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Groupware and National Culture: a qualitative inquiry

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Abstract

This research examines the impact of collaborative technologies on group work processes for groups from Malaysia, which is traditionally known as a society with high Collectivism and Power Distance. Triandis (1994) defines collectivism as greater emphasis on the views, needs, and goals of the in-group rather than oneself. Hofstede (1980) defines Power Distance as the extent to which the less powerful members of institutions and organisations accept that power is distributed unequally. The present study included two parts. The first part compared the supported groupwork of the groups from Malaysia as a representative of the' East' culture with the supported groupwork of groups from Australia as a representative of the' West' culture. The second part compared the supported and unsupported groupwork for groups from Malaysia. The first part used three different tasks with different degrees of structure and examined the possibility of observation of the cultural differences based on the qualitative analysis of the groupwork discussions in a supported environment. The second part examined the impact of GSS on groupwork for groups from Malaysia. The study used a qualitative content analysis to reveal the cultural values involved in their group work processes. The findings suggest a clear difference between the groupwork conducted in two different group work environments (supported and unsupported).

Keywords

National Culture, Qualitative Analysis in IS, GSS

COMPUTER MEDIATED COMMUNICATION (CMC) AND GLOBALISATION

Globalisation has presented organisations with the challenge of dealing with cultural diversity, as businesses set up foreign operations in multicultural societies. The need for better communication between different stakeholders and the successful implementation and use of different types of collaborative computer technologies in different organisations around the world makes it necessary to adjust the assumptions of some of previous organisational research. It has been suggested that technologies such as Group Support Systems (GSS) are not so interesting in their own right as they are a new opportunity for studying old questions about the role of technology in organisations (DeSanctis, 1993). One of these research questions would be the question of differences in group decision making across different national cultures. Cultural studies of supported group work enables us to match the style of decision making with the right type of GSS or suggest different types of GSS for different types of task in each culture, as well as providing the required knowledge to predict the final decision in a supported environment.

It is believed by many authors (e.g., Lam, 1997; Panko, 1992) that a significant amount to decision making in organisations is performed in group meetings, and non-productive meetings can have major consequences for the success of organisations.

GSS are a blend of technical and social facilities and they are believed to influence the social behaviour of a group and to improve group performance (Watson *et al*., 1994). Group Support Systems have attracted attention from researchers and practitioners as potentially improving organisational effectiveness through their abilities to reduce communication barriers, increase productivity, and facilitate decision making activities (Williams and Wilson, 1997; Watson *et al*., 1994). The role of GSS in the commercial environment has been addressed by different authors (see Briggs *et al*., 1998; Vogel *et al*., 1990), and there are some examples of successful implementations of such systems in firms (see Beauclaire, 1989; Dennis *et al*., 1990). Numerous laboratory and field studies (Pinsonneault and

Kramer, 1989; Valacich *et al*., 1991; Vogel *et al*., 1990) suggest how GSS can facilitate group interactions and improve group performance.

In a study by Fjermestad and Hiltz (1997) 163 studies in the area of Group Support Systems were examined. From these studies that start from 1986 and earlier till 1996, only three studies have addressed culture as a variable. Two of these studies addressed the use of GSS in Singapore (Watson *et al*., 1994) as compared to the use of these technologies in the U.S., and the other one has compared the use of GSS in Mexico (Mejias *et al*., 1996) as compared to the use of these technologies in the U.S. Both studies are examining the degree of consensus and number of original comments. Both studies used idea-generation tasks. The first two studies suggested that there were more consensuses among the members of groups. The questions in these studies were focused towards some hypotheses based on Hofstede's findings (1991). For example considering the findings of Hofstede that the Chinese were collectivist, would they have a better consensus compared to the U.S. participants? In the other study Mexican participants were similarly compared to the U.S. participants. In addition there have been studies on the impact of social forces on supported meetings (Watson *et al*., 1994) and the impact of GSS on status differences in group decision making (Tan, *et al*., 1999).

After more than a decade of research in the area of GSS and collaborative technology many studies have indicated changes in group performance with the use of GSS. Especially evident changes are change in the number of comments issued during groupwork sessions, and the time to reach consensus on a final decision. However there is considerably less evidence of any impact of GSS upon social behaviour.

CULTURAL VALUES AND DECISION MAKING

Some organisation research (e.g., Wiersema and Bird, 1993) list national background as an individual characteristic that captures beliefs. In addition there are some cross-cultural psychological studies that have shown that national culture can shape individuals' values and beliefs (e.g., Weeks *et al*., 1982). Differences between the two national cultures are expected not only to influence the manner in which their members seek out information that they need to perform their organisational tasks (e.g., Pineda and Whitehead, 1997), but also in their decision making process (Yates and Lee, 1996).

Although there has been much research examining decision making in different disciplines, using research methodologies as laboratory studies, observation or interviews, or other research methodologies, still many authors refer to the decision making process as the 'black box'. One way of dealing with the concept of black box has been suggested to be the use of decision makers' individual characteristics and use these as the dependent variables in decision making research. It has also been suggested to assume that the decision maker has a cognitive base based on their values and beliefs and standards which would be referred to in collecting and processing of information required during the decision making process (Markoczy, 1997).

One of the reasons for the decision making research to be difficult has been claimed by Yates and Lee (1996) to be demonstrated in the phrase 'favourable outcome'. What is considered to be as favourable by one national culture would not be necessarily considered as such for another culture. Plous (1993) claimed that what any decision maker 'sees' as significant can differ markedly from what another regards as significant. It is not only the end result, the decision outcome, which can be perceived differently by different people, even the representation of the problem to be decided is different for different decision makers. Yates and Lee (1996) define a 'representation' as the decision maker's personal characterisation of the given situation. It specifies what is taken into account by the decision maker, and what is ignored. Representations are based on values, which differ in important ways (Schwartz, 1992). For example, there are cultures where 'tradition' and honouring parents and elders are much more important values than 'pleasure' or an 'exciting life'. Values work as filters for processing the information received and also shape what Triandis (1994) called the 'glasses through which we see the world' or what Plous (1993) called 'frame of mind', against which different alternatives are judged.

In different attempts at defining decision making, authors have suggested different lists of decision making processes (e.g., Boulding, 1975; Janis and Mann, 1977). All these processes including 'representation' and evaluation of different alternatives are readily influenced by innumerable conditions, including the abstract concept 'culture' (Plous, 1993; Yates and Lee, 1996).

The process of receiving and interpreting information involves perception. A review of psychological studies of perception shows that the modern view of perception brings out the active role that a person plays in perception. Communication theories suggest that perception be influenced by a number of psychological factors, including cultural values. The tendency for people's perception to be influenced by values and attitudes is known as selective perception (Plous, 1993). Cultural authors agree with the concept of selective perception. Triandis (1994) believes that culture influences the way humans select, interpret, process, and use information. Communication and cultural studies have included values and cultural expectations of the decision makers as determining factors of selective perception.

PREVIOUS CULTURAL STUDIES

In order to relate the main themes resulting from the content analysis to the cultural values it was necessary to review some of the previous cultural studies and their suggested cultural factors (dimensions).

Hofstede

The labels Hofstede (1980) selected for the four dimensions together with their interpretations are as follows:

- Power Distance: *Hofstede (1980:145) defines' Power Distance' as' … the extent to which the less powerful members of institutions and organisations accept that power is distributed unequally'. Power distance refers to the extent to which members of a society accept unequal distribution of power in institutions and organisations.*
- Uncertainty Avoidance: *The extent to which members of a society feel threatened by uncertainty is called' Uncertainty Avoidance' (Hofstede, 1980).*
- Individualism/ Collectivism: *Hofstede (1980) defines individualism as the relationship between the individual and the collectivity that prevails in a given society.*
- Masculinity versus Femininity: *Hofstede (1980) states that the predominant socialisation pattern is for men to be more assertive and for women to be more nurturing. His review of the work goals indicated a near consistency on men scoring advancement and earnings as more important, and women scoring supervision, social aspects of the job, working conditions, working hours and ease of work as more important (Hofstede, 1980). His calculated scores of Masculinity/ Femininity for only a small group of nations are available, and for this reason they are not included in Diagram 1.*

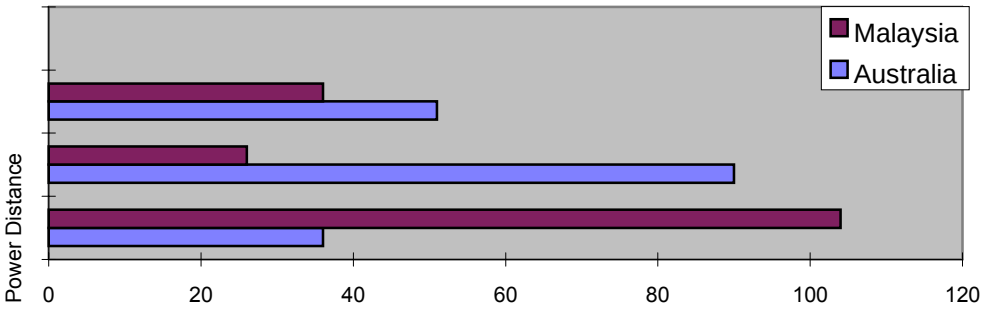

Diagram 1: 3 Cultural factors suggested by Hofstede (1980) for Australia and Malaysia

Schwartz and Bilsky

Schwartz and his colleague suggested seven cultural factors based on a list of 45 values (1992). For each of the samples, the mean importance rating of each of these values was computed. Instead of any statistical method a diagrammatic method called S*mallest Space Analysis* (SSA, suggested by Guttman, 1968) was used to find the cultural factors and their related values. The seven factors suggested by Schwartz and Bilsky (1987) are as follows:

- *Conservatism*: *These are values likely to be important in societies based on close-knit harmonious relations, in which the interests of the person are not viewed as distinct from those of the group. Conservatism values are primarily concerned with security, conformity, and tradition.*
- Intellectual and Affective autonomy (Two Factors): *These are the values likely to be important in societies that view the person as an autonomous entity entitled to pursue his or her individual interests and desires. Schwartz (1994) distinguishes between two different types of Autonomy values*: *a more intellectual emphasis on self-direction and a more affective emphasis on stimulation and hedonism.*
- Hierarchy: *It is suggested by Schwartz (1994) that the preference for Hierarchy emerges closer to conservatism. The value 'humble' falls in this region. This location of humble reinforces the interpretation of the culture-level hierarchy value type as emphasising the legitimacy of hierarchical role and resource allocation.*
- Mastery: *Mastery values promote active efforts to modify one's surroundings and get ahead of other people, whereas Intellectual Autonomy values emphasise flexibility of thought and feeling but not active social behaviour. All the Mastery and Autonomous values, and some of the Hierarchy values, presume the acceptance of the individual's pursuit of personal interests as legitimate.*
- Egalitarian commitment: *These are values that express transcendence of selfish interests and are a social commitment that can occur in among equals. Schwartz believes that these values must be present in societies of autonomous individuals to function smoothly.*
- Harmony: *These values are suggested by Schwartz (1994) to emphasise harmony with nature and are supposed to be opposite Mastery (it is also stated earlier by Kluckhohn and Strodtbeck, 1961). Harmony values presume no particular stance regarding the autonomy of the person, but they stand in opposition to value types that promote actively changing the world through self-assertion and exploitation of people and resources.*

The seven factors and their relative importance for participants of Australia and Malaysia in the Schwartz and Bilsky Study are represented in Diagram 2. In this diagram the 'X' axis shows the relative importance of each of the seven cultural factors and the 'Y' axis identifies each of the seven cultural factors.

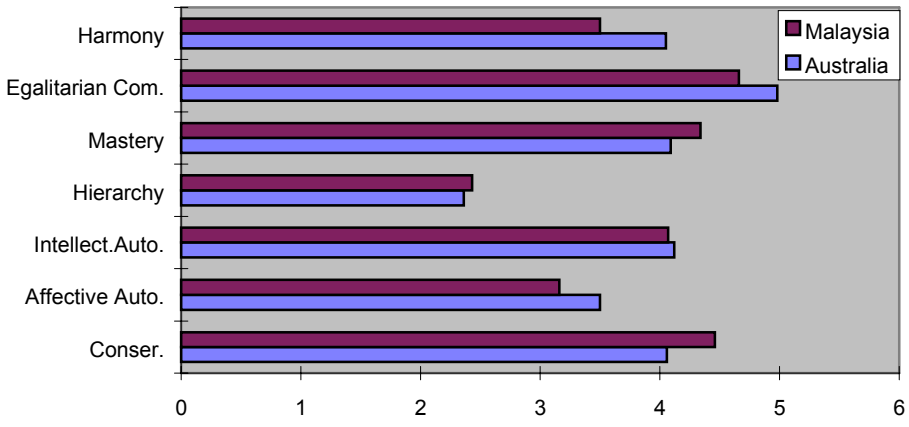

Diagram 2: Schwartz and Bilsky's 7-factor model for Australia and Malaysia

A NEW MODEL

In an earlier part of this study a new 9-Factor model based on a value survey for the two national cultures involved was developed and tested. The nine cultural factors, which resulted, have some factors similar in name with those of Hofstede's but they are different in terms of the values that they represent. These nine factors are as follows:

- The Religious Commitment Factor: *This is the relation of an individual to any ideological system, in this case a religious system, and it admits of different dimensions or types of variation; the individual's acceptance or rejection of the beliefs of the system (*Orthodoxy*), his or her orientation toward other persons with respect to his or her beliefs (*Fanaticism*), and the significance of their beliefs to their self-conception (*Importance*) are just some of these dimensions.*
- The Workplace Preferences Factor*: The workplace variables were adopted from the Hofstede's Hermes study and were actually a part of 14 work goal questions, which were used by Hofstede to measure for the individualism/ collectivism index. The response to these questions should show the degree of importance associated with each case by the participant.*
- The Locus of Control Factor: *The variables in this factor are related to the tendency of the individual to be in control of his or her own life. The locus of control was first developed by Rotter (1966) and numerous versions of the original locus of control have been validated and used in different studies (although not used in cross-cultural studies).*
- The Fatalism Factor: *The variables in this factor are all related to the degree that the individual believes that the good or bad in his or her life is predestined, and how much the individual believes that every occurrence in human existence comes to pass because it was fated to do so.*
- The Traditionalism Factor: *The traditionalism values which are related to the fifth factor of the overall factor analysis are related to a kind of obedience, which although foreign to Western societies, is quite commonly expected in traditionalist societies. The traditionalism values are related to family (spouse, children and parents) and the work relations.*
- The Challenge and Adventure Factor: *The variables in this factor, which is the sixth factor of the overall factor analysis, are more related to readiness to face challenge and adventure. Some of these variables were included in Hofstede's measure of work goals in relation to individualism. The collection of variables on this factor seem to be related to the individual, not necessarily related to work place characteristics. The loading of the variables on this factor are more towards a belief by the individual in personal competence.*
- The Individualism Factor: *The variables on this factor are related to individualism. Some of the variables are symbols of Competitive Individualism as defined by Triandis* et al*. (1993). There are also variables on this factor related to what Triandis* et al*. define as 'Independence' as part of individualism. Although the variables come from different sources, their collection into one single factor validates the significance of this factor.*
- The Value of Privacy Factor: *The three variables in this factor are very much related to the individualism value for privacy and the variables are all positively related to the value of privacy factor. The value of privacy variables are related to the individual's need for personal time and a personal set of friends in family life, and a valuing of the private opinion of the individual in the work place.*
- The Uncertainty Avoidance Factor: *This factor is related to the different methods used by individuals to avoid uncertainty and to reduce the risk of the unforeseen. Three variables are related to sharing the risk with friends, one item is related to choosing a large corporation over smaller ones to avoid the risk of losing a job. The last item is related to planning as yet another way to avoid the uncertainty of the future.*

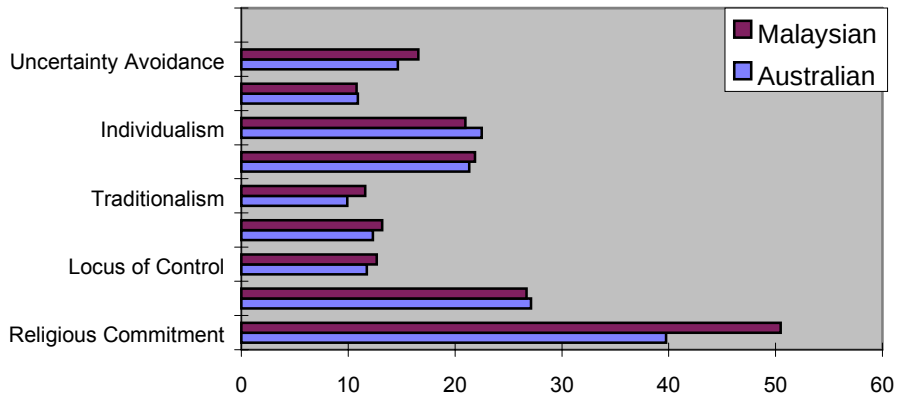

Diagram 3: The comparison of the scores calculated for the two national cultures based on the new 9-Factor Model

THE PRESENT STUDY

The focus of the study was to study the impact of GSS on groupwork processes for Malaysian groups. The study used cultural values referred to by participants from Malaysia in their groupwork sessions as indicators of any change in groupwork process. The study was conducted in two parts:

- *The first part of the study was based on qualitative content analysis of supported groupwork for groups from Malaysia and Australia on three tasks with different degrees of structure. Australia according to Hofstede's findings has the second highest individualism and is considered as the representative of the Western culture in the region. The purpose of this part of the study was to examine the set of cultural values and also to see if cultural values from the two participating national cultures could be distinguished by using GSS in supported environment.*
- *The second part of the study was based on Groups from Malaysia. Half of these groups worked with a task in unsupported environment and the other half worked with the same task in supported environment. The purpose of the study was to see if GSS could make any difference in groupwork processes for groups from Malaysia.*

In each session, the participants were asked to read through the task, select an option, and then give their initial decision with detailed reasons as to why they decided to select this particular option. The requirement of giving enough reasons to make their selected alternative acceptable would encourage the participants to respond to each other's comments. Group members would make their final choice based on a majority vote. In group sessions the researcher acted as a technographer as well as providing any help required by the participants. The Group Support Systems used in these sessions was the word version of GroupSystemV. The system was set up in a conference room with six notebook computers connected together by a Local Area Network.

CONTENT ANALYSIS

Content analysis was selected to address the issues of interest to the present study. As a result the comments were used to find the main values referenced in the decision making process by participants. This method is widely used in social sciences, group behaviour analysis and, recently, in cross-cultural studies (Fiske, 1993) and has proved to give the desired type of the results.

Morse and Field (1995) proposed that the difference between qualitative and quantitative approaches could be seen in the measurement of human performance. The scientific or quantitative method would be interested in feelings, personality and attitudes only to the extent that they influence performance. Researchers such as Sekaran (1984) and Emory

(1985) would advocate the measurement of performance, feelings, attitudes and personality. Qualitative research would be uninterested in measuring these variables but would rather observe the performance of people and draw conclusions.

The resulting data from the supported and unsupported groupwork was for the former a computer print out of all comments keyed into the computer and for the latter a transcribed text of the tape recordings of the discussions of unsupported group sessions. This data was subjected to content analysis.

The data from the group decision-making sessions was closely examined to find any existing patterns in the data. This was to find the existing universal structure in the data, based on which the coding process could then be established. Once the structure of the content analysis was complete, the next step was to use QSR Nudist (qualitative analysis software) to help with the rest of the analysis. It should be noted that although QSR Nudist helps with the process of analysis, the main analysis, including detecting the main themes in comments and finding the relation between these themes and the cultural values was completed before introducing the data into the software.

RESULTS

Three tasks with different degrees of structure were used in the first part of the study to examine the effectiveness of GSS as a vehicle for a cultural study. The importance accorded to each of the cultural factors varied between groups from the two national cultures in supported environment. It was to be anticipated that not all the values relevant to all factors would be referred to by groups of the two national cultures. For the three tasks used in the first part of this study values relevant to 6 factors out of nine seemed to be important: Traditionalism, Religious Commitment, External Locus of Control & Internal Locus of Control, Challenge and Adventure, Uncertainty Avoidance, Individualism. The groups from Malaysia and Australia referred to these six values for the three tasks used in the first part of the study but the extent of reference for each factor is different for different national groups. Diagram 4 shows the comparison between the two national groups.

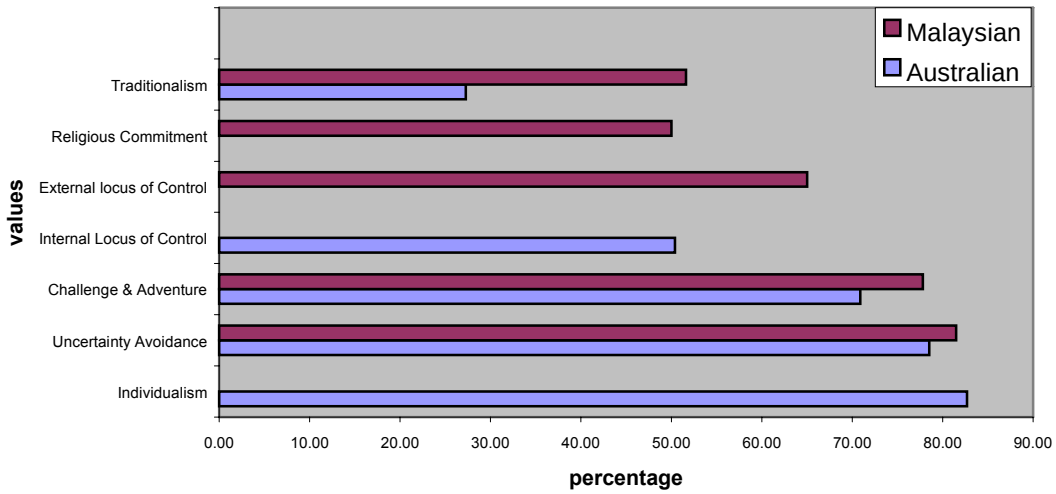

Diagram 4: three tasks & two national cultures (supported)

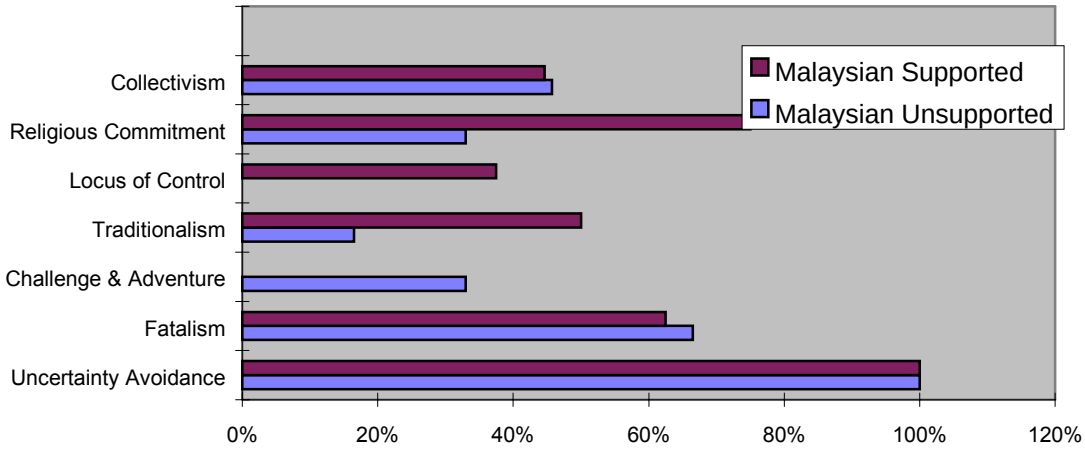

Diagram 5: The Impact of Technology on Groupwork for Malaysian Groups

The particular task for the second part of this study was written as an open-ended question concerning a debate over the value of higher education. For the single task used in this part of the study, participants referred to values relevant to 6 factors out of nine: Religious Commitment, Traditionalism, Locus of Control, Challenge and Adventure, and Fatalism. While the values of these six factors have been at work for this single task but the degree of their reference is different for the two environment (supported versus unsupported). These values and their relation to the factors are as follows:

Duty to God – **Religious Commitment**
Duty towards Country & Society –
Duty towards family – **Traditionalism**
Status –
The ability to make plans work – **Locus of Control**
Willingness to go to faraway places – **Challenge & Adventure**
The belief in luck and fate – **Fatalism**
The willingness to share the responsibility of any decision – **Uncertainty Avoidance**

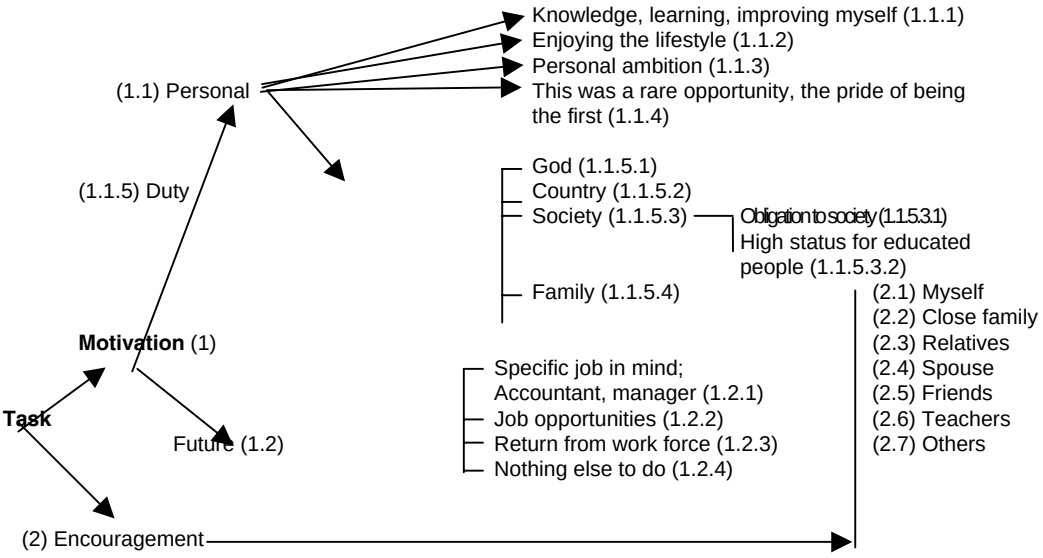

Diagram 6: The main themes used in coding

DISCUSSION

The comments made by Malaysian groups showed significantly higher uncertainty avoidance, religious commitment, and collectivism, than the Australian participants, as well as high traditionalism and external locus of control (Fatalism). Such a set of values would define Triandis's (1994) 'tight' society. The detailed cultural characteristics of Malaysian groups are examined below.

The high score for the Uncertainty Avoidance factor for groups from Malaysia, indicated a willingness to share the decision making process in order to decrease the risks involved. The reason for this interpretation is that three of the five items of the Uncertainty factor are related to sharing the responsibility in a decision making situation.

Triandis (1994) believed that groups in a collectivist society are the basic units of social perception. The high collectivism (or the low individualism) of the Malaysian participants would encourage group decision making in any decision-making situation.

The high traditionalism factor for the Malaysian groups suggested the existence of a set of social regulations for influencing any type of social interaction, including group interactions. This set of regulations includes a respect for seniors and people of high status in the group. Such social regulations could be considered as a restriction in terms of what would be considered proper behaviour by group members in aspects of group decision making, such as turn taking, and willingness to disagree with the suggested alternative of their seniors.

The strong rating accorded to an external locus of control (Fatalism) by the Malaysian participants suggests they may be more likely to engage in risk taking behaviour (Battle and Rotter, 1963), because there is a belief that any consequences would be the responsibility of the superior external forces.

The sum of the above features results in a situation for the Malaysian participants in which, although collectivism and religious commitment encourage the tendency towards group decision-making, the adherence to high traditionalism results in some limitations in group interactions. Malaysian participants are likely to be significantly limited by their social rules concerning group interactions. These limitations may include being obliged to agree with their seniors and refraining from expressing their opinion in group sessions.

To be competitive with other nations in the present global market, the third world nations may need to have more open channels to be creative. They may need to find ways to encourage people with a lower organisational status to voice their opinion without knowingly disagreeing with those in senior positions.

The overall result showed that the findings of the supported mode of groupwork for the Malaysian participants were very close to the findings of their value survey and seemed to be different from the findings of their unsupported groupwork. This could be interpreted to mean that the supported mode provided the opportunity for the participants to refer to their real reasons for selecting an option without fear of the social consequences.

The findings of this study showed that GSS can changes the social behaviour of groups from Malaysia as a representative of societies with high uncertainty avoidance and low internal locus of control. The group discussions pointed to the problem that these groups experienced with unstructured tasks. It seemed that their particular collection of cultural values demand a highly structured group decision making situation. This would in turn necessitate any group support technology to provide the decision making groups with access to an archive of past similar decision making situations, the alternative selected and preferably a mid-term outcome of that decision.

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