, tender, and concerned with the quality of life” (Hofstede & Hofstede, 2005, p401). The

masculinity–femininity dimension reveals values in terms of the expected roles men and women should assume. Hofstede and Hofstede’s research showed the following job preferences to align with the masculinity–femininity dimension. See Table 2 for an illustration of this alignment:

**Table 2. The masculinity-femininity dimension**

For the masculine pole:	For the opposite, feminine pole:
Earnings—have an opportunity for high earnings	Manager—have a good working relationship with your direct superior
Recognition—get the recognition you deserve when you do a good job	Cooperation—work with people who cooperate well with one another
Advancement—have an opportunity for advancement to higher-level jobs	Living area—live in an area desirable to you and your family
Challenge—have challenging work to do—work from which you can get a personal sense of accomplishment.	Employment security— have the security that you will be able to work for your company as long as you want.

Adapted from Hofstede, G., & Hofstede, G. J. (2005). *Cultures and organizations: Software of the mind*.

Uncertainty avoidance was defined by Hofstede and Hofstede (2005) as “the extent to which members of a culture feel threatened by ambiguous or unknown situations” (Hofstede & Hofstede, 2005, p.430). Hofstede differentiated uncertainty avoidance and risk avoidance

by an object's "percent of probability that a particular event may happen, and that uncertainty has no probability attached to it" (Hofstede & Hofstede, 2005, p.172) because it is ambiguous. Ambiguity can cause anxiety and fear. As such, "uncertainty avoiding cultures shun ambiguous situations and people in such cultures look for a structure in their organization" (Hofstede & Hofstede, 2005, p.172). The uncertainty avoidance dimension reveals work-related values in terms of preferences for organizational structure and rules, which reduce ambiguity. For example, an individual who has a high level of uncertainty avoidance would tend to value the following statement: "Company rules should not be broken, even when the employee thinks it is in the company's best interest" (Hofstede & Hofstede, 2005, p.166).

Long-term orientation is the opposite of short-term orientation and describes the extent to which members of a culture are cognitively programmed to accept delayed gratification of material, social, and emotional needs (Hofstede & Hofstede, 2005). Hofstede (date) provided the following description: Long-term orientation stands for the fostering of virtues oriented toward future rewards, in particular perseverance and thrift. Short-term orientation stands for the fostering of virtues related to the past and present—in particular, respect for tradition, preservation of face, and fulfilling social obligations. (Hofstede & Hofstede, 2005, p. 401-403). Hofstede attributed short-term orientation to bottom-line performance results: "The results of the past month, quarter, or year—is a major concern; control systems are focusing on it and managers are constantly judged by it. This state of affairs is supported by arguments assumed to be rational, but this rationality rests on cultural (pre-rational) choices. Managers



are rewarded or victimized by today's bottom line even where it is clearly the outcome of decisions made by their predecessors or pre-predecessors years ago, yet the force of cultural belief system perpetuates the system. (Hofstede & Hofstede, 2005, p.219) Long-term orientation can also be attributed to entrepreneurship in terms of persistence, perseverance, or tenacity, and thrift in terms of "savings and the availability of capital for reinvestment by oneself" (Hofstede & Hofstede, 2005, p.218). Another study by Hofstede involved "the goals that part-time MBA students in 15 countries ascribed to their country's business leaders," and found a significant correlation with long-term orientation to "profits 10 years from now and the unimportance of this year's profits" (Hofstede & Hofstede, 2005, p.220).

Hofstede's "dimensions of culture represent a well-validated operationalization of differences between cultures as manifested in dominant value systems" (Hofstede & McCrae, 2004). The discussion will now differentiate the roles of national culture and individual personality beginning with Hofstede et al.'s (2008) analogy of forests— national culture—and trees—individual personality—to establish another level of analysis, which is the interaction between the two. There is a common misunderstanding about Hofstede's national-culture dimensions, resulting in stereotyping individuals by national societies (Hofstede, McCrae, 2000). Hofstede's cultural dimensions apply only at the national level where differences between national societies should be compared (Hofstede, 2008). However, the individual level encompasses thinking, feeling, and acting, which is reflected in the study of trait psychology. Stereotyping occurs when national-culture dimensions are used to describe individual personality (Hofstede et al., 2008). Hofstede as well as other researchers have

strongly argued against using the VSM instruments (both 1998 and 2004 versions) at the individual level (Bearden et al., 2006), as these instruments “should only be used by researchers who subscribe to the concept of a society differing from other societies” (Hofstede, 2008). Hofstede (2008) stated, “individual-level correlations produce dimensions of personality; country-level correlations produce dimensions of national culture” (p.3). One of the strengths of Hofstede’s position is that “he resolutely defends the need to do culture-level comparisons at the culture level, and has criticized others who have taken his dimensions as the basis for interpreting behavior of individuals within particular cultures” (Smith, 2002, p121). However, Smith pointed out that an ongoing dilemma for cross-cultural researchers is rooted in western psychology, which squarely focuses on interpreting individual behavior—thus, the temptation to relate individual behaviors to cultural contexts can be irresistible.

In one of Hofstede’s (1980) findings, empirical evidence indicated that organizations are culture-bound, and four dimensions describe the differences in every society. Hofstede later added a fifth dimension (Hofstede, 1991, 2001). Hofstede’s conceptual framework allows both qualitative analysis and quantitative measurement, which provided an opportunity to link a large number of studies. Hofstede concluded that the country-variation scores along these five dimensions indicated differences among different nationalities. As such, Hofstede posited there is not one possible answer to solving these problems, but rather a range of possible answers, even for modern industrial nations. Some sociological connotations of power distance are social stratification and inequality; of uncertainty

avoidance, the need for structure and formalization; of individualism, the relationship among individuals, institutions, and society; of masculinity, social sex role differentiation.

Hofstede's work has been used as a conceptual foundation for many cross-cultural studies.

### **Summary**

In summary, in this chapter the previous studies that defined and measured culture were briefly reviewed. Among culture research the work of Geert Hofstede was used to define and measure culture. The studies on cultural difference between China and Western countries were also reviewed to provide insight into the comparative research that supports the present study.

## CHAPTER 3: METHODS

This chapter discusses the research design, methods sampling plan, instrumentation, data collection, and data analysis. A brief discussion of research ethics applicable to the present study is also included.

### Research Design and Measures

The present research used an *ex post facto* survey design. It is a category of research design in which the investigation starts after the fact (the intervention or participant's action) has occurred without interference from the researcher. It was an appropriate design for this research for the following reasons. First, this research required that all participants had a recent study abroad experience. This means that when they took the survey they had already completed their overseas study. Secondly, this research sought to identify a change in culture after the fact. Thus, this research design could be considered a substitution or proxy for an experimental design to test hypotheses about a cause-and-effect relationship and compare differences before and after the study abroad experience. It is important to point out that the chosen design, *ex post facto* does not include any form of manipulation or measurement before the fact. This approximated earlier studies of Hofstede and other culture-oriented researchers.

### Measurement

Measures used in the present study were based on Hofstede's recommended use of the VSM 94 instrument for cross-cultural survey studies (Hofstede, 1994). The VSM 94 contains reformulated questions used in the initial survey, and measures multidimensionality

of individual-culture values. This version of the VSM was chosen because of its ability to use the individual as the unit of study. The results were analyzed ecologically (Kruger , Roodt & Hofstede, 2003) according to the VSM94 Manual developed by Hofstede (1994).

Hofstede allows free use of the proprietary VSM 94, making it easily accessible and affordable to researchers. This study utilized Hofstede's VSM 94 survey instrument, which also included a fifth dimension, long-term versus short-term orientation. The VSM 94 6-item addition was designed to question the extent participants were qualified to provide valid samples according to the purpose and design of the research. The 6-items also support the later statistical inference with meaningful information to further separate the samples according to gender, country of origin and amount of time studying abroad. This information helped the researcher to examine how these factors affected the change in culture scores of participants. For example, if the participants had no experience in studying abroad, then the survey used in the present research would not be valid to use. Once the survey data was collected, it was divided into groups based on demographic information gathered from the survey. Cross tabulations compared survey data across multiple demographics.

### **Sample**

The non-random convenience sample consisted of 263 Chinese graduate students who had a study abroad experience in five different English-speaking countries—The United States of America, England, Canada, Australia and New Zealand. It is important to have comparable samples in cross-cultural research studies and to distinguish the variables (Gudykunst & Mody, 2002; Hofstede, 1980). For example some researchers pointed out that

most cross-cultural studies use samples of convenience, rather than random samples; because random samples generally are not feasible in cross-cultural research because steps need to be taken to ensure that samples are as equivalent as possible (Gudykunst & Mody, 2002). The sample used in the present study were students who lived and studied in one of the 5 western countries for at least 1 month and then returned to China where they became a fulltime worker in a Chinese business for a maximum of five years.

The convenience sample was obtained by first querying the researcher's colleagues and asking them to query their colleagues and then their references and friends and other Chinese students who had a recent study abroad experience. After IRB approvals, initial contact with participants was done by email with a link to the survey instrument using Qualtrics (a NCSU supplied and approved survey tool). The sample needed to have at least 80 participants in order to maintain statistical power and to obtain statistically reliable scores using the VSM 94 instrumentation, per Hofstede's (1994) recommendations. This sampling strategy was based on Hofstede's (2002) rationale for using samples of university students who were business professionals (i.e., work during the day and attend evening classes at a local university) in order to get a more realistic perspective (Hofstede et al., 2002). And although the present study did not measure the extent that work culture impacted the participant's culture change Hofstede et al. (2002) suggested that survey participants as workers were "cultural insiders, sharing the national cultures of the business leaders they reported to" (Hofstede & Hofstede, 2002, p. 788). This is important since the participants in the present study returned to China as full time employees in Chinese owned and managed

businesses.

### **Instrumentation**

The present research used Hofstede's Values Survey Module 1994 (VSM-94 survey, in Appendix B); a 26-item questionnaire for comparing culturally determined values of people from two or more countries or regions (Hofstede, 1994, p. 2). The survey also contained the following participant demographic information, which was gleaned from previous research and suggested by Hofstede: gender, age, education background, nationality, and type of working experience. These demographic items were added at the end of the VSM-94 survey. The purpose of the final 32-item survey used in the present study was to assess participants' attitudes in order to find out the difference in culture dimensions scores before and after the study abroad experience. Note that the first 26 questions were used in the present research. The rest of the survey questions are more of qualitative description to the study abroad experience, which will be used in a future study using mixed methods.

The questionnaire contained five items under each dimension. All responses used an electronic survey that was posted online for two weeks; all the participants who took the survey remained anonymous since the survey did not ask for their names. Hofstede's VSM-94 survey (see Appendix B) was used to design the survey items. The survey was developed and previously validated both in Chinese Mandarin and English by Hofstede (1994). Both language versions were used in the present study to ensure participant's understanding and to establish content validity.

Hofstede offered the VSM 94 at no charge for research purposes. The survey and instructions for scoring were obtained at: [feWeb.uvt.nl/ center/hofstede/~1st-VSM.html](http://feWeb.uvt.nl/center/hofstede/~1st-VSM.html). All culture scores were computed according to Hofstede's VSM94 survey manual,(Hofstede,1994). There are five equations in the manual to calculate culture scores in each culture dimension from answers to survey questions. The VSM 94 instrument has been extensively tested to show both acceptable validity and reliability (Shane, Xhao, & Hu, 2003).

Reliability is about the degree to which the measurement can be used over time and is free from random errors. Validity determines the instrument's ability to measure the items. (Cooper & Schindler, 2006). Shane (as cited in Niedziolek, 2005) stated, "The VSM 94 instrument has been extensively tested and has been shown to have both validity and reliability" (Niedziolek, 2005, p. 54). In addition, according to Shane (as cited in Niedziolek): The validity of Hofstede's indices outside the IBM data set can also be seen from correlations between his indices and those of other researchers (Shane, 1993). LV Gordon's (1976) surveys of personal and interpersonal values; Haire, et al., (1966) studies of capacity leadership, sharing information and participation; Bass and Franke's (1972) study on openness versus secrecy; Morris' (1956) study on the way to live; Reader's Digest (1970) study on attitudes toward older and younger people; Taylor and Hudson's (1972) press freedom study; Cutright's (1968) and Taylor and Hudson's (1972) sectoral inequality study; Converse's (1972) time use pattern; Cutright's (1968) occupational inheritance; McClelland's (1961) need for achievement and need for affiliation studies of children's



readers; and Kogut and Singh's (1988) study of foreign investment entry mode, all correlate significantly with at least one of Hofstede's dimensions. (p. 57)

There are numerous research replications using the VSM 94 instrument (Hofstede, 2001). For example, "According to Sondergaard (1994), there have been 61 replications recorded which either attempt to find support for the cultural differences in other populations, or to validate the dimensions by interpreting the differences according to the same cultural dimensions" (Niedziolek, 2005, p. 55). The analysis of "the replications showed differences predicted by Hofstede's dimensions were largely confirmed with full confirmations of all dimensions in the predicted direction found in four applications" (Hoppe; Punnett & Withaney; Shackleton & Ali; all as cited in Sondergaard, 1994, p. 451).

The validity of Hofstede's indices beyond the original IBM data set can also be seen from correlations between his indices and those of other researchers (Shane, 1993): LV Gordon's (1976) surveys of personal and interpersonal values; Haire et al.'s (1966) studies of capacity leadership, sharing information and participation; Bass and Franke's (1972) study on openness versus secrecy; Morris' (1956) study on the way to live; Reader's Digest (1970) study on attitudes toward older and younger people; Taylor and Hudson's (1972) press freedom study; Cutright's (1968) and Taylor and Hudson's (1972) studies on sectorial inequality; Converse's (1972) time-use pattern; Cutright's (1968) occupational inheritance; McClelland's (1961) need for achievement and need for affiliation studies of children's readers; and Kogut and Singh's (1988) study of foreign investment entry mode. All of the aforementioned studies correlate significantly with at least one of Hofstede's dimensions

(Shane, 1993, p. 57). Supporting research of Donnellan et al. (2006) involved five studies, which confirmed reliability and validity, along with internal consistencies of all five studies using the international personality item pool and mini-international personality item pool scales. In addition, the research of Hofstede and McCrae (2004) confirmed correlations using stepwise regression analysis between both the five-factor personality domains, and cultural values, via the VSM 94.

### **Data Collection**

This study used samples of Chinese students who had a study abroad experience in the west and then returned to China and worked for a maximum of five years. The five-year maximum allowed for re-acculturation into the Chinese culture. A survey measuring people's cultural dimensions prior to and after their experiences abroad was designed and provided to potential participants online. The researcher developed both a consent form and survey using Qualtrics, which is an approved survey tool. Then the link to the online survey was sent through emails to all potential participants by the researcher. All data from participants were anonymous in the process of this survey. The survey link was also posted on social networks: Renren, Xindao Weibo, Facebook and QQ. By receiving the email containing the link, all receivers participated in the survey through the link and were encouraged to pass the link to their classmates, colleagues and friends, who shared a similar background. By clicking the link in email, or clicking the link on social network directly, potential participants were transferred to the survey webpage, which contained the consent form and survey. On this webpage, the potential participants decided to participate in the

study or not. A willingness to participate was indicated by clicking "I agree", and then the participant was transferred to the first page of the survey, which means they began to formally answer the questions. If "I don't agree" was selected, the webpage was closed. When the participants started the survey online, the survey results were automatically saved in the Qualtrics database for further data analysis.

The instrument that was used in this survey is the VSM-94 survey and pre-section, which measured participants' five cultural dimensions. The instrument created by Geert Hofstede was valid and reliable. The 26-item questionnaire was developed to compare culturally determined values of people from two or more countries. Six demographic questions were added at the beginning of the survey, called the pre-section, to get more demographic information. In addition, one open-ended question was added at the end of the survey to get more information about participants' education experience.

If participants agreed to participate in this study, they were asked to complete the on-line survey, which included 32 questions, but two set of answers the, first set answer is base on their todays feeling and second one is base on their memory recall. They are encouraged to compare the differences before and after the study abroad experience and reflect it in this post-test survey, all the participants were asked to recall based on memory about their previous feelings and understanding about each culture dimension before studying abroad and after they studied abroad. The survey took approximately 30 minutes and was completed online. The information in the study records was kept confidential and was approved by the NCSU Institutional Review Board (IRB) prior to data collection. Data was stored securely in

a password protected hard drive and in locked cabinets within the researchers' office. No reference was made in oral or written reports, which could link individual participants to the study.

### **Data Analysis**

The purpose of data analysis was to answer the following two research questions:

1. Is there a difference in culture scores of participants after having an education experience abroad?
2. Do demographical factors such as gender, age, major and duration of education abroad affect the change of culture scores?

### **Hypothesis Setting**

Correspondingly, the statistical treatment of the data included two parts. The first was analysis of variance within and between the two different groups of data: prior to and after their experiences abroad. The hypotheses were:

H1. Individualism–collectivism: There was no significant difference in participant's individualism- collectivism scores prior to and after their experiences abroad.

H2. Power distance: There was no significant difference in participant's power distance scores prior to and after their experiences abroad.

H3. Masculinity–femininity: There was no significant difference in participant's masculinity–femininity scores prior to and after their experiences abroad.

H4. Uncertainty avoidance: There was no significant difference in participant's uncertainty avoidance scores prior to and after their experiences abroad.

H5. Time orientation: There was no significant difference in participant's time orientation scores prior to and after their experiences abroad.

The second method used was analysis of quantitative influence of demographic factors on the difference of two groups of data. The statistic hypothesis was:

H6. There was no relationship between culture change and four demographic variables of age, gender, major and length of study abroad.

In the present study, in order to distinguish the affects caused by a single factor and interaction between factors, hypothesis H6 was tested using two NULL sub-hypotheses.

*H6a: Variance of  $i$ th factor was not significantly large*

*H6b: Interaction between  $i$ th factor and  $j$ th factor was not significantly large*

### Hypotheses Testing

The following section provides a detailed description of the methods of statistical analysis of data used in the present study. First, the formulas used in the analysis are introduced. Second is a description of the analysis of variance between prior to and post education abroad experiences. Affects of demographic factors are explained at the end of this section.

The formulations used in the present study are as follows and as illustrated in Table 3 and 4. Let  $X_{\text{prior}}^i$  be the vector of culture scores before the education abroad. Similarly, let  $X_{\text{after}}^i$  be the vector of culture scores after having the education abroad. The upper index  $i$  represented the  $i$ th people taking the survey. In Hofstede's VSM94 survey manual, (Hofstede, 1994) there are five formulas for computing culture scores within each culture dimension from answers to the survey questions.  $X_{\text{prior}}^i$  and  $X_{\text{after}}^i$  was computed from the raw survey question results according to Hofstede's VSM94 survey manual (Hofstede, 1994). Each element of  $X_{\text{prior}}^i$  and  $X_{\text{after}}^i$  corresponded to one of the five culture dimensions defined by Hofstede: A) power distance, B) uncertainty avoidance, C) individualism, D) masculinity and E) long-term orientation.

**Table 3. Formulation of data**

$X_{\text{prior}}^i = (\text{Score1}, \text{score2}, \dots, \text{score5})$	$X_{\text{after}}^i = (\text{score1}, \text{score2}, \dots, \text{score5})$
Vector of observations of the $i$ th person for the prior items.	Vector of observations of the $i$ th person for the after items.

The formulation of demographic factors is shown as follows in Table 4

**Table 4. Formulation of factors**

Factors	Major (a1)	Duration (a2)	Gender (a3)	Age (a4)
Number of Levels	2	Positive Integer	2	8

There are four demographic factors in Hofstede's VSM94 survey: gender, duration, major and age which are represented in order, a1, a2, a3, a4. Numerically, the factor Major was quantified into two categories: science major and art major. The factor Duration of study was quantified as a positive integer. The factor Gender was a binary factor. The factor Age was quantified into 8 intervals: under 20, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 49, 50 to 59 and above 60.

In the first part of the analysis, One Way Analysis of Variance (ANOVA) was applied for research question 1. The descriptive statistic of the difference between two groups is conceptually defined as follows.

$$F = \frac{\text{Between Group Variance}}{\text{Within Group Variance}} = \frac{\text{Var}(X_{\text{prior}} - X_{\text{after}})}{\text{Var}(X_{\text{prior}}) + \text{Var}(X_{\text{after}})} \quad (1)$$

The F-test was used to test the hypothesis that F is significantly large which indicated that the samples of prior groups were significantly different from the post test. The likelihood of null hypothesis being true was given the probability distribution of F-test,

$$p(F) \quad (2)$$

The second part of the analysis, to address research question 2 applied a four way ANOVA to explore the affects of each demographic factor to the change of culture scores.

The formulation of four-way ANOVA in this scenario was:

$$\begin{aligned} ||X_{\text{prior}} - X_{\text{after}}|| = & c_0 + c_1 * a_1 + c_2 * a_2 + c_3 * a_3 + c_4 * a_4 + \\ & c_5 * a_1 * a_2 + c_6 * a_1 * a_3 + c_7 * a_1 * a_4 + \\ & c_8 * a_2 * a_3 + c_9 * a_2 * a_4 + c_{10} * a_3 * a_4 \end{aligned} \quad (3)$$

The left part of the Equation (3) represented the change of culture scores, and the right side of the Equation (3) consisted of three types of affects of demographic factors: the constant affect 0 , the affect from a single factor such as  $c_1 * a_1$  and the affect from a pair of factors such as  $c_5 * a_1 * a_2$ . The coefficient  $c_0 \sim c_{10}$  was estimated by modeling fit in ANOVA. Referring to the hypothesis setting in the beginning of chapter 3, the testing of null hypothesis was as follows,

*H6a: Variance of  $i$ th factor is not significantly large*

*H6a is true if coefficient  $c$  is not significantly large*

*H6b: Interaction between  $i$ th factor and  $j$ th factor is not significantly large*

*H6b is true if the corresponding coefficient  $c$  is not significantly large*

## **Ethics**

For ethical considerations, the survey was reviewed and approved by the NCSU IRB committee. Participants were asked to sign an Informed Consent Form (Appendix A) prior to participation in the present study. All participants' names were excluded from the survey. All participants were asked to take part in the research study. All participation in this study was voluntary. Participants had the right to be a part of this study, or choose not to participate or to stop participating at any time without penalty. The purpose of this research



study was to gain a better understanding of a certain topic or issue. The issue was explained to the participants through the survey participants were not guaranteed any personal benefits from being in the study.

## CHAPTER 4: RESULTS

In this chapter the results of the data analysis are discussed. As stated in Chapter 3, there were two parts to the analyses: a one-way ANOVA to test if there was a change in culture scores prior to and after the education abroad experience, the other was a four-way ANOVA to test affects of demographic factors or factor pairs was significantly large. In the following discussion of results, survey data are introduced. Then, the results are discussed.

There were 673 completed surveys, out of which 243 survey data was compliant with the research questions, which indicated that the survey participants should have more than 1 month of study abroad experience in the following five countries, namely United State of American, United Kingdom, Canada, Australia and New Zealand and then returned to China afterwards. The final response rate was 36%. The 36% response rate of the survey data might due to the fact that nowadays there are much more countries offering education opportunities to Chinese students. Many students choose to study in Asian countries or few European countries other than the five targeted countries of the present research (United States of America, United Kingdom, Canada, Australia and New Zealand). Many students who studied in those five countries stayed for less than 1 month, a qualification to be included in the present research. In addition, there is a large percent of Chinese students who choose not to return to China after they finish a study abroad. So they were not included in the present research. To make sure the results of analyses address the research questions correctly, all of the analyses in this research were based on 243 acceptable survey data.

In terms of major has 2 categories (science and art), and 61% of the survey participants majored in science and 39% majored in art. In terms of gender has 2 categories (male and female), and 44.9% of the survey participants were male and 55.1% were female. In terms of age has 8 categories (under 20, 20-24, 25-29, 30-34, 35-39, 40-49, 50-59 and over 60) and total of 1.9% of participants were under 20, 21.67% were between 20 and 24, 50.57% were between 25 and 29, 17.11% were between 30 and 34, 4.18% were between 35 and 39, 2.66% were between 40 and 49, 1.14% were between 50 and 59, and 0.76% were over 60. The length of study abroad varied from 1 month to 192 months. The majority (94%) of the survey participants studied abroad for less than 67 months.

A null hypothesis was tested for each culture dimension including: A) power distance, B) uncertainty avoidance, C) individualism, D) masculinity and E) long-term orientation. Results included:

H1. Individualism–collectivism: There was no significant difference in participant's individualism- collectivism scores prior to and after their experiences abroad.

H2. Power distance: There was no significant difference in participant's power distance scores prior to and after their experiences abroad.

H3. Masculinity–femininity: There was no significant difference in participant's masculinity–femininity scores prior to and after their experiences abroad.

H4. Uncertainty avoidance: There was no significant difference in participant's uncertainty avoidance scores prior to and after their experiences abroad.

H5. Time orientation: There was no significant difference in participant's time orientation scores prior to and after their experiences abroad.

Results of the above hypotheses are illustrated in Table 5. The first column in Table 5 represents the five different culture dimensions as recommended in as recommended in Hofstede's VSM94 survey manual. The second column contains the F-value, The bigger the F-test value, the more likely there was a significant difference in the corresponding culture dimension after participant's study abroad. The third column contains The P-Value of each F-Test, which indicates the probability that the null hypothesis were true. The fourth and fifth columns of Table 5 are the culture scores of each dimension prior to and post to the study abroad experience. Suggested by Nuzzo, R. (2014), the threshold of p-value in Table 5, was set to be 0.01 in this research to define the criterion of rejecting a null hypothesis. In other words, when the p-value of a null hypothesis test was under 0.01, the null hypothesis was rejected. The same p-value threshold was also used to judge the significance of the affect of demographic factors on the culture change. The type I error of the hypothesis test used in the present study could happen when the null hypothesis is true but rejected by the test. Usually, p-value for the single F test is set to be 0.05 to reduce the probability of type I error to 5%. However, order of ANOVA of this research is 4, which involves F test for 4 factors. Thus this research has been set the p-value to be 0.03 to further reduce the type I error. The probability of type I error can be estimated as  $1 - (1 - 0.01)^4 = 0.04$ , which is smaller than the common standard of 0.05. A thorough study of the error of hypothesis test should jointly consider both of type I and II error. Type II error is failure to reject the false null hypothesis.

Usually by reducing one type of error the other will increase (Peck & Devore, 2011). The fourth and fifth column of Table 5 is the mean of culture scores prior and post to study abroad experience, which is computed according to Hofstede's VSM94 survey manual. The meaning of the culture score, according to Hofstede's VSM94 survey manual, can be interpreted in as follows. For example for power distance, the smaller score value indicate small Power Distance while the larger value indicate the larger Power Distance. The range of culture score varies from positive number to negative number. The sixth and seventh column is the measure of variance within and between two groups: group of samples prior to study abroad and group of samples post to study abroad.

**Table 5. One-Way ANOVA results of each culture dimension**

Culture	F-test	P value	Prior	Post	MS	MS within
Dimensions		(Threshold = 0.01)	Culture (Mean)	Culture (Mean)	between Group	group
Power	452.2	$8.2 \times 10^{-73}$	457.76	507.47	325010.7	718.7
Distance						
Uncertainty	255.6	$3.8 \times 10^{-47}$	-61.39	0.68	506664.7	1982.3
Avoidance						
Individualism	528.3	$2.3 \times 10^{-81}$	-2430.76	-2532.24	1354289.	2563.4

Table 5 Continued

Masculinity	334.4	$3.9 \times 10^{(-58)}$	-1671.05	-1705.30	154334.8	461.6
Long term	202.1	$5.0 \times 10^{(-39)}$	519.85	541.97	64396.2	318.6

Orientation

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As shown, in each culture dimension, the hypothesis test provided a p-value was much smaller than 0.01 (the p-value threshold), which indicated null hypotheses H1, H2, H3, H4, and H5 were false. All five dimensions of Power distance, Individualism, Masculinity and Long-term Orientation's culture scores changed significantly after study abroad.

Hypotheses for each culture dimension were carried out with the following results.

H6. There was no relationship between culture change and the four variables of age, gender, major and length of study abroad.

In order to distinguish the affects caused by a single factor and measure the interaction between two factors, the following was completed and hypothesis H6 was tested in terms of two null sub-hypotheses:

*H6a: Variance of  $i$ th factor is not significantly large*

*H6b: Interaction between  $i$ th factor and  $j$ th factor is not significantly large*

In Tables 6, 7, 8, 9 and 10, the results of the four-way ANOVA for each culture dimension is documented. The p-value threshold for these tables are set to be 0.03. These

tables should be interpreted as follows. The first column contains the factors and different combination of their pairs. The definition of each factor is provided in Chapter 3. The second column is the F-test value. The third column contains P-Values, which is an indication of how likely the null hypothesis was to be accepted. The larger the p-value, the more likely that the null hypothesis is true.

As shown in Table 6, the most significant single factor and pair of factors for the Power Distance dimension of culture is Age (a4) with a negative coefficient ( $c_4 = -4.68$ ), which means the Age and Power Distance scores have a negative correlation. It can be interpreted that as younger aged students studied abroad, power distance changed more. For Major, Gender and Length of Study Abroad the P –Value is about 0.5, much bigger than 0.03 p-value threshold thus these three factors are considered accordingly have no significant affects on Power Distance. The pair of factors Age and Length of Study Abroad ( $a_2 * a_4$ ) has a positive coefficient ( $c_9 = 0.825$ ), which means the pair of factors Age and Length of Study Abroad are positively correlated with the Power Distance dimension. In other words, when jointly considering the affect for Age and Length of Study, the native affect from Age is dominated by the positive affect from the Length of Study. Thus the overall affect of the pair of the factors is positive, which means the longer of the study abroad and higher the age the more the power distance score will change. For the remainder of factors, the p-value is larger than 0.03, which means that the null hypothesis is true. Thus for those pairs of factors the affect on the power distance score is not significant. The trade off in using the higher order factor analysis (four way ANOVA) is the increase of type I error. However understanding the

correlation between factors is meaningful in the present study. The results of the hypothesis testing on pairs of factors in the present study should be interpreted with caution.

**Table 6. Four-Way ANOVA of Power Distance**

Factors/factor Pairs	F-test Value	P-Value
		(Threshold = 0.03)
a1 (Major)	220.94	0.6161
a2 (Length of Study)	326.77	0.5421
a3 (Gender)	430	0.4842
a4 (Age)	2336.33	0.1038
a1*a2 ( Major and Length of study)	103.98	0.7308
a1*a3 (Major and Gender)	10.71	0.9121
a1*a4 (Major and Age)	167.2	0.6627
a2*a3 (Length of Study and Gender)	22.74	0.8723
a2*a4 (Length of study and Age)	1648.63	0.1715
a3*a4 (Gender and Age)	140.68	0.6891

From Table 7, the most significant individual factor and pair of factors for the Uncertainty Avoidance dimension of culture is Major (a1). The science majors reported a reduced uncertainty avoidance score ( $c_2 = -14$  when  $a_1 = 1$ ) while the art majors showed an increased uncertainty avoidance score ( $c_2 = 14$  when  $a_1 = 2$ ). The rest of the factors are



considered to not having significant affects on the uncertainty avoidance score due to the P-Value is larger than 0.03. For affects from the pair of factors, the most significant is the pair of Major and Age (a1\*a4). When the major is science, the younger the age is and the more the uncertainty avoidance score is reduced. When the major is art, the younger the age and the uncertainty avoidance score is increased. For the rest of the pairs of factors, the P-Value is larger than 0.03, which indicate no significant affect on the uncertainty avoidance score.

**Table 7. Four-Way ANOVA of Uncertainty Avoidance**

Factors/factor Pairs	F-test Value	P-Value
		(Threshold = 0.03)
a1 (Major)	6201.6	0.0856
a2 (Length of Study)	1497.2	0.3973
a3 (Gender)	621.1	0.5882
a4 (Age)	113.8	0.8154
a1*a2 ( Major and Length of study)	2567.2	0.2679
a1*a3 (Major and Gender)	1275.2	0.4347
a1*a4 (Major and Age)	11343.7	0.0204
a2*a3 (Length of Study and Gender)	257.1	0.7256
a2*a4 (Length of study and Age)	3513.3	0.1952
a3*a4 (Gender and Age)	49.2	0.878

From Table 8, the most significant individual factor for the Individualism dimension of culture is Major (a1). There was a negative correlation between science major and individualism and a positive correlation with art major. The science majors' individualism score was reduced while the art majors' was increased. The rest of the factors had no significant affect according to the P-Value of  $P > 0.03$  of the hypothesis test. Regarding the affect from the pair of factors, the most significant is the pair Duration of Study and Gender (a2\*a3). For the pair of factors (a2\*a3), when the gender is male, duration and gender has a negative correlation with individualism and when the gender is female there is a positive correlation. Thus, when the gender is male, the longer the duration of study and the more the individualism is reduced. Similarly, when the gender is female, the longer the duration of study, the more the individualism is increased. The secondary influential pair of factors is age and major, when the major is science, the younger the age is the more the individualism score changed. The rest of the pair of factors demonstrates weak affects on the individualism score.

**Table 8. Four-Way ANOVA of Individualism**

Factors/factor Pairs	F-test Value	P-Value
		(Threshold = 0.03)
a1 (Major)	5.39	0.021
a2 (Length of Study)	0.05	0.8203
a3 (Gender)	0.3	0.584
a4 (Age)	0.01	0.9424

Table 8 Continued

a1*a2 ( Major and Length of study)	0.71	0.3987
a1*a3 (Major and Gender)	0.11	0.744
a1*a4 (Major and Age)	2.11	0.1475
a2*a3 (Length of Study and Gender)	2.44	0.1196
a2*a4 (Length of study and Age)	0.24	0.6215
a3*a4 (Gender and Age)	0.24	0.625

From Table 9, it is clear that the significant individual factor and pair of factors for The Masculinity Dimension of Culture is Age (a4). Masculinity score shows a positive correlation with Age, which means that the younger the age, the less masculinity is increased. The rest of the factors have no significant affect on the masculinity score given the large P-Value. The most influential pair of factors is the pair Duration of Study and Age (a2\*a4) with a negative correlation. Thus, the larger the duration of study and age, the more the masculinity is reduced. The second influential pair of factors is length of study and gender (a2\*a3) with a negative correlation when the gender is male and positive correlation when the gender is female. Thus, when the gender is male, the longer the length of study abroad, the more masculinity is reduced. When the gender is female, the longer the length of study abroad, the more masculinity is increased. The rest of the pair of factors shows no significant affect on the change of masculinity score.

**Table 9. Four-Way ANOVA of Masculinity**

Factors/factor Pairs	F-test Value	P-Value
		(Threshold = 0.03)
a1 (Major)	0.06	0.801
a2 (Length of Study)	1.55	0.2148
a3 (Gender)	0	0.9969
a4 (Age)	6.53	0.0112
a1*a2 ( Major and Length of study)	1.78	0.1833
a1*a3 (Major and Gender)	0.92	0.3392
a1*a4 (Major and Age)	0.01	0.9308
a2*a3 (Length of Study and Gender)	2.37	0.1248
a2*a4 (Length of study and Age)	3.76	0.0537
a3*a4 (Gender and Age)	0.11	0.7392

In Table 10 the significant individual factor and pair of factors for Long-term Orientation dimension of culture is Gender (a3) and the pair Major and Age (a1\*a4). However, compared with other dimensions, the P-Value of these factors is large, which indicates the null hypothesis is true with the probability shown in the P-Value column. It suggested a weak affect of all factors and pairs on the change of culture score in this dimension.

**Table 10. Four-Way ANOVA of Long-term Orientation**

Factors/factor Pairs	F-test Value	P-Value
		(Threshold = 0.03)
a1 (Major)	0.07	0.7882
a2 (Length of Study)	0.15	0.7024
a3 (Gender)	0.24	0.6255
a4 (Age)	0.21	0.6439
a1*a2 ( Major and Length of study)	0.37	0.5411
a1*a3 (Major and Gender)	0.06	0.8044
a1*a4 (Major and Age)	0.44	0.5056
a2*a3 (Length of Study and Gender)	0.02	0.8985
a2*a4 (Length of study and Age)	0.01	0.9237
a3*a4 (Gender and Age)	0.18	0.6736

### Summary of Findings

Based on data analysis the following summarizes the findings of the present study.

*Research Question 1: Do Chinese students' culture dimension scores change after studying abroad?*

First, the one-way ANOVA results shown in Table 5 suggested that Chinese students who have a study abroad experience significantly changed the scores of their five culture dimensions after studying abroad. Thus results suggested that the study abroad experience

does change students' culture score. Among the five dimensions, the Individualism score demonstrated the largest change in terms of the F-test value.

*Research Question 2: Is there a relationship between cultural change related to four demographic variables of age, gender, major and length of study abroad?*

From the result of the Four-Way ANOVA tests referenced tests in Table 6, the power distance score has a strong negative correlation with age. This indicated that younger people with a study abroad experience are more likely to demonstrate a significant reduction in the power distance to their superiors or direct reports after the return to China.

According to Table 7, the most significant finding is the correlation between major and the uncertainty avoidance score. The science majors illustrated a reduced feeling of threats of uncertainty or ambiguous situations after their study abroad, while art majors demonstrated the opposite change to an increased uncertainty avoidance score.

The results of individualism scores illustrated in Table 8, indicated a significant difference in how each major and gender affected change of the individualism score. First, the science majors show a significant lower individualism while the art majors show increased individualism after their experience of studying abroad. Second, regarding the affect of the pair of factors of duration and gender, female students demonstrated an increased individualism score on a longer length of study abroad while male students with similar time abroad reduced their individualism. For the masculinity analysis results in Table 9, younger people are more likely to have reduced masculinity.

Finally for the culture dimension of long-term orientation, no significant correlation is assumed because of the high P-Value. This suggested that none of the factors or pairs demonstrated an influence on the change of culture score. The results suggested that the long-term orientation score of culture has no significant correlation with any of the demographic factors.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

The purpose of the present study was to test the cultural change based on Hofstede's five dimensions of individuals from the East (China) who experienced higher education in the West (US, Canada, Britain, Australian, and New Zealand). The present exploratory research provided a quantitative study of how a western study experience changed the culture measurement of Chinese students. China has experienced extensive engagement in various global issues in collaboration with western countries. Proactively sending students to study within Western cultures, and experiencing technology and other aspects of western society is the major education strategy that China has been executing to grow the talent that drives its global presence. The need for improved international communication and collaboration, is important for students from the west to learn about China. Under this cultural interaction, it is of great importance for both China and other countries to understand how foreign educational experiences affect student's cultural dimensions.

To investigate culture change after studying abroad, a survey was used based on Hofstede's VSM94 survey manual, in which culture was formulated in five dimensions. Each dimension was represented by 4 questions. The resulting data was used to answer the study's two research questions: research question 1: "Do Chinese students' culture dimensions' score change after studying abroad?" and Research question "Is there a relationship between cultural change related to four demographic variables of age, gender, major and length of study abroad?" Specific hypotheses were developed and used for each question. Analysis of Variance (ANOVA) was applied to test each hypothesis.



The results of the data analyses provided insights into the research questions. The results indicated that there was a significant change of culture in all four dimensions after participant's study abroad experience. Result also suggested that the detailed affect of each demographic factor on culture change at each dimensions.

### **Conclusions**

This exploratory research provided evidence that studying abroad, and exposure to different cultures had an impact on peoples' culture dimensions. The results of this study also indicated that the 4 demographic factors of age, gender, major, and length of study abroad had an impact on the change in culture dimensions.

This research design provided a sample and context that not only supported and extended Hofstede's work, but also provided insights into culture transferring and added the important context of the extent this transfer is applicable in the workplace. Some previous research identified abilities that aided individuals in effectively learning and processing the knowledge and translating that learning to improve organizational knowledge digestion efforts. Knowledge digestion is a process of learning from experience. (Kayes & Yamazaki, 2005) and valuing individual and cultural differences are the requirement for knowledge digestion. Effective knowledge digestion rests in the ability of individuals to reproduce, gather, organize and apply new knowledge. These abilities, or competencies, result from each individual's ability to develop relationships and translate ideas across boundaries. Effective knowledge digestion across different national and ethnic cultures proves to be an important aspect of management innovation and success as organizations become increasingly

international in their reach (Kayes, Kayes & Yamazaki, 2005).

The present research adds to the research on culture differences, international education, and human resource development (HRD). There is limited research on cultural competencies in knowledge transfer of prospective students. Also, there are very few research studies on the impact of Chinese students who experienced study abroad and then returned to China. The present study also contributes to this emerging field of transfer of knowledge from one culture to another. Students who were involved in the present study will have the opportunity to debrief and deconstruct their experience with the researcher at a later date.

In 2012 Hao discussed, students participants , who did study abroad , were in the stage of Minimization as measured by Intercultural Development Inventory prior to study abroad and remained at the same stage by the conclusion of the study abroad experience. In his research t he clamed that it is necessary to provide more support to increase the students sensitivity and skills in the study abroad program, so that they will feel more comfortable and have more capability to deal with culture differences. This study is just one step toward a thorough understanding of study abroad experience's impact on Mainland Chinese students. It is the researcher's hope that further investigation would be conducted on the effects of all the returnees'. Examining the outcomes of study abroad programs and the impact of these returnees culture change, with similar design would assist us with understanding what contributes to students' study abroad experience and to use these changes to benefit more of their career. This research focused on Mainland Chinese students. Study abroad experience

of students from other countries could be examined for comparison purpose.

Recent research on returning students has focused on their role as an alternative solution to their home country's mandate to build a new knowledge structure and technological capacity and showed the depth of the "brain circulation" which was suggested by Cao (1996) as a fact to the idea of brain drain. The concept of "brain drain" reputedly consider as trained skilled labor from particular countries immigrate or come to other countries to search for more opportunities. This "brain drain" and model was occurring during the this study and the fact that students, who has study abroad experience, were not only to find a job in their home country when they returned but also be come a leader of the groups organizations. From this research those returnees are considered to be an alternative solution to China development of new knowledge structure and technological capacity. In the context of China, this study shows the depth of the 'brain circulation' that is happing and the fact that overseas students are not only serving China from abroad or by returning, but also after they return are playing a leading role in many aspects of China's international strategy. Returnees also played a leading role in many parts of China's 'going out' strategy and have a great influence on Chinese firms 'going out' strategy, (*Zou Chuqu* in Chinese Pinyin) (Saxenian, 2002). After studied at the best universities in western countries, deeply involved in the new global economy, experienced in international companies overseas, possessing venture capital, having the network with diversity colleague and having work experience with some of the best multinational corporations in the world, these returnees contribute massively to China's current economic engagement with the world.

In Wang, Zweig and Lin's (2011) paper described the returnees' impact on China's globalization drive and analyzed the factors leading to their success in comparison to multinational corporations and indigenous Chinese firms. In conclusion of this research, as the world prepares to deal with a globalizing China, it must be prepared to deal with a very different group of Chinese, who studied and trained abroad, integrated in at two or more different social and economic environment, and in some the state and private company's their international business has been limited by lacking of overseas experience and connection.

### **Implications for research and practice**

This exploratory research contributes to applying Hofstede's culture dimension theory to measure the culture change of individuals from China. It also provides practical guidance to the Chinese students studying abroad or preparing to study abroad. Chinese students could make more informative decision if study abroad or continue to study abroad according to the fact that if they could accept the significantly changed in different culture dimensions this research discovered.

### **Recommendations for future research**

As an exploratory study, the findings should be interpreted with caution. To date, research examining study abroad experiences of Mainland Chinese students is limited; In the future researchers should use the present study to address some of the limitations and significant findings. For example, future research might employ a mixed- methods research design using a larger sample. In addition, future research may also improve the survey's

usefulness by adding items such as the length of study abroad, country of study or information on returning to home country after studying abroad.

With the results of this research, other important recommendations on the future research could be drawn. Given the result of significant culture change after study abroad, it is valid to further pursue the research question that how the change of personal culture background affect the change of organizational culture. This research question is of greater practical impact on the human resource strategy of the company in china in terms of how to develop the organizational learning by taking advantage from the western culture and technology. In addition, the aforementioned research question could also provide a guideline for education department of China in terms of adjusting amount of investment in financial aid for studying abroad according to the affect of returned students to the development of local industry and academy.

In detail, the future study of how the change of personal culture background affect the change of organizational culture will measure impact of those culture changes in working place and the influence of the study abroad. I would ask these returnees to complete a pretest prior to just after study abroad and a posttest at the conclusion of working in local Chinese organization. A comparison employee group would be used to ensure that the changes are due to the study abroad experiences. I would assemble the comparison group that matches the study abroad group as much as possible. I would also employ other instruments to collect data besides the one by Hofstede. This study would evaluate the interrelation aspects of culture difference as a culture competence in working place, using Hofstede's national-

culture differences in work-related value to shape the behavior of individuals and social groups” (Hofstede & McCrae, 2004). Finally, Provide foundation for the analysis of how students who had study abroad experience can affect the organization culture given their own culture change after study abroad. Besides, to improve the scalability of the statistical analysis result, in the future research a larger population with more variety of samples should be investigated.

The findings of this study could inform not only the personal but also the national level of study abroad grand support decision-making and study abroad program and activities design. Intercultural education and training need to be provided during the orientation, study abroad, and re-entry phases to ensure that study abroad students gain a better understanding and acceptance of cultural difference. Programs and activities should be designed to address the specific needs of the study abroad students. It is of importance to facilitate study abroad students’ interaction with cultural difference, and after they return to their home countries, the interaction with their working environment and their organizational culture.

### **Limitations**

The trade off in using the higher order factor analysis (four way ANOVA) is the increase of type I error. However understanding the correlation between factors is meaningful in the present study. The results of the hypothesis testing on pairs of factors in the present study should be interpreted with caution.

## REFERENCES

- Abdou, K. & Kliche, S. (2004). The strategic alliances between the American and German companies: A cultural perspective. *European Business Review*, 16(1), 8– 27.
- Arenson, K. (2003). Gains seen in short study abroad trips. *The New York Times*, pp. A17.
- Bearden, W., Money, R. B., & Nevins, J. L. (2006). Multidimensional versus unidimensional measures in assessing national culture values: The Hofstede VSM 94 example. *Journal of Business Research*, 59, 195–203.
- Boltho, A., Dadush, U., & Otsubo, S. (1996). China's emergence: Prospects, opportunities and challenges. *Asian Economic Journal*, 10(3), 271–289.
- Cao (1996). Debating ‘brain drain’ in the context of globalization. *Compare* , 26, 269-284.
- Carter, T. (1991). Cultural values: A review of empirical research and implications for counseling. *Journal of Counseling and Development*, 70(1), 164–173.
- Chen, P., & Partington, D. (2004). An interpretive comparison of chinese and western conceptions of relationships in construction project management work. *International Journal of Project Management*, 22(5), 397-406.  
doi:<http://dx.doi.org/prox.lib.ncsu.edu/10.1016/j.ijproman.2003.09.005>
- Cooper, D., & Schindler, P. (2006). *Business research methods* (9th ed.). New York: McGraw-Hill/Irwin.
- Cushner, K. (2003). *Beyond tourism: A practical guide to meaningful educational travel*. Manchester: Scarecrow education.

- Cleveland, M., Laroche, M., & Papadopoulos, N., (2009). Cosmopolitanism, consumer ethnocentrism, and materialism: An eight-country study of antecedents and outcomes. *Journal of International Marketing* 17 (1): 116–146.
- Deardorff, D. (2008). Intercultural competence: A definition, model, and implications for education abroad. In V. Savicki (Ed.), *Developing intercultural competence and transformation: theory, research, and application in International Education* (pp.32-53). Sterling, VA: Stylus.
- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41, 417–440.
- Lee, T., McCauley, R., & Draguns, G. (1999). *Personality and person perception across cultures*. Mahwah, NJ: Erlbaum.
- Dwyer, M. M., & Peters, C. K. (2004). The benefits of study abroad. *Transitions Abroad*, 37, 56-59.
- Fan, D. (2007) More Chinese students studying abroad. *International Business Times*. Available at: <http://www.ibtimes.com/articles/20071024/chinese-students.htm> (accessed 18 January 2009).
- Fischer, K. (2009). Short study-abroad trips can have lasting effect, research suggests. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com>
- Kamakura, W. A., & J. A. Mazzon. (1991). Value segmentation: A model for the measurement of values and value systems. *Journal of Consumer Research*, 18 (2): 208–218.



- Kayes, B. Kayes & Yamazaki, (2005) Essential competencies for cross-cultural knowledge absorption, *Journal of Managerial Psychology*, 20 (7) ,578 – 589.
- Kluckhohn, F., & Strodtbeck, F. (1961). *Variations in value orientations*. Westport, CT: Row, Peterson.
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3), 411–432.
- Limon, Y., Kahle, L. & Orth, U.,. (2009). Package design as a communications vehicle in cross-cultural values shopping. *Journal of International Marketing* 17 (1): 30–57.
- Lustig, W. & Koester, J. (1996). *Intercultural competence: Interpersonal communication across cultures* (2<sup>nd</sup> ed.). New York: HarperCollins.
- Gareth, D. (2005) ‘Chinese students’ motivations for studying abroad. *International Journal of Private Higher Education*, 2: 16–21.
- Gudykunst, W. B., & Mody, B. (2002). *Handbook of international and intercultural communication* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Olson, L., & Kroeger, R. (2001). Global competency and intercultural. *Journal of Studies in International Education*, 5(2), 116-137.
- Paul, P., Roy, A., & Mukhopadhyay, K., (2006). The impact of cultural values on marketing ethical norms: A study in India and the United States. *Journal of International Marketing* 14 (4): 28–56.

- Pressey, A., & Selassie, G. (2003). Are cultural differences overrated? Examining the influence of national culture on international buyer–seller relationships. *Journal of Consumer Behavior*, 2(4), 354–368.
- Ralston, D., Holt, D., Terpstra, R., & Kai-Cheng, Y. (2007). The impact of national culture and economic ideology on managerial work values: a study of the United States, Russia, Japan, and China. *Journal of International Business Studies*, 28(1), 177-207.
- Hao, C. (2012). *The Effect of Study Abroad on the Development of Intercultural Sensitivity Among Mainland Chinese High School Students*. n.p.: ProQuest, UMI Dissertations Publishing.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hofstede, G. (1994). Values Survey Module (VSM) 94 Model Manual. Retrieved April 28, 2008, from <http://www.geert-hofstede.com>
- Hofstede, G. (1996). Riding the waves of commerce: A test of trompenaars' "model" of national culture differences. *International Journal of Intercultural Relations*, 20(2), 189-198. doi:[http://dx.doi.org/prox.lib.ncsu.edu/10.1016/0147-1767\(96\)00003-X](http://dx.doi.org/prox.lib.ncsu.edu/10.1016/0147-1767(96)00003-X)
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, CA: Sage.
- Hofstede, G. (2006). What did GLOBE really measure? Researchers' minds versus respondents' minds. *Journal of International Business Studies*, 37, 882–896.

- Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), 5–21.
- Hofstede, G., & Hofstede, G. J. (2005). *Cultures and organizations: Software of the mind* (Revised and expanded, 2nd ed., p79, p166, p172, p218, p219, p220, p401-403, p420, p430). New York: McGraw Hill.
- Hofstede, G., Hofstede, G. J., Minkov, M., & Vinken, H. (2008). Values Survey Module 2008 manual. Retrieved April 28, 2008, from <http://www.geerthofstede.nl>
- Hofstede, G., & McCrae, R. R. (2004). Personality and culture revisited: Linking traits and dimensions of culture. *Cross-Cultural Research*, 38(52), 52–88.
- Hofstede, G., Van Deusen, C., Mueller, C. B., & Charles, T. A. (2002). What goals do business leaders pursue? A study of fifteen countries. *Journal of International Business Studies*, 33(4), 785–803.
- Huang, Y., (2003). *Selling China: Foreign direct investment during the reform era*. Cambridge University Press, New York.
- Jung-Tsung Tu. (2010). Cross-cultural comparisons between taiwan and america. *Interdisciplinary Journal of Contemporary Research in Business*, 2(4), 116-129.
- Kruger, T., Roodt, G., & Hofstede, G. (2003). VSM-94 Revisited: Is it reliable and valid? *South African Journal of Industrial Psychology*. 29(1), 75–82.
- Liu, J. (2002). ‘Negotiating silence in American classrooms: Three Chinese cases’. *Language and Intercultural Communication*, 2(1), 37-54.

- Niedziolek, R. C. (2005). National culture and work related values of Puerto Rico. Doctoral dissertation, Capella University, Minneapolis, MN.
- Nuzzo, R. (2014). Scientific method: Statistical errors. *Nature* 506 (7487), 150
- Peck, R., & Devore, J. (2011). *Statistics: The exploration and analysis of data*. (7th ed., p. 464–465). Stamford, CT: Brooks.
- Meyer, T., Richter, S., & Raspe, H. (2013). Agreement between pre-post measures of change and transition ratings as well as then-tests. *BMC Medical Research Methodology*, 13(1), 52-52. doi:10.1186/1471-2288-13-52
- Ministry of Education (2007). *Work related to students and scholars studying abroad*. Retrieved from [http://www.moe.edu.cn/english/international\\_2.htm](http://www.moe.edu.cn/english/international_2.htm)
- Mooij M., & Hofstede G. (2010). The Hofstede model Applications to global branding and advertising strategy and research. *International Journal of Advertising*, 29, 85-110.
- Saxenian, A. (2002). *Local and global networks of immigrant professionals in silicon valley*. San Francisco: Public Policy Institute of California.
- Schwartz, S. H. (1994). Beyond individualism/collectivism: New cultural dimensions of value. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. C. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, method and applications* (pp. 85–119). Thousand Oaks, CA: Sage.
- Shane, N., Xhao, H., & Hu, X. (2003). Cultural adaptation on the Web: A study of American companies' domestic and Chinese Web sites. *Journal of Global Information Management*, 11(3), 63–81.

- Shi, X., & Wang, J., (2011) Cultural Distance between China and US across GLOBE Model and Hofstede Model, *International Business and Management*, 2(1). 11-17.
- Sivakumar, K., & Nakata, C. (2001). The stampede toward Hofstede's framework: Avoiding the sample design pit in cross-cultural research. *Journal of International Business Studies*, 32(3), 555–574.
- Smith P, Dugan S, & Trompenaars F.(1996) National culture and the values of organizational employees — a dimensional analysis across 43 nations. *J Cross-Cult Psychol*, 27(2):231–64.
- Sun, W., & Chen, G. (1999). Dimensions of difficulties mainland Chinese students encounter in the United States. *Intercultural Communication Studies*, IX(1), 19-30.
- Swaidan, Z., Rawwas, M., & S. J. Vitell. (2008). Culture and moral ideologies of African Americans. *Journal of Marketing Theory & Practice* 16 (2): 127–137.
- Mazzarol, T. & Soutar, G., (2002) "'Push-pull" factors influencing international student destination choice", *International Journal of Educational Management*, 16 ( 2), 82 - 90
- Trompenaars, F. (1993). *Riding the waves of culture: Understanding cultural diversity in business*. London: business The Economist Books.
- Venaik S. & Brewer, P. A. (2008). Contradictions in national culture: Hofstede vs Globe, *50th Annual Meeting of the Academy of International Business (AIB)*, 50, 274-274.
- Vladimír, B. (2003). Cultural barriers in knowledge sharing. *Ekonomics and Management*, 6, 57-62.

- Wang, H., Zweig, D., & Lin, X. (2011). Returnee entrepreneurs: Impact on china's globalization process. *Journal of Contemporary China*, 20(70), 413-431.  
doi:10.1080/10670564.2011.565174
- Wang, P., & Tong, Tony, W. (2004). An integrated model of knowledge transfer from MNC parent to china subsidiary. *Journal of World Business*, 39(2), 168-182.
- Xiao, H., & Petraki, E. (2007). An investigation of Chinese students' difficulties in intercultural communication and its role in ELT. *Journal of Intercultural Communication*, 13.
- Yao, L. (2004). *The Chinese overseas students: An overview of the flows change*. Australian National University 12th Biennial Conference of the Australian Population Association, September, Canberra.
- Yoo, B., Donthu, N., & Lenartowicz, T. (2011). Measuring Hofstede's five dimensions of cultural values at the individual level: Development and validation of CVSCALE. *Journal of International Consumer Marketing*, 23, 193-210.

## APPENDICES

**Appendix A. Consent Form****North Carolina State University****INFORMED CONSENT FORM for RESEARCH**

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of the research is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in the study. Some research studies may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above OR BELOW.

**Title of Study:** How Study-Abroad Experiences' Influence Cultural Dimensions of Chinese Students

**Principal Investigator:** Ruohan Sun

**Purpose of the Study**

The purpose of this study is to test the cultural change of individuals from the East (China) who experienced higher education in the West (US, Canada, Britain, Australian, and New Zealand).

**What will happen if you take part in the study?**



If participants agree to participate in this study, they will be asked to complete the online survey which includes 33 questions. Completing the survey should take approximately 10 minutes and can be completed online. The researcher will provide you with a link to this instrument using Qualtrics (a university approved survey tool) to complete at your convenience.

**Risks**

There are no foreseeable risks to this study.

**Benefits**

Since there is limited research on cultural competence for Chinese students studying abroad and returning to China, this project will contribute to research and practice. Study participants may request a summary of the research and have the opportunity to debrief and deconstruct their experience.

**Confidentiality**

The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely on password protected hard drive and in locked cabinets within the researchers' offices. No reference will be made in oral or written reports, which could link you to the study. You will be identified in study materials by a 4-digit code (for data collection) and using a pseudonym (in study reports). All data will be recorded as aggregated data. Only the primary researchers will have access to the list containing your real name, 4-digit codes, and pseudonyms.

**Compensation**

No compensation will be provided in this research.

**What if you have questions about this study?**

If you have questions at any time about the study or the procedures, you may contact the researcher, Ruohan Sun, rsun3@ncsu.edu, 919-348-5312.

**What if you have questions about your rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).

**Consent To Participate**

"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled."

- I agree
- I don't agree

## **Appendix B. Values Survey Module 1994 (VSM-94)**

### INTERNATIONAL QUESTIONNAIRE (VSM 94)

For Part 1 and 2 1 = of utmost importance 2 = very important 3 = of moderate importance

4 = of little importance 5 = of very little or no importance

For Part 4 1 = strongly agree 2 = agree 3 = undecided 4 = disagree 5 = strongly disagree

#### Part 1

Please think of an ideal job, disregarding your present job, if you have one. In choosing an ideal job, how important would it be to you to ...

1. Have sufficient time for your personal or family life: \*

1, 2, 3, 4, 5

2. Have good physical working conditions (good ventilation and lighting, adequate work space, etc.): \*

1, 2, 3, 4, 5

3. Have a good working relationship with your direct superior: \*

1, 2, 3, 4, 5

4. Have security of employment: \*

1, 2, 3, 4, 5

5. Work with people who cooperate well with one another: \*

1, 2, 3, 4, 5

6. Be consulted by your direct superior in his/her decisions: \*

1, 2, 3, 4, 5

7. Have an opportunity for advancement to higher level jobs: \*

1, 2, 3, 4, 5

8. Have an element of variety and adventure in the job: \*

1, 2, 3, 4, 5

## Part 2

In your private life, how important is each of the following to you?

9. Personal steadiness and stability: \*

1, 2, 3, 4, 5

10. Thrift: \*

1, 2, 3, 4, 5

11. Persistence (perseverance): \*

1, 2, 3, 4, 5

12. Respect for tradition: \*

1, 2, 3, 4, 5

## Part 3

13. How often do you feel nervous or tense at work?: \*

Never

Seldom

Sometimes

Usually

Always

14. How frequently, in your experience, are subordinates afraid to express disagreement with their superiors?: \*

Very seldom

Seldom

Sometimes

Frequently

Very frequently

Part 4

To what extent do you agree or disagree with each of the following statements?

15. Most people can be trusted: \*

1, 2, 3, 4, 5

16. One can be a good manager without having precise answers to most questions that subordinates may raise about their work: \*

1, 2, 3, 4, 5

17. An organization structure in which certain subordinates have two bosses should be avoided at all costs: \*

1, 2, 3, 4, 5

18. Competition between employees usually does more harm than good: \*

1, 2, 3, 4, 5

19. A company's or organization's rules should not be broken -not even when the employee thinks it is in the company's best interest: \*

1, 2, 3, 4, 5

20. When people have failed in life it is often their own fault: \*

1, 2, 3, 4, 5

#### Part 5

Some information about yourself (for statistical purposes)

21. Are you: \*

Male

Female

22. How old are you?: \*

Under 20

20-24

25-29

30-34

35-39

40-49

50-59

60 or over

23. How many years of formal school education (or their equivalent) did you complete (starting with primary school)?: \*

10 years or less

11 years

12 years

13 years

14 years

15 years

16 years

17 years

18 years or over

24. If you have or have had a paid job, what kind of job is it / was it?: \*

No paid job (includes full-time students)

Unskilled or semi-skilled manual worker

Generally trained office worker or secretary

Vocationally trained craftsperson, technician, informatician, nurse, artist or equivalent

Academically trained professional or equivalent (but not a manager of people)

Manager of one or more subordinates (non-managers)

Manager of one or more managers

25. What is your nationality?: \*

26. What was your nationality at birth (if different)?:

Added questions

27. Where do you work at this moment?:

28. Do you work for a profit or a non-profit company?: \*

29. Did you ever study abroad?

30. If yes, how long have you studied abroad?

31. What is your educational major when you study abroad?

32. Which country have you studied in?