

**RELATIONSHIP BETWEEN CULTURAL VALUES AND KNOWLEDGE
SHARING IN SELECTED MULTINATIONAL COMPANIES IN MALAYSIA**

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ABSTRACT

Knowledge has today become a vital factor of production for all multinational firms (MNCs) that operate across global boundaries. MNCs have to find ways to enhance knowledge sharing (KS) capabilities and create effective mechanisms and strategies to promote KS. Recent research showed that effective knowledge sharing (KS) has strong impact on organizational learning and effectiveness, work practices and innovative capability. However, MNCs face many barriers that inhibit the sharing of knowledge. One of this is the many cultural issues that arise since these MNCs operate in different countries. KS can be a problem since employees of MNCs may come from diverse cultural backgrounds. The main objective of this research is to examine the relationship between cultural values and knowledge sharing behaviour. Data was collected from a sample of 250 senior executives from three diverse ethnic group, (Malays, Chinese and Indians) all employed at selected MNCs in Malaysia. Findings revealed that there is a significant variation on the impact of cultural values on KS behavior among the three diverse ethnic groups.

Keywords: Cultural Values, Knowledge Sharing Behaviour, Power Distance, Collectivism, Individualism, Masculinity

INTRODUCTION

Background to the study

Knowledge has today become a vital factor of production for most organizations, especially for multinational firms (MNCs) that operate across global boundaries. According to the resource based view firms can maintain and achieve sustainable competitive advantage and earn superior profits if it owns and controls tangible and intangible assets (Wernerfelt, 1984; 1995). The eclectic framework of Dunning (1980) and empirical work of Pearce (1993) clearly acknowledged technology and knowledge as important sources of ownership advantages for MNCs to compete globally. Recent research also showed that effective knowledge sharing (KS) has a strong impact on organizational learning and effectiveness (Yang, 2007), work practices (Berends, 2005) and innovative capability (Lin, 2007). In line with these views, MNCs have to find ways to enhance KS capabilities and create effective mechanisms and strategies to promote KS to remain competitive and stay ahead. However, MNCs face many barriers that inhibit the sharing of knowledge. One of this is the cultural differences among the various ethnic groups when MNCs operate in different countries. KS behaviour may differ since employees of MNCs may come from diverse cultural and ethnic backgrounds. Culture is therefore an important antecedent influencing the success of knowledge management (KM) in organizations (Hasanali, 2002; Snyman and Kruger, 2004; Forstenlechner and Lettice, 2007).

Research problem

KS is a subset of KM. KM focuses more on the methods in which organizations create, retain and share codified and tacit knowledge (Teece, 2000; Argote, 1999 and Huber, 1991). Knowledge sharing (KS) on the other hand refers to the sharing of knowledge between people in organizations. KS can occur at the group level and organisational level and a number of authors suggest that organizational knowledge resides in the interactions and transactions between individuals and therefore forms the basis of competitive advantage (Argote and Ingram, 2000; Nonaka, 1991; Spender and Grant, 1996). Implicit in these transactions is the assumption that individuals will share with and transfer their knowledge to others, which may or may not occur in circumstances where knowledge sharing is regarded as a voluntary action (Dougherty, 1999). However, individuals may have different cultural values and these differences may influence their KS behaviour. It is argued that examining cultural values at the individual level is more appropriate since it influences personal thinking and attributes (Dake, 1991). Thus, studies on cultural values should focus more on individual perspectives which may provide more meaningful findings (Soares et al., 2007). It is argued that aggregating cultural values at the national level reduces the opportunity to reveal variations that might exist at the individual level (Laroche et al., 2005). There are a number of studies that relate cultural values (CV) and other management areas such as the relationship between CV and leadership (Dorfman and Howell, 1988), the impact of CV and empowerment (Dimitriades, 2005), relationship between CV and performance management (Mendonca and Kanungo, 1996) and CV and service quality (Kueh and Voon, 2007). Most of the initial studies on KM are also too oriented towards the management information systems

– KM enablers and KM systems (Davenport, Jarvenpaa and Beers, 1996; Gray, 2000), the role of information technology in KM (Barney, 1991) and knowledge mining and decision support systems for KM (Holsapple and Joshi, 2001; Spiegler, 2003). Three recent studies tried to relate culture to KS but these focused more on organizational culture (Al-Alawi, Al-Marzooqi and Mohammed, 2007), cross country cultural differences (Forstenlechner and Lettice, 2007) and cultural factors such as language proficiency, education and schooling, gender biases, age and work experience (King, Kruger and Pretorius, 2007). Thus, very little research was found to focus on the association between individual cultural values and KS behaviour. This study focuses on MNCs where knowledge plays an important role. A review of past literature clearly shows that the origin of the KS/KM concepts can be traced back to the practice of knowledge transfer policies of MNCs (Gupta and Govindarajan, 1991; Davidson, 1980; 1983). The application of KS has been in existence in MNCs for long. Malaysia has been selected for this study because of its unique cultural diversity. Its current population stands at 28 million and out of this the Malays (the indigenous group) make up 65% followed by Chinese 26%, Indians 8% and others 1% (Department of Statistics, Malaysia, 2009). The Malays are predominantly Muslims and follow Islamic values and beliefs whereas the Chinese and Indians are mostly Buddhist, Christians and Hindus (Hashim, 2007). However, majority of the employees in MNCs in Malaysia are Chinese followed by Malays and Indians. This is due to the fact that most Malays prefer to be employed in the public sector. This ethnic diversity can lead to cultural differences which may affect the sharing of knowledge among employees in MNCs. Thus, the objective of

this study is to provide some good insights on the impact of cultural values on KS behaviour.

LITERATURE REVIEW

A review of theories on KM reveals that initial studies focused on knowledge transfer among subsidiaries of multinational firms and knowledge was seen as a vital proprietary asset (Gupta and Govindarajan, 1991; Davidson, 1980; 1983). Some linked knowledge sharing to communication theory where the sharing of knowledge was seen as a form of information exchange between individuals in organizations (Shannon and Weaver, 1949; cited in Cummings, 2003). In the 21st century, knowledge was referred to as a central part of continuous learning in organizations which occurred through interaction among employees. This eventually became known as part of Organisation Learning Theory (Szulanski, 2000). One of the most important theories in the field of KM was however developed by Nonaka (1994) which he termed as the Dynamic Theory of Knowledge Creation. This theory provided a comprehensive theoretical view on how to conceptualise the entire knowledge creation process which later became known as the SECI model. Within the four modes (Socialisation, Externalisation, Combination and Internalisation), KS played a vital role for all conversions to succeed (Nonaka, 1994). Nonaka (1994) argued that the key to the success of knowledge sharing was ultimately individual and organizational commitment. It is also important to highlight that a lot of the research in the 1990s emphasized on the technological aspect of KM where more focus was given on the KM systems (Gray, 2000). However, in the last few years many organizations realised that technology is only an enabler and the main success of KS lied in the hands

of humans or people. In other words, the focus of KS should be more on the organizational members who are involved in the sharing of knowledge. That is why this research has tended to focus on KS behaviour among employees in organizations.

Knowledge Sharing

KS can be referred to as the process of capturing knowledge or moving knowledge from a source unit to a recipient unit (Bircham-Connolly, Corner and Bowden, 2005). Willem (2003) on the other hand, defines KS as the exchange of knowledge between two parties in a reciprocal process allowing reshaping and sense-making of the knowledge in the new context. Today's professionals are confronted with the "information-based, knowledge-driven, service-intensive economy" (Bartlett and Ghoshal, 2002). Thus, knowledge is dependent on the individuals in the organization. It has been suggested that organizational knowledge resides in the interactions between individuals which forms the basis of competitive advantage (Argote and Ingram, 2000; Nonaka, 1991).

Cultural Values

There are various definitions of culture. Hofstede (1984, p.51) defines culture as "*The collective programming of the human mind that distinguishes the members of one human group from those of another. Culture in this sense is a system of collectively held values.*"

According to Smith and Schwartz (1997, p.80), cultural values refer to desirable goals and act as modes of conduct that promote these goals and serve as guidelines to evaluate behaviour. Cultural values are "embedded in the collective memory of people of a particular society" (Ali et al., 2005). One of the most extensively used frameworks

developed to examine cultural values is Hofstede's Model of Cultural Dimensions (Hofstede, 1997). Hofstede (1997) conducted a comprehensive study from 1967 to 1973 and analysed data from over 100,000 individuals from 40 countries. The four dimensions identified were Power Distance (PD), Individualism (I) versus Collectivism (C), Uncertainty Avoidance (UA) and Masculinity (M) versus Femininity (F) (Hofstede, 1980). The fifth dimension; Long term (LT) versus Short term orientation (ST) was added later based on another survey conducted by Chinese scholars in 23 countries (Hofstede and Bond, 1988; Hofstede, 2001). A brief description of the meaning of each dimension is summarised in Table 1.

Table 1

Cultural Dimension	Meaning
Power Distance	The extent to which the less powerful members of institutions and organizations expect and accept that power is distributed unequally.
Individualism-Collectivism	Individualism is contrasted with collectivism, and refers to the extent to which people are expected to stand up for themselves and to choose their own affiliations, or alternatively act predominantly as a member of a life-long group or organization.
Uncertainty avoidance	Reflects the extent to which members of a society attempt to cope with anxiety by minimizing uncertainty.
Masculinity	Refers to the value placed on traditionally male or female values (as understood in most Western cultures). So called 'masculine' cultures value competitiveness, assertiveness, ambition, and the accumulation of wealth and material possessions, whereas feminine cultures place more value on relationships and quality of life.
Long-Term/Short-term Orientation	Describes a society's "time horizon," or the importance attached to the future versus the past and present

This research intends to examine impact of cultural values on knowledge sharing behaviour using Hofstede's cultural framework. Hofstede's cultural values framework has been used extensively by other authors to develop cultural values dimensions (Trompenaars, 1994; Triandis, 1995; Schwartz, 1992, House et al., 2004) and it has become a solid foundation for cross cultural studies at the individual unit level (Blodgett, et al., 2008). Hofstede's cultural framework has been applied in many fields such as

marketing (Alden et al., 1993; Gregory and Munch, 1997; Zandpour et al., 1994), brand strategies (Roth, 1995), ethics (Blodgett et al., 2001). Despite not adopting Hofstede's actual instrument due to its poor reliability, a large number of studies have confirmed the relevance of its cultural dimensions in international marketing and consumer behaviour (Soares et al., 2007). Bakir et al. (2000) stated that Hofstede's framework has "intuitive conceptual appeal". Sondergaard (1994) noted that Hofstede's work is widely acknowledged, receiving no less than 1063 direct references in journals. The practice of measuring culture via a set of values has generally been accepted and used by many authors (Leung et al., 2002 and Smith et al., 2002). However, Javidan et al. (2006) advised that the selection of cultural dimensions should depend on the scope of research in general and cultural values may not relate to all behavioural practices but only to certain relevant ones.

There are a lot of criticisms towards the reliability of Hofstede's original cultural values instrument (Bakir et al., 2000; Kagitcibasi, 1994; Kruger and Roodt, 2003; Yoo and Donthu, 1998). According to Bakir et al. (2000), Hofstede's framework suffers from operationalisation weaknesses. Kruger and Roodt (2003) found that Hofstede's Value Survey Module 94 (32 item instrument) had weak reliability coefficients. Blodgett et al. (2008) on the other hand empirically tested Hofstede's 32 item cultural instruments at the individual level and found it also lacked construct validity and had low reliability values. It is also argued that the Individualism – Collectivism construct cannot be treated as a bipolar dimension (Triandis, 1995; Coon and Kemmelmeier, 2001). Triandis (1995) then developed a separate survey instrument to measure horizontal and vertical collectivism and horizontal and vertical individualism. However, Triandis's instrument was found to

be unreliable due to high correlation between the constructs (Sivadas et al., 2008). A more reliable instrument to measure horizontal and vertical collectivism and horizontal and vertical individualism was recently developed by Sivadas et al. (2008). This instrument had better psychometric properties. Schwartz's (1992) instrument on the other hand was too long with many dimensions and overlapped with Hofstede's values. Empirical research by Steenkamp (2001) to compare Hofstede's cultural dimensions and Schwartz's cultural dimensions resulted in high correlation between the cultural dimensions. This again indicated that Hofstede's cultural values are closely related to Schwartz's cultural values. Therefore, with this in mind it is important to adopt and develop dimensions which have high construct validity such as the CV scale developed by Donthu and Yoo, 1998 and Yoo et al., 2001.

Past empirical perspectives on the impact of cultural values on KS

A review of the literature reveals that in the last five years there were a few empirical studies exploring the relationship between cultural values and KS. However, only one was directly looking at the impact of Hofstede's cultural dimensions on KS (Wolfe and Loraas, 2008).

Wolfe and Loraas (2008) used an experimental approach in a lab setting and studied factors promoting KS. The study covered MBA students working in professional service firms. They found that incentive and culture had positive effect on KS behaviour. Horizontal and vertical collectivism were found to have positive effect on KS. Horizontal

and vertical individualism had negative effect on knowledge sharing. This study is different since we intend to examine cultural differences between different ethnic groups and its impact on KS.

Ford and Chan (2003) conducted a case study to examine KS in a multicultural setting. One international Japanese subsidiary based in the US was selected for the study. The focus of this study was not only to examine cultural dimensions as espoused by Hofstede but other cultural factors such as language, organisational culture such as formal structure, social networks etc. language, lack of formal structure, lack of social networks and knowledge is power. These factors were found to be major stumbling blocks to KS. However, no attempt was made to relate Hofstede's cultural dimensions to KS behaviour. The dimensions were explored separately and it was found that there were no significant differences between Japanese and American employees cultural orientation.

Sackmann and Friesl (2007) conducted an intercultural simulation on MBA students in an intercultural program and found that cultural factors such as ethnicity, gender, and national culture affects KS. However, the study did not examine cultural dimensions advocated by Hofstede.

Another qualitative study in a multicultural setting was conducted by Ardichvili et al (2006) who compared KS behaviour of employees in China, Russia and Brazil. However, this study did not employ Hofstede's cultural framework but also used a range of cultural variables such as competitiveness, importance of saving face, in group orientation,

attention paid to power and hierarchy, modesty and collectivism. Findings showed that the factors had different level of importance among employees. For Chinese employees saving face was less important than expected and modesty and high degree of competitiveness had serious barriers on KS in China but not so in Brazil and Russia. Differences in power and hierarchy were found to be less critical in all three countries. It was also found in all three countries that people were more willing to share knowledge within the group and less willing to share knowledge outside the group.

Dulami (2007) conducted a study on KS covering four international joint ventures in Singapore. Three were Japanese-Singapore joint ventures and one German –Singapore joint venture. Lack of commitment, lack of ‘conducive’ environment for KS, different learning culture and incompatibility between local and foreign cultures were found to be major barriers to KS among the Japanese-Singapore joint venture. The German joint venture however, exhibited strong commitment to share knowledge and desire to learn.

Another study in South Africa (Finestone and Synman ,2005) examined challenges faced by knowledge managers in a multicultural setting. Using in-depth interviews and focus group study, the study found deferring views in their responses and respondents were afraid to acknowledge cultural differences as a barrier to KS. One respondent saw multiculturalism as an important factor influencing KS due to existence of distrust among employees. The main results revealed that language, shared corporate culture, trust, cross cultural interaction, traditional culture of competitiveness, historical attitude and resistance to change were major antecedents influencing KS behaviour.

Hutchings and Michailova (2006) studied the impact of group membership on KS behaviour in Russia and China. Using semi structured interviews; they covered western and local managers and employees in both countries. Their findings contradicted with past research where they found people in China and Russia had greater propensity to share knowledge within the group. Personal relationship within the group and trust were main factors influencing KS behaviour among people in Russia and China.

Another recent study conducted in China also examined impact of culture on KS. Employing a survey based approach, Huang et.al (2008) found cultural factors such as 'face saving' and 'guanxi' to have significant influence on intention to share knowledge among MBA students in China.

There were also studies that focused on impact of organisational culture on KS. Al-Alawi et al (2007) conducted a survey and some in-depth interviews covering public and private sector staff from various organisations in Bahrain. They found trust, communication, information systems, rewards and organisation structure had positive impact on KS. Similarly, Lai and Lee (2007) also conducted an empirical survey and examined the impact of organisational culture on KS in selected Taiwanese firms. They found that authoritative culture that is based on control, power and bureaucracy had negative effect on KS. Effective culture which focuses on efficiency and role clarity had positive influence on KS.

The review of the above literature clearly shows a few gaps. Firstly, there is limited research that focuses on the impact of cultural values based on Hofstede's cultural dimensions on KS behaviour. Secondly, there are measurement issues. Ford and Chan (2003) uses Hofstede's cultural dimension but it was measured based on the original VSM 94 survey questionnaire (Hofstede, 1994). Evidence shows that this instrument had low reliability coefficients (Kruger and Roodt, 2003) and lacked construct validity (Blodgett et al, 2008). Wolfe and Loraïs on the other hand use a new scale to measure individualism and collectivism developed by Triandis's and Gelfands (1998). This scale divides individualism and collectivism into four dimensions: vertical individualism, vertical collectivism, horizontal collectivism and horizontal individualism. However, this instrument was found to have high correlation between the constructs (Sivadas et al, 2008). Our research uses a more reliable instrument which had better psychometric properties (Sivadas et al, 2008). Thirdly, most of the research above does not focus on differences between cultural values among ethnic groups. Our research is therefore unique since we argue that cultural values tend to have different impact on KS among the three ethnic groups.

Hypotheses development and theoretical framework

The theoretical framework for this research was based on Hofstede's (1980) typology on cultural dimensions on how societies can be classified. This framework is very comprehensive and has extensively been used in the study of cultural values in the last two decades. The cultural dimensions of Individualism and Collectivism was based on Triandis seminal work that further divided the dimension into four types Horizontal

Collectivism, Vertical Collectivism, Horizontal Individualism and Vertical Individualism (Triandis, 1995). Power distance dimension was not included since it is similar to vertical collectivism and vertical individualism dimensions. Long term orientation and uncertainty avoidance were excluded since we could not find logical arguments to support its impact on KS behaviour.

Collectivism

The individualism-collectivism cultural dimension has been identified as the most vital and strongest construct to give a clear understanding of the differences between individual behaviour among different cultures (Oyserman et al., 2002; Triandis, 2004; Williams, 2003). Individualism “implies a loosely knit social framework in which people are supposed to take care of themselves and their immediate families only, while collectivism is characterized by a tight social framework in which people distinguish between in-groups and out-groups; they expect their in-groups (relatives, clan, organizations) to look after them, and in exchange for that they feel they owe absolute loyalty to it” (Hofstede, 1980, p. 45). However, do all people in the individualistic culture show individualistic characteristics? Do all people in the collectivistic culture show collectivistic characteristics? Triandis (1995) argues that the approach used by Hofstede (1980) to measure collectivism and individualism on a continuum as a bipolar dimension is not so correct since it views the construct as uni-dimension. Triandis (1995) proposes the multidimensional view and further subdivides collectivism and individualism into horizontal and vertical collectivism and individualism. This approach is able to further capture the cultural value with greater depth. People in collectivistic society tend to belong to a few in-groups with great commitment and loyalty (Triandis, 1995). People in

collectivistic society tend to focus on establishing relationships among members within groups (Ali, 2005). In-group collectivism was defined as “the degree to which individuals express pride, loyalty and cohesiveness in their organisations or families” and members are highly interdependent and have a common sense of fate (Alavi, 2003). Members in collectivistic societies emphasise more on maintaining their relationship with others (Markus and Kitayama, 1991) and tend to avoid offending people’s feelings (Gudykunst et al., 1996). Ardichvili et al. (2006) found that members are more willing to share knowledge if they are part of the ‘in-group’ and not willing to share knowledge with members not within the group. Vertical collectivism emphasizes on cooperation, group conformity, respect for authority and hierarchy whereas horizontal collectivism focuses on equality (Triandis & Gelfand 1998). Triandis relates the H-I construct to low power distance and high individualism and the V-I construct to high power distance and high individualism. H-C on the other hand can be referred to as having low power distance and high collectivism and V-C is high power distance and high collectivism. We argue that both horizontal and vertical collectivism are positively related to KS behaviour. Members in a horizontal collectivist society are voluntarily willing to cooperate within their members to meet group goals. On the other hand, those in a vertical collectivist society are also willing to cooperate within the in group but through submitting themselves to the authority. Empirical research tends to support this notion. Both vertical and horizontal collectivism were found to have positive relationship with KS behaviour (Wolfe and Loraas, 2008).

H1: There is positive relationship between horizontal collectivism and KS behaviour

H2: There is positive relationship between vertical collectivism and KS behaviour

Individualism

People in individualistic societies may belong to many in-groups but their relationships with other group members tend to be loose as compared to collectivists (Triandis, 1995).

In individualistic society, people pay more emphasis on personal goals and pleasure and not group goals and tend to maintain independence from other members (Ali et al., 2005; Markus and Kitayama, 1991). Assertiveness, independence, personal self gratitude, self reliance and self control are some of the personal values that can be seen in individualistic society (Ali et al., 2005). However, it is argued that if collective effort provides a gain to the individual then they may work collectively (Wagner and Moch, 1986). Members in individualistic cultures tend to focus more on their ‘uniqueness’ rather than their connectedness with others (Markus and Kitayama, 1991). Vertical individualism emphasizes on hierarchy and horizontal individualism emphasizes on equality (Triandis & Gelfand 1998). We argue that members in a vertical individualistic society tend not to share knowledge or may even hoard knowledge since knowledge is considered a powerful ownership advantage which can be used to move up the corporate ladder in a hierarchical organizational structure. Similarly, in a horizontal individualistic society, its members may also not share knowledge voluntarily. But again it may depend on the overall organisation climate in the work place. Here again, the positive organisational climate that encourages KS may influence the members behaviour to share knowledge if there is something to gain. Past research found insignificant negative relationship between vertical individualism KS behaviour (Wolfe and Loraas, 2008). The same research also found positive impact of H-I on Ks behaviour

H3: There is negative relationship between horizontal individualism and KS behaviour

H4: There is negative relationship between vertical individualism and KS behaviour

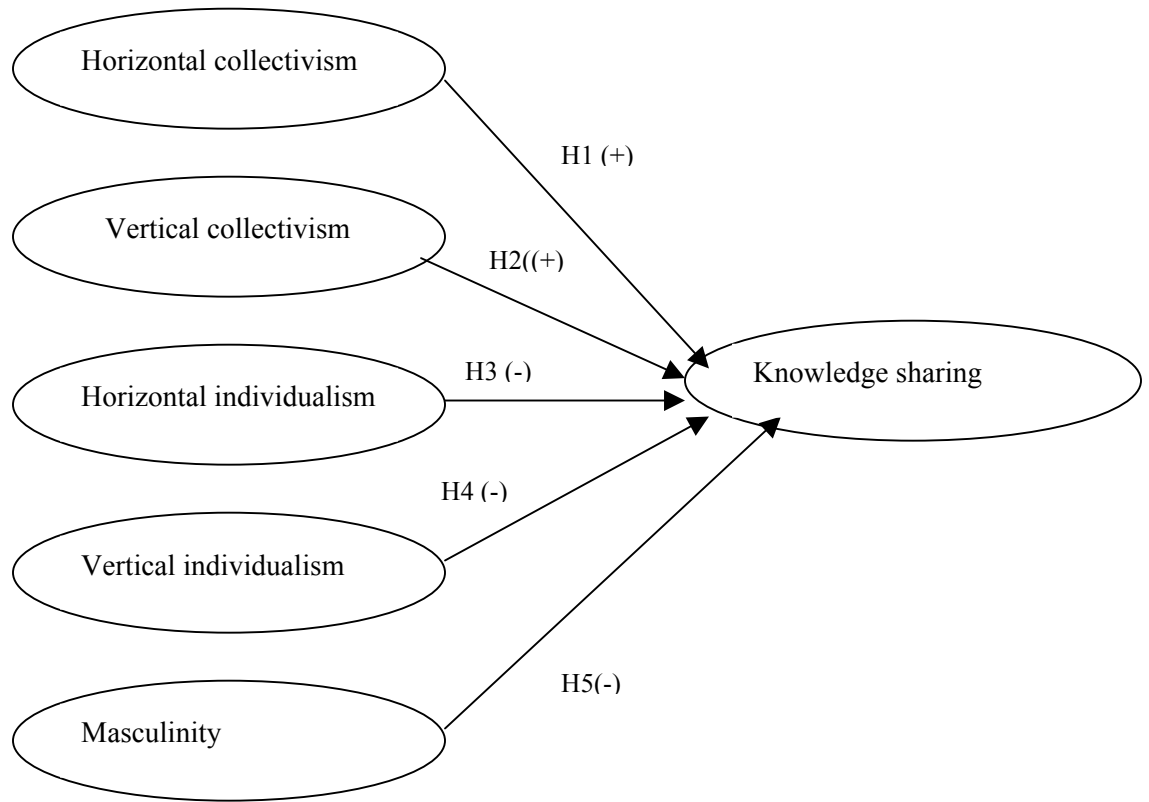
Masculinity

Masculinity denotes “the extent to which the dominant values in society are ‘masculine’ that is, assertiveness, the acquisition of money and things, and not caring for others, the quality of life, or people” (Hofstede, 1980, p. 46). The masculine value orientation emphasizes more on masculine values such as achievement, performance, competitiveness (Singh and Matsuo, 2004). Thus, members in a masculine society are more competitive and may be less willing to share knowledge since they may view this as a competitive advantage. This characteristic denotes the individualistic values. So, a masculine person may show high individualistic characteristics. Employees in MNCs may tend to show masculine characteristic since the environment in such firms is very competitive and career advancement is very much based on performance.

H5: Masculinity cultural value has negative relationship with knowledge sharing behaviour

The theoretical framework for this study is depicted in Figure 1. The dependent variable in this research is ‘KS behaviour’ and the independent variables are power distance, vertical collectivism, horizontal collectivism, vertical individualism, horizontal individualism and masculinity. The suggested research model is depicted in Figure I

Figure I
Schematic diagram of the research model



METHODOLOGY

Data collection method

This research employed the survey based methodology to collect data. Drop-off survey method was used to elicit information from executives in the various multinational firms. Sampling strategy followed a few stages where in the first step 32 MNCs were selected randomly from within the Klang Valley where majority of the MNCs in Malaysia are located. Detail addresses of these MNCs were obtained from the Foreign Companies Directory in Malaysia Year Book 2009. 30 questionnaires were distributed to each of the selected MNCs (960 questionnaires). A total of 250 usable questionnaires were returned

giving a response rate of 26%. The list of MNCs that participated in the survey is shown in Table 2 below.

Table 2: Lists of MNCs in the sample

Citi Bank	Glaxo Smith Kline	Nestle	UMW Toyota
Carrier	Mox Linde	Sony	Frost & Sullivan
Siemens	Shell	Erricson	DiGi
British American Tobacco	Hewlard Packard	Panasonic	Nokia
HSBC	Dell	DSKH	UMW Toyota
Avon	Motorolla	Standard Chartered	ABB Sapura
Citi Bank	Balfour Beatty	MSIG	AXA Affin
Ericsson	Qi Services	FWU	Prudentail

Measurement

The items for the constructs were adapted from past studies and measured on a seven point Likert scale (1 strongly disagree, 7 strongly agree). Table 3 lists all the constructs, number of items used to measure them and its source.

Table 3: Constructs and Source

CONSTRUCT	NUMBER OF ITEMS	SOURCE
KS Importance	2	Jain, Sandhu and Sidhu (2007)
KS Behaviour(KSBEHAVIOUR) (Dependent variable)	6	Van den Hooff and de Ridder, (2004).
Horizontal Individualism (HORIND) (Independent variable)	3	Sivadas et al, 2008 (adapted and modified from Triandis, 2005)
Vertical Individualism (VERTIND) (Independent variable)	3	Sivadas et al, 2008 (adapted and modified from Triandis, 2005)
Horizontal Collectivism (HORCOLL) (Independent variable)	4	Sivadas et al, 2008 (adapted and modified from Triandis, 2005)
Vertical Collectivism (VERTCOLL) (Independent variable)	4	Sivadas et al, 2008 (adapted and modified from Triandis, 2005)
Masculinity (MASC) (Independent variable)	4	Yoo et al, 2001 (CV SCALE)

To test the five hypotheses developed earlier, a multiple regression model is employed. The regression model is shown below:

$$\text{KSBEHAVIOUR} = \beta_0 + \beta_1\text{HORCOLL} + \beta_2\text{VERTCOLL} + \beta_3\text{HORIND} + \beta_4\text{VERTIND} + \beta_5\text{MASC} + e$$

Factor Analysis

Exploratory factor analysis was conducted to assess the factor structure. The correlation matrix of the 24 items (18 items for independent variables (IVs) and 6 for Dependent Variable (DV)) was obtained. The results indicated that factor analysis can be conducted as the KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy was 0.845. The Bartlett test of sphericity was significant and the KMO measure of sampling adequacy is greater than 0.6. Factor analysis with principal axis factoring method and varimax rotation was used to cluster the 18 items measuring the independent variables (CV) and 6 items measuring the dependent variables (KS behaviour) into several meaningful factors. In order to control the number of factors extracted, a minimum Eigen value of one (1) was used in the factor analysis. Factors with Eigen value less than one were considered insignificant and were excluded. Only items with factor loading above 0.4 were retained (Hair et.al, 1998). Varimax orthogonal rotation was then used to group variables with large loadings (correlations) for the same factors so that each factor will be represented by a specific cluster of items. Varimax rotation would also ensure that the factors produced are independent and unrelated to each other.

The factor analysis for CVs generated eleven (11) factors as solution with a total cumulative % of variance of 63%. Only five (5) factors were found to have a meaningful relationship and therefore the factors were retained and interpreted. One item each from vertical collectivism construct and masculinity construct was omitted since they were

found not to fall under their proposed respective group. These factors are depicted in Table 4.

F1: HORIZONTAL COLLECTIVISM (HORCOLL)
 F2: VERTICAL COLLECTIVISM (VERTCOLL)
 F3: HORIZONTAL INDIVIDUALISM (HORIND)
 F4: VERTICAL INDIVIDUALISM (VERTIND)
 F5: MASCULINITY (MASC)

Table 4: Rotated Factor Matrix (factor structure of IVs)

ITEM	F1	F2	F3	F4	F5
1. The well being of my co-workers is important to me	0.776				
2. I feel good when I cooperate with others	0.621				
3. My happiness depends very much on the happiness of those around me	0.516				
4. If a co-worker gets a prize I would feel proud	0.659				
5. I would do what would please my family even if I detested the activity		0.758			
6. I usually sacrifice my self interest for the benefit of my group		0.627			
7. I would sacrifice an activity that I enjoy very much if my family did not approve it		0.557			
8. I am a unique individual			0.813		
9. I enjoy working in situations involving competition with others			0.657		
10. I often do "my own thing"			0.469		
11. Competition is the law of nature				0.718	
12. I enjoy working in situations involving competition with others				0.645	
13. Without competition it is not possible to have a good society				0.684	
14. Men usually solve problems with logical analysis; women usually solve problems with intuition					0.829
15. There are some jobs that a man can always do better than a woman					0.458
16. Solving difficult problems requires an active, forcible approach, which is typical of men					0.717

The factor analysis for KS behaviour (DV) generated three (2) factors as solution with a total cumulative % of variance of 63%. The two factors that provided meaningful relationship was retained and interpreted. The factor is depicted in Table 5.

F6: KS BEHAVIOUR (IN GROUP)

F7: KS BEHAVIOUR (OUT GROUP)

Table 5: Table 5: Rotated Factor Matrix (factor structure of DV)

ITEM	F7	F8
When I've learnt something new, I see to it that colleagues in my department can learn it as well	0.624	
I share the information I have with colleagues within my department	0.886	
I share my skills with colleagues within my department	0.850	
When I've learnt something new, I see to it that colleagues outside of my department can learn it as well		0.747
I share the information I have with colleagues outside of my department		0.855
I share my skills with colleagues outside of my department		0.788

Reliability Analysis

A Cronbach coefficient alpha test was conducted on all the seven factors (5 IVs and 2 DV) to test the reliability of all its item variables. This was to determine the internal consistency of the scale used. The values of Cronbach Alpha coefficient are depicted below in Table 6. All the dimensions for cultural values and knowledge behaviour were found to have alpha coefficient values of greater than 0.6 which is an acceptable level of reliability (Hair et al., 1998).

Table 6: Reliability Statistics

FACTORS	CRONBACH ALPHA
CULTURAL VALUES	
F1: HORIZONTAL COLLECTIVISM (HORCOLL)	0.756
F2: VERTICAL COLLECTIVISM (VERTCOLL)	0.691
F3: HORIZONTAL INDIVIDUALISM (HORIND)	0.652
F4: VERTICAL INDIVIDUALISM (VERTIND)	0.757
F5: MASCULINITY (MASC)	0.735
KS BEHAVIOUR	
F7: KS BEHAVIOUR IN GROUP	0.806
F8: KS BEHAVIOUR OUT GROUP	0.856

DATA ANALYSIS AND RESULTS

Participant characteristics

The study population consisted of senior executives employed in selected MNCs around Klang Valley, Malaysia (where most MNCs are located). Senior executives were selected since they were more familiar and are involved in KS activities. More than 80% of the respondents were less than 40 years of age. There were equal male and female employees in the sample. In terms of ethnicity, Chinese were the majority representing about 51% of the sample followed by Malays 27% and Indians about 22%. This reflected the typical distribution of employees in MNCs in Malaysia. Malays, although are majority in terms of population, are most employed in the public sector. In terms of education, more than 80% had tertiary education. Majority of the respondents completed their tertiary education locally. About 18% of the respondents held senior management position in their firms followed by 35% employed at the middle management level and another 47% at the junior management level.

Multiple regression analysis

Multiple linear regressions were employed to test the relationship between CVs and KS behaviour. The regression was run separately for the three ethnic groups. Table 8 and 9 showed the summarized results of the multiple regression analysis.

Table 8: Relationship between CVs and KS behaviour (DONATING in group)

Independent Variables	CHINESE(N= 127)			MALAYS (N= 69)			INDIANS (N= 54)		
	Beta	t-value	p-value	Beta	t-value	p-value	Beta	t-value	p-value
Horizontal Collectivism	.367	4.450	.000*	.306	2.269	.027*	.586	4.342	.000*
Vertical Collectivism	-.075	-.850	.397	.037	.262	.794	.228	1.661	.103
Horizontal Individualism	-.040	-.458	.648	-.029	.206	.837	-.162	-1.310	.197
Vertical Individualism	-.274	2.983	.003*	-.106	.730	.468	-.183	-1.355	.182
Masculinity	-.174	-2.156	.033*	-.037	-.285	.777	-.113	-.923	.361
	R ² = 0.247, F= 7.928			R ² = 0.123, F= 4.775			R ² = 0.362, F= 5.455		
	Sig = 0.000 *p<0.01			Sig = 0.000 *p<0.01			Sig = 0.000 *p<0.01		
Dependent Variable: KS BEHAVIOUR DONATING (IN GROUP)									

The results in Table 8 show that cultural values have significant influence on ‘in group’ KS behaviour for all ethnic groups. However, for Indian employees the impact of cultural values on ‘in group’ KS behaviour is the largest. For Indian employees, 36% of the variation on ‘in group’ KS behaviour is explained by cultural values. For Chinese employees 25% of the variation on ‘in group’ KS behaviour is explained by cultural values. For Malay employees, only 12% of the variation on ‘in group’ KS behaviour is explained by cultural values. A detail examination of the cultural dimensions reveals that, horizontal collectivism had significant positive influence on ‘in group’ KS behaviour for all three ethnic groups. Thus, H1 is supported. Vertical collectivism also had positive effect on ‘in group’ KS behaviour for the Malays and Indians but the effect is insignificant. For Chinese employees, the impact of vertical collectivism is in fact negative although insignificant. H2 is thus not supported. H3 is also not supported and only has directional support whereby horizontal individualism was found to show negative effect on ‘in group’ KS behaviour across all ethnic groups. H4 on the other hand

was supported for Chinese employees. Vertical individualism was found to show negative significant effect on ‘in group’ KS behaviour. H5 was also not supported. Masculinity only had directional support whereby it showed negative influence on ‘in group’ KS behaviour across all ethnic groups.

Table 9: Relationship between CVs and KS behaviour (DONATING out group

Independent Variables	CHINESE (N=127)			MALAYS(N=69)			INDIANS(N=54)		
	Beta	t-value	p-value	Beta	t-value	p-value	Beta	t-value	p-value
Horizontal Collectivism	.221	2.498	.014*	.283	2.271	.027*	.378	3.099	.003*
Vertical Collectivism	.117	1.241	.217	.153	1.171	.246	.571	4.603	.000*
Horizontal Individualism	-.138	-1.489	.139	-.120	.913	.365	-.114	-1.016	.315
Vertical Individualism	-.184	1.872	.044*	-.337	-2.517	.014*	-.334	-2.738	.009*
Masculinity	-.063	-.733	.465	.182	1.498	.139	.112	1.017	.314
	R ² = 0.137, F= 3.826			R ² = 0.251, F= 4.213			R ² = 0.479, F= 8.843		
	Sig = 0.003 *p<0.01			Sig = 0.002 *p<0.01			Sig = 0.000 *p<0.01		
Dependent Variable: KS BEHAVIOUR (DONATING OUTGROUP)									

The results in Table 9 again show that cultural values have significant influence on ‘out group’ KS behaviour for all ethnic groups. Again, for Indian employees, the impact of cultural values on ‘out group’ KS behaviour is the largest. For Indian employees, 48% of the variation on ‘out group’ KS behaviour is explained by cultural values. For Chinese employees 13% of the variation on ‘out group’ KS behaviour is explained by cultural values. For Malay employees, 25% of the variation on ‘out group’ KS behaviour is explained by cultural values. A detail examination of the cultural dimensions reveals that, horizontal collectivism had significant positive influence on ‘out group’ KS behaviour for all three ethnic groups. Thus, H1 is supported. For Indian employees, H2 is also supported whereby vertical collectivism was shown to have positive significant effect on

‘out group’ KS behaviour. H2 is not supported for Malay and Chinese employees although directional support was there. H3 is also not supported and only had directional support whereby horizontal individualism was found to show negative effect on ‘in group’ KS behaviour across all ethnic groups. H4 on the other hand was supported for all ethnic groups. Vertical individualism was found to show negative significant effect on ‘out group’ KS behaviour for all ethnic groups. H5 was not supported. In fact Masculinity only had directional support whereby it showed negative influence on ‘in group’ KS behaviour for Chinese employees. For Indians and Malays, it had positive effect.

Discussion and Conclusion

The main aim of this study was to examine the impact of CVs on KS behaviour among the three ethnic groups. This research found interesting and mixed results. This research shows that CVs are important factors influencing KS behaviour and there exist differences across the three ethnic groups. Cultural values seems to have greatest impact on ‘in group’ and ‘out group’ KS behaviour among Indian employees. For Indian employees, 48% of the variation on ‘out group’ KS behaviour and 36% of the variation on ‘in group’ is explained by cultural values. When we compare the Chinese and Malay employees, cultural values have more impact for the Chinese with regards to ‘in group’ KS behaviour. Horizontal collectivism was found to have positive significant effect on both ‘in group’ and ‘out group’ KS behaviour for all three ethnic groups. This finding verified and supported past findings by Wolfe and Loraas (2008). However, vertical collectivism only had significant positive effect on ‘out group’ KS behaviour among

Indian employees. This shows that high power distance (vertical collectivism) that exists among employees may be a barrier to encourage KS within groups. This finding was against past findings by Wolfe and Loraas (2008). The negative directional effect of horizontal individualism on 'in group' and 'out group' KS behaviour supports past findings by Wolfe and Loraas (2008). The negative significant effect of vertical individualism on 'out group' KS behaviour also supported past research by Wolfe and Loraas (2008). In a vertical culture, people may hoard knowledge since the environment is such that it encourages competition and people accept status differences and inequality becomes a norm. However, it can be argued that the environment in MNCs may not show such elements due to the existence of a corporate culture that binds its employees together towards achieving long run goals of the organisation. So, this may be the reason why the results show insignificant effect for some ethnic groups with regards to 'in group' KS behaviour. The impact of Masculinity was also mixed where for some ethnic group it was positive and for others it was negative. This was against the theoretical proposed hypotheses although the results were both insignificant. As mentioned earlier, organisational culture in MNCs may influence employees having masculine characteristics to share knowledge. Knowledge sharing practices in MNCs may also break down the high power distance barriers that exist between employees.

Theoretical implication

This research has provided both theoretical and practical implication to the literature on cross cultural studies and knowledge management. Theoretically, this empirical research has provided some interesting insights on the relationship between cultural values and knowledge sharing in MNCs. Research on the impact of cultural values on KS behavior

must take into consideration the differences between cultural orientations among various ethnic groups. The findings from this research clearly reveal that there exist significant variation in the impact of cultural values on KS behavior between the Malays, Chinese and Indians. This research also shows that understanding and studying the impact of cultural values on KS behavior must be done at the individual level and not aggregate level (national level) especially in countries where a large number of employees come from diverse ethnic groups. This study also reveals that significant variation exist on the impact of cultural values on KS behavior when knowledge sharing is examined within groups and outside of groups. This research is also unique in the sense that it employed recently developed scales to measure cultural values (Sivadas et.al, 2008; Yoo et al, 2001) which showed higher psychometric properties as compared to the initial scales.

Managerial implication

The findings from this research will provide managerial implication to further enhance KS in multinational organizations. KM and Human Resource practitioners can use these findings in their recruitment policies. New selection methods can be introduced to identify cultural values of prospective employees which can be used in the selection and recruitment of new staff. MNCs planning to develop KM practices must make sure that there is proper organizational culture and climate within the organization that encourages KS among employees. Employees may have different cultural values and it is vital that the overall organizational culture is able to mitigate such differences through the development of shared goals and visions.

Future research direction and limitation

Future studies should be extended to study the impact of cultural values on KS behavior among employees of different multinational subsidiaries that are dispersed across global boundaries. This study shows that demographic factors such as cultural values among ethics groups are important antecedents influencing KS behavior. Future studies should also look into the impact of other demographic and personal factors such as gender, age, occupation and its impact on KS behavior. Future studies should also look into the moderation effect of organizational culture on the relationship between individual cultural values and KS behavior. This research has a few limitations. Firstly, the sample size is quite small compared to the number of MNCs in Malaysia. There are about 1700 MNCs in Malaysia and in this research we only covered 32. Secondly, the sampling was also confined to the Klang Valley area. Therefore, this makes it difficult to generalize the findings from the research.

Knowledge is today one of the most important factor influencing the success of firms.

Encouraging KS among employees' remains an important task for MNCs. It is important for MNCs to be able to identify the factors influencing KS behaviour in their organizations. This research has identified culture as an important factor influencing KS behaviour. As such, understanding cultural values within diverse ethnic groups and societies remain an important task ahead for MNCs in their future undertakings.

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