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The Impact of Culture on Knowledge Sharing

by

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ABSTRACT

In the new global economy, knowledge is recognised as one of the most valuable organisational assets and an important competitive advantage. Therefore organisations need to concede that knowledge sharing is imperative in order to survive and compete effectively in the global economy. This study examined the extent to which culture impacted the effectiveness of knowledge sharing in an organisation. There were four dimensions of culture identified that influence knowledge sharing namely individualism/collectivism, power distance, masculinity/femininity and uncertainty avoidance.

This research was quantitative in nature. A web based questionnaire was administered to a sample of 96 respondents in top and middle management by means of convenience sampling.

The findings in this study indicate that age, gender and work experience have no influence on the impact of culture on knowledge sharing. It was further found that three out of the four cultural dimensions impacted knowledge sharing positively. They were low individualism and high collectivism, low power distance and low masculinity and high femininity. The fourth cultural dimension uncertainty avoidance was found to be high indicating a negative impact on knowledge sharing. Recommendations for future research include a larger sample size for a more comprehensive study, a comparative study with other chrome manufacturing operations and identifying the necessary tools required to reduce high uncertainty avoidance cultures.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Nirusha Brijball

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CHAPTER ONE

INTRODUCTION AND OVERVIEW OF STUDY

1.1. INTRODUCTION

In the new global economy, knowledge is recognised as one of its most valuable assets and is an important competitive factor. Knowledge is a critical resource in an organisation that is required to ensure and sustain a competitive advantage. Therefore, organisations need to concede that knowledge sharing has to be recognised as an imperative strategic route which businesses have to acquire, in order to survive and compete effectively in the global environment. For companies to participate actively in the global economy they need to initiate ways to share information and create new knowledge.

Drucker (2001) claimed for companies today to sustain competitive advantage they have to effectively manage knowledge. Their success is also dependent on how well the organisation taps into human knowledge (intellectual capital) and how they share it within the organisation and across national borders (Wei, Stankosky, Calabrese, & Lu, 2008; Rivera-Vazquez, Ortiz-Fournier, & Flores, 2009).

Davenport & Prusak (1998) also argued that organisations can no longer rely on their previous successes to ensure a definite future success.

Research has concentrated on factors such as trust, collaboration, open communication, corporate culture and organisational values that has lead to effective knowledge management (De Long & Fahey, 2000; Gold, Malhotra, & Segars, 2001; Ciganek, Mao, & Srite, 2008). Their studies suggested that organisational culture can significantly promote or impede knowledge management initiatives.

However, (Hofstede, 1980) argued that organisations cannot ignore the fact that organisational cultures exist independently of national cultures. Furthermore, distinct qualities and diverse languages arise from different national cultures (Ford & Chan, 2003). These additional factors need to be evaluated by organisations so that they can influence its capability in achieving successful knowledge sharing.

Gupta & Govindarajan (2000) in their research regarding knowledge transfer between units of multinational corporations discussed the various factors in international knowledge sharing. There have been several other studies that explicitly concentrated on cultural factors that influence knowledge management and transfer (Chow, Deng, & Ho, 2000; Ford & Chan, 2003; Hutchings & Michailova, 2004; Hauke, 2006; Minbaeva, 2007), however, no previous research was identified in South Africa. This was later confirmed by (Tong & Mitra, 2009; Wilkesmann, Fischer, & Wilkesmann, 2009) in their studies which demonstrated that knowledge sharing, learning in organisations and communication are greatly influenced by cultural values of

individual employees. As a result it is apparent that the four cultural dimensions derived by (Hofstede, 2001) namely, individualism versus collectivism, power distance, uncertainty avoidance and masculinity versus femininity; either impede or promote knowledge sharing in organisations.

Studies have been conducted in countries that are rapidly moving towards stability such as Russia, China and Turkey (Hutchings & Michailova, 2004; Nayır & Uzunçarşılı, 2008; Tong & Mitra, 2009) by gradually building up businesses; taking steps towards knowledge sharing both internally within the organisation and externally to clients, customers and suppliers (Burke, 2010). There is very little research concentrating on South Africa and the impact that culture has on knowledge sharing. King, Kruger, & Pretorius' (2007) study of knowledge sharing in South Africa found that the diversity of cultures in South African companies acted as barriers to knowledge sharing and focused only on an organisational context.

More research is required in South Africa to focus primarily on the impact of national culture on knowledge sharing. Consequently, this study investigates whether the four dimensions of culture will promote or impede knowledge sharing in organisations.

1.2. RESEARCH OBJECTIVES

The following objectives have been formulated:

- To obtain an understanding of employees perceptions of knowledge sharing
- To evaluate the extent to which the cultural dimensions influence the organisation
- To assess the impact that culture has on knowledge sharing:
 - To assess the extent to which individualism/collectivism influence knowledge sharing.
 - To assess the extent to which power distance impacts on knowledge sharing.
 - To assess the extent to which uncertainty avoidance affects knowledge sharing.
 - To assess the extent to which masculinity/femininity influences knowledge sharing.
 - To assess the extent to which long term short term orientation impacts knowledge sharing.

1.3. RESEARCH AIM

The fundamental aim of this research was to answer the question: “*To what extent can culture have an impact on the effectiveness of knowledge sharing in organisations in general?*” The research has been built on the theoretical

framework presented and investigated the variables identified in the literature. Primary data was obtained by administering an online questionnaire among a selection of employees in an organisation. From the findings, suitable recommendations were made to address the impact of culture on knowledge sharing.

1.4. CHAPTER CONCLUSION

This chapter discussed the research problem and the importance as to why the study has to be accomplished, together with the objectives and research aim.

The next chapter (chapter 2) includes a review of the literature which incorporates an in depth discussion in the areas of knowledge sharing and culture.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter exhibits an overview of the literature applicable to knowledge sharing and culture. The literature review begins by addressing the first main theme, knowledge sharing. The concept of knowledge is defined by different authors to obtain an understanding of the term, in the context of knowledge sharing. The term knowledge sharing is then described by several authors, after which, is a discussion on why knowledge sharing should be utilised and its importance to businesses today.

The second main theme culture is then defined by various authors. The literature then moves onto a brief overview of organisational culture and its impact on knowledge sharing. National culture is then examined where an in-depth discussion on the various dimensions of culture are discussed. Herein are many views and arguments by authors on the subject of national culture in terms of its different dimensions and how it influences knowledge flow between individuals (Gupta & Govindarajan, 2000; Ford & Chan, 2003).

2.2. KNOWLEDGE SHARING

2.2.1. The Concept of Knowledge

Knowledge has become one of the factors of micro competitiveness, which can be characterised as the ability of a company to increase productivity and develop new products and markets in terms of, more fierce competition (Hauke, 2006). Therefore, it is crucial for enterprises that want to reach a competitive advantage to have good knowledge transfer and a culture promoting knowledge sharing among employees (Rivera-Vazquez, Ortiz-Fournier, & Flores, 2009).

Davenport and Prusak (1998, p. 5) define knowledge as:

“A fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers”.

As highlighted by CEN (2004, p.10) the definition of knowledge is:

“A set of data and information (when seen from an Information Technology point of view), and a combination of, for example know-how, experience, emotion, beliefs, values, ideas, intuition, curiosity, motivation, learning styles, attitude, ability to trust, ability to deal with complexity, ability to synthesise, openness, networking skills, communication skills, attitude to risk and entrepreneurial spirit to result in

a valuable asset which can be used to improve the capacity to act and support decision making”.

According to (Davenport & Prusak, 1998) knowledge is unlike information, it is a function of a particular perspective of an individual and it is all about beliefs, values, attitudes and commitment.

Harris (2001) described knowledge as a resource that is contained within the minds of employees, and is perhaps the only resource that when utilised can augment the value of other capital and does not diminish in time. For a company to maintain a competitive advantage it must create, share and utilise the knowledge it possesses (Nayir & Uzunçarşılı, 2008). There are two types of knowledge that an individual or an organisation can have i.e. tacit or explicit knowledge. (Nonaka, 1994) pointed out that explicit knowledge is easily articulated, coded and transferred whereas tacit knowledge is more difficult to articulate as it has a personal quality to it.

A second classification of knowledge as described by (Nonaka, 1994) is individual and organisational knowledge. Organisational knowledge is developed and created within groups of individuals (Alavi & Leidner, 2001), which leads to a gap between the knowledge in individuals and the organisation. Ford & Chan (2003) mention that for organisations to gain the advantage of knowledge management, they need to capitalise on an individual's knowledge and turn as much of it into organisational knowledge. According to

(Zakaria, Amelinckx, & Wilemon, 2004, p. 16) “knowledge is filtered through cultural lenses, whether we are aware of such filters or not”.

As a result it has become clear that knowledge originates within an individual and is an important resource for organisations to benefit from for maintaining competitive advantage. From the literature, it is apparent that the way an individual thinks and interprets information is partially influenced by his or her beliefs and values.

2.2.2. What is Knowledge Sharing?

An examination of the literature that concentrates on knowledge sharing reveals that there are many facets to understanding exactly what knowledge sharing is.

Gupta & Govindarajan (2000) described knowledge sharing as a process of identification, outflow, transmission and inflow of knowledge in an organisation. Lee (2001, p. 324) explained knowledge sharing in terms of “activities of transferring or disseminating knowledge from one person, group, or organisation to another.”

Furthermore the concept of knowledge sharing was defined by (Bartol & Srivistava, 2002) as involving the sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation’s performance. This exchange can take place both informally in places like the corridor and formally in meetings, seminars and presentations (Bircham, 2003). Bock & Kim (2002)

described it as the transmission or distribution of individual knowledge in an organisation. As discussed earlier (Zakaria et al, 2004) were of the opinion that the knowledge of an individual is filtered through cultural lenses. Usoro & Kuofie 2006, p. 16) validated this view in their definition of knowledge sharing:

“Knowledge sharing is generally conceived as an exchange (of knowledge) from a giver to a receiver. The receiver is not passively taking knowledge. The receiver’s perception of what is shared is influenced, inter alia, by his or her cultural background”.

Ipe (2003) reinforced the point discussed by (Lee, 2001) that knowledge sharing is a process by which the knowledge held by an individual is transformed into a form that can be understood, absorbed and utilised by other individuals. In addition, (Ipe, 2003) goes on further to assert that sharing implied that the process of presenting individual knowledge in the form that can be used by others involves some conscious action on the part of the individual who possesses the knowledge. This process is essential in translating individual knowledge into organisational knowledge.

Davenport (1997) defined sharing as a voluntary act. This was confirmed by (Ford & Chan, 2003) in their study as they found that sharing of solutions between subordinates in an organisation was primarily a voluntary activity.

Whenever knowledge sharing occurs (Ford & Chan, 2003) were of the view that knowledge flowed between two individuals or from an individual to a team of

individuals. They made mention of various ways in which knowledge flows occur such as meetings, email or other versions of documentation (i.e. intranet web pages). Another observation made by (Ford & Chan, 2003) in their study was that knowledge flowed in different directions such as from top to bottom, across co-workers and bottom up. Furthermore they pointed out that problem solving was an example of knowledge sharing. Jackson, Chuang, Harden, & Jiang (2006) are of the view that knowledge sharing, as a knowledge-centered activity, is one of the fundamental means through which employees can play a significant part in the innovation, knowledge application and ultimately the competitive advantage of an organisation.

Knowledge sharing was defined by (Wei, Stankosky, Calabrese, & Lu, 2008) as a process consisting of one's knowledge being transferred and provided to others through a range of methods. These subject matter specialists said this process is capable of allowing numerous individuals to benefit from the expert knowledge of a few, and in turn leverage the power of individual knowledge to become the whole organisational power.

Finally (Rivera-Vazquez et al, 2009) defined knowledge sharing as a process where individuals mutually exchange both tacit and explicit knowledge to jointly create a new knowledge. It is evident that there are several dimensions to understanding exactly what knowledge sharing is. However for the purpose of this study the definition of knowledge sharing by (Bartol & Srivistava, 2002) will be adopted.

2.2.3. Why make use of Knowledge Sharing?

Knowledge sharing creates opportunities to maximise an organisation's capability to generate solutions and efficiencies that provide a business with a competitive advantage (Reid, 2003). Research has revealed that knowledge sharing is positively related to team performance, a decline in production costs, firm innovation capabilities, firm performance including sales growth and a much quicker completion of new product development projects (Arthur & Huntley, 2005; Collins & Smith, 2006; Cummings, 2004; Hansen, 2002; Lin H.-F. , 2007; Mesmer-Magnus & DeChurch, 2009).

Jackson et al, (2006 p. 31) said that "No individual knows everything, and no individual can keep up with all of the relevant new knowledge continually being created". Knowledge sharing among employees conserves resources and frees up time for people to apply the knowledge they have. Hence, they point out that another benefit of knowledge sharing is efficiency.

Knowledge sharing practices can bring a great deal of benefits to a company (Ndlela & du Toit, 2001). They pointed out that through sharing and capturing of experiences and information, better exploitation and collection of knowledge within individuals, organisations and professional bodies can be accomplished. By sharing information and knowledge, individual employees can learn from the work experience and know-how of others in the organisation (Kang, Kim, &

Chang, 2008). In addition to this Kang et al (2008, p. 1549) said “this is not only a cost effective learning strategy but can also validate individual employees’ accumulated knowledge.”

Furthermore Riesenberger (1998) cited another five reasons as to why practicing knowledge sharing is beneficial to organisations in maintaining a competitive advantage:

- Learning about customers
- Understanding effective processes and best practices
- Internal competencies and products
- Awareness of emerging market trends and
- To attain competitive intelligence

With these knowledge sharing practices the expectations are that employees are more proactive in generating ideas and improving their problem solving abilities; thus making them far more responsible. Subsequently there will be an increased understanding of the value of learning within the organisation. Employees will share best practices, which will bring continuous improvement in products, services and their performance as a company on a whole (Fong & Chu, 2006). Furthermore, they stated for enterprises to accomplish stability in daily operations knowledge needs to be retained from the workforce.

Michailova & Husted (2003) confirmed what (Riesenberger, 1998) revealed by arguing that the processes of identifying, capturing, and leveraging knowledge inside organisations contributes substantially to creating competitive advantage. Furthermore, they said that the systematic sharing of knowledge between employees in an organisation avoids and lessens redundancy in knowledge production and problem solving processes. Calantone, Cavusgil, & Zhao (2002) and (Scarbrough, 2003) agreed with (Michailova & Husted, 2003) as both their studies demonstrated that knowledge sharing is very important, since it enables organisations to reduce redundant learning attempts and enhances innovation performance.

According to (Ford & Chan, 2003) knowledge sharing assists in organisational learning and in its absence the distance between individual and organisation gets larger. It is one of the most challenging processes for a knowledge-based enterprise due to employees' possible reluctance to share what they know.

2.3. CULTURE

The term culture may refer to two dimensions in the context of knowledge sharing i.e. organisational culture or national culture (Ford & Chan, 2003). Organisational culture is increasingly being recognised as a major barrier to effective knowledge sharing (De Long & Fahey, 2000).

Hofstede (1980, p. 25) describes national culture as

[...] “the collective programming of the mind which distinguishes one group or category of people from another. Also, as mental programming patterns of thinking and feeling, and potentially acting.”

By using the word ‘mind’, it is clear that culture has to do with the way an individual thinks and how information is interpreted by that individual. Research by (Ipe, 2003; Ford & Chan, 2003; Tong & Mitra, 2009) confirmed this, as their studies illustrated that knowledge sharing, communication and learning in organisations are profoundly influenced by cultural values of individual employees. This theory by (Hofstede, 1980), explains that an organisation’s culture is nested within a national culture. Ford & Chan (2003, p. 15) argue that “organisational culture can act as a mediator for national culture and knowledge management processes.” Culture in this sense is a system of collectively held values. The overall characteristics of a country are displayed by the cultural dimensions and they may significantly impact the knowledge transfer within enterprises as well as among business partners (Hofstede, 1983).

Cultural differences still play a very important role in achieving success in a business relationship. They may influence positively, by facilitating communication between employees and business partners. However, these differences may also inhibit knowledge transfer and as a result, deter the competitive position of an enterprise (Hauke, 2006). Therefore it is essential to

recognise, that culture influences meaningfully the will to share knowledge in organisations.

2.3.1. Organisational Culture

Organisational culture can be defined as the shared, basic assumptions that an organisation has developed while coping with the environment and solving everyday challenges that are taught to new members as the correct way to solve those problems (Park, Ribiere, & Schulte, 2004). It is affected by internal factors such as corporate vision, mission and values in the organisation; the organisational structure; the operational technology within the organisation; the leadership as well as external factors such as the social environment of the organisation (Lemon & Sahota, 2003). Many studies have examined the effect of organisational culture on knowledge sharing (Gupta & Govindarajan, 2000; Gold, Malhotra, & Segars, 2001; McDermott & O'Dell, 2001).

Each organisation has its distinctive culture, which develops over time to reflect the organisation's identity in two dimensions namely visible and invisible. The visible dimension of culture is noticeable in the espoused values, philosophy and mission of the organisation whilst the invisible dimension lies in the unspoken set of values that guide employees' actions and perceptions in the organisation (McDermott & O'Dell, 2001). There are a number of cultural dimensions that have been identified that could have an influence on knowledge sharing. De Long & Fahey (2000) identified the following aspects of organisational culture that have an impact on knowledge sharing – culture shapes assumptions about

what knowledge is and which knowledge is important, it defines and controls the relationships between the different levels of knowledge (organisational, group and individual), and it creates the context for social interaction. Culture also suggests what to do and what not to do regarding processing of knowledge and communication in an organisation (Davenport, 1997).

Gold et al (2001) pointed out that corporate culture is an important component of culture within an organisation. They also mentioned that it provided people in the organisation with a sense of purpose and created a system of organisational values. De Long & Fahey (2000) identified specific organisational values they believed hindered or facilitated knowledge sharing. They argued that values such as trust and collaboration would lead to employee willingness to share insights with each other. On the contrary, organisations that have value systems based on individual power and competition among employees may pose as a barrier to knowledge sharing. According to (De Long & Fahey, 2000) organisational culture is regarded by most managers as an important hurdle to creating and leveraging knowledge assets. They were also of the viewpoint that culture shapes the creation of new knowledge in an organisation.

It is apparent that organisational culture is an important parameter that influences knowledge sharing. However, for the purposes of this research, organisational culture is not being considered as studies conducted in this area have already focussed on the organisational dimensions that affect knowledge sharing in South Africa (Finestone & Snyman, 2005; King, Kruger, & Pretorius, 2007).

2.3.2. National Culture

Very few research studies have explicitly concentrated on the discussion of national cultural factors that influence knowledge transfer (Hofstede, 2001; Bhagat, Kedia, Harveston, & Triandis, 2002; Ford & Chan, 2003; Hutchings & Michailova, 2004; Wilkesmann, Fischer, & Wilkesmann, 2009).

Hofstede (2001) contributed to the dimension of national culture with his five cultural dimension framework. He classified cultures into individualism versus collectivism, power distance, uncertainty avoidance, and masculinity versus femininity and long term short term orientation as shown in Figure 1. When the fifth dimension i.e. long term short term orientation was developed by (Hofstede & Bond, 1988) it was based on Confucianism. After a thorough scan of relevant literature on the fifth cultural dimension the researcher has identified very little or no inferences on its impact on influencing knowledge sharing (Ford & Chan, 2003; Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006; Lucas, 2006; Rivera-Vazquez et al, 2009). Therefore, for the purpose of this study the researcher has conceded to omit the fifth dimension.

Research by (Gupta & Govindarajan, 2000; Hofstede, 2001; Ford & Chan, 2003) has demonstrated that these factors also influence knowledge flows between individuals. Ford & Chan (2003) and (Minbaeva, 2007) shared the opinion that employees with different national cultures and languages in multinational organisations certainly pose challenges for knowledge sharing. Previous research has also found that there is a relationship between scores on the cultural dimensions to gender and age (Hofstede, 1991). Chow et al, (2000)

found in their research that employees with a longer work experience tend to show an unwillingness to knowledge sharing by not revealing their own errors made in the organisation.

Furthermore (Bhagat et al, 2002) also explained how national cultural tendencies towards individualism and collectivism, strongly influence ways of thinking, including processing, interpreting and using information and knowledge. They mentioned that people in collectivistic cultures are less likely to emphasise the significance of information that is written and codified and more likely to disregard such information; than those in individualistic cultures.

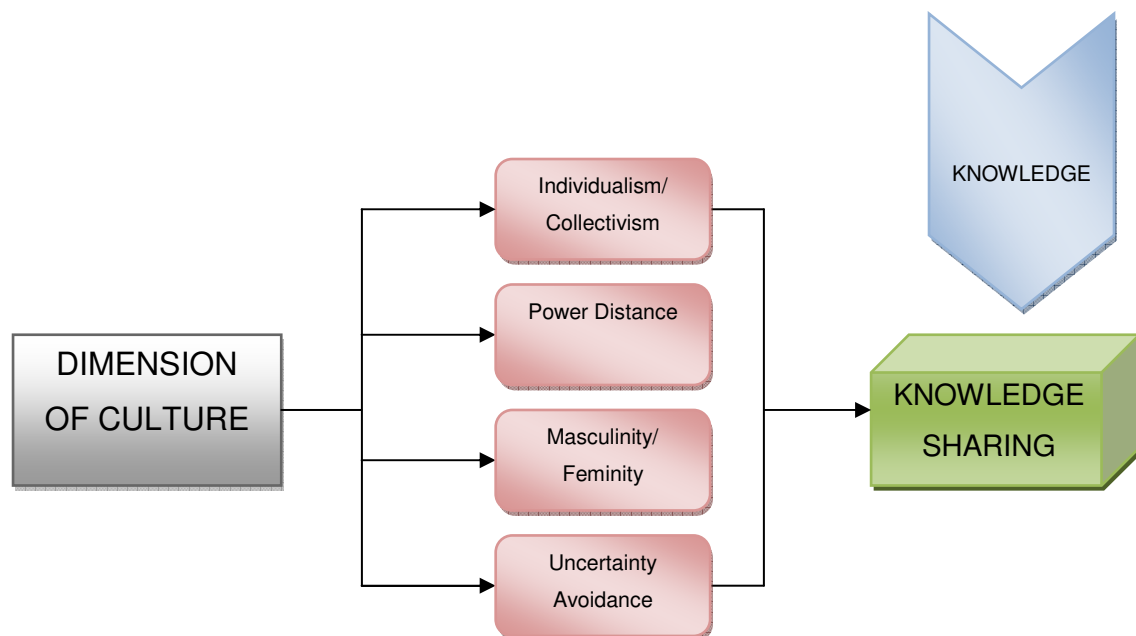


Figure 1: Cultural Elements Influencing Knowledge Sharing

Adapted from Hofstede (1980)

2.3.2.1. Individualism/Collectivism

Individualism describes the tendency of people to place their personal goals ahead of the goals of a larger social group, such as an organisation (Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006). Hofstede (2001) on the other hand mentioned that individuals in collectivistic cultures tend to give priority to the goals of the larger collective or group that they belong to. Ford & Chan (2003) in their study mentioned that in individualistic cultures there is a possibility that it is more difficult to share knowledge as individuals view knowledge as a source of power and a tool for success for oneself. In addition, they stated that in collectivistic cultures knowledge sharing is much easier especially if the group sees a benefit from it. Triandis (1995) made a further distinction between individualism and collectivism on the basis of the definition of self.

In a study by (Chow, Deng, & Ho, 2000) they compared the Chinese and Anglo American culture. Their study concurred with (Hofstede, 2001; Ardichvili et al, 2006) as they suggested that employees from a Chinese culture tended to share information for the good of the organisation even when sharing was personally disadvantageous (for example, sharing past mistakes on the job).

According to (Bhagat et al, 2002) members of individualistic and collectivistic cultures are characterised by distinctively dissimilar ways of processing information and constructing knowledge. For instance, (Ardichvili et al, 2006) mentioned in individualistic cultures e.g. the United States, individuals tend to

see each piece of information independent of its context, emphasise information in written and codified form, and are more likely to accept such information.

While (Bhagat et al, 2002) point out that in collectivistic cultures e.g. China members look for contextual cues in information and tend to disregard written information. Furthermore, in their research (Bhagat et al, 2002) and (Triandis', 1996) have included that the distinction between horizontal and vertical cultures have made an important contribution to this facet of literature, by postulating a theoretical framework. This framework presents the importance of the four transacting cultural patterns, defined in terms of the dimensions of individualism-collectivism and verticalness-horizontalness.

2.3.2.2. Power Distance

It is the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally (Hofstede, 2001). Triandis (1995) identifies four distinctive cultural patterns namely vertical and horizontal collectivism and vertical and horizontal individualism. Ardichvili et al (2006) stated that the horizontal – vertical distinction is very similar to (Hofstede's, 2001) power distance dimension. They also said that in vertical cultures equality is not valued by people and they view themselves as different from others in social status.

However, in high power distance cultures it is expected and accepted that there is a difference in status (Hofstede, 2001). In horizontal cultures (Ardichvili et al,

2006) point out that power distance is low, which implies that differences in status are less explicit. Davenport & Prusak (1998) mention that smaller power distance brings down the gap between superior and the employees, which has a positive effect on the knowledge sharing process in the enterprise. The lack of formal distance makes the information flow in both directions much better. This implies that employees in lower positions are not afraid to show their ideas to the organisation.

Bhagat et al (2002) went further to argue that the difference between horizontal and vertical cultures is useful in explaining cross border knowledge transfer, because information in vertical cultures usually flows from top to bottom, whereas information flows in both directions in horizontal culture. Likewise (Hofstede, 2001) suggests that in high power distance cultures information flows are restricted by hierarchy which could lead to lower level employees being prohibited from certain types of information. Such structures could act as an obstacle to knowledge sharing.

2.3.2.3. Masculinity/Femininity

“When Masculinity–Femininity is applied to the national culture as a whole, the gender role view (social role for the different sexes) is the appropriate interpretation. However, when the Masculinity – Femininity dimension is applied to the workplace, the following interpretation is fitting: “Masculine countries stressed pay security, and job content; feminine countries stressed relationships and physical conditions” Hofstede (2001, p. 313) (cf. Ford and Chan, 2003).

Ford & Chan (2003) also argued that cultures that are high in masculinity may have less knowledge sharing taking place among individuals in an organisation if the competitiveness is individually based. Rivera-Vazquez et al (2009) defined feminity as an environment of cooperation where employees feel secure to share their knowledge with other colleagues. It shows an atmosphere of understanding, not one of aggression and self-accomplishment (Hauke, 2006).

2.3.2.4. Uncertainty Avoidance

“Uncertainty Avoidance is the extent to which the members of a culture feel threatened by uncertain or unknown situations, and is the third dimension, measured from weak to strong.” Hofstede (1980, p. 110). On the other hand (Lucas, 2006, p. 267) mentioned this dimension is the “reluctance to deal with ambiguity and is directly related to the willingness to embrace change.”

According to (Wilkesmann et al, 2009) uncertainty avoidance is the degree to which members of an organisation strive to avoid uncertainty by relying on established social norms, rituals and bureaucratic practices. It is also mentioned in the (Wilkesmann et al, 2009) study, that people in high uncertainty avoidance cultures eagerly seek to decrease the probability of unpredictable future events that could adversely affect the operation of an organisation.

Hauke (2006) states that low level of uncertainty avoidance is correlated with a lack of rules and regulations in a company. Hauke (2006) argues that when employees in an organisation are willing to take risk, they feel more accountable

for their decisions, which results in better satisfaction of achieved success and a higher self-esteem. In consequence, (Hauke, 2006, p. 8) mentions “they build informal networks, which enable knowledge sharing across people. These informal networks are also being built on the basis of ongoing cooperation between different companies, which is positively correlated with knowledge sharing process among them.”

Therefore good relationships outside and inside an organisation with a good social network have a considerable influence on knowledge sharing between employees. Ford and Chan (2003) in their study between Japanese and North Americans employees argue that national cultures and knowledge transfer intersect in the following ways:

- Cultures that are high on individualism may have more trouble in knowledge transfer than cultures that are high on collectivism;
 - Higher power distance in cultures may have a more top-down flow of knowledge than cultures that are low on power distance;
 - A high masculinity in culture may have less knowledge transfer between organisational members if the competitiveness is individually based, then there may be no difference if competitiveness is organisationally based;
- and

- Knowledge transfer between heterogeneous cultural groups may be trickier or require more time and effort than knowledge transfer within a homogenous cultural group.

2.3.2.5. Long Term Short Term Orientation

Long term orientation is defined by (Ford & Chan, 2003) as cultures that have their virtues oriented towards future rewards. In a long term orientation culture, individuals of that culture are keener to work for long term goals (Hofstede, 2001).

The definition of short term orientation by Ford & Chan (2003, p. 14) is the “fostering of virtues related to the past and present, in particular, respect for tradition, preservation of ‘face’, and fulfilling social obligations”. Therefore in a culture like this individuals may ‘give up’ on knowledge management processes as a result of the lack of instant affirmation of its effectiveness (Ford & Chan, 2003).

From the literature reviewed there is limited scope on the relevance of this dimension on knowledge sharing. The definitions cited by (Hofstede, 2001) and (Ford & Chan, 2003) are only to serve to elucidate the specific traits of long term short term orientation. However despite the lack of literature on this cultural dimension in the context of knowledge sharing the limited scope reduces the elusiveness of this term.

2.4. CHAPTER CONCLUSION

This chapter has presented the researcher with vast findings from numerous studies on the impact of culture on knowledge sharing. The literature takes one through the critical components that knowledge, knowledge sharing and culture consist of. Despite the definitional debate of knowledge sharing for the purpose of this study the researcher has adopted the definition given by (Bartol & Srivistava, 2002) due to its applicability to knowledge sharing.

It is evident from the literature, that knowledge sharing has the following positive impacts within an organisation – improved team performance, a decline in production costs, firm innovative capabilities, gaining competitive intelligence, continuous improvement of products and services and a much quicker completion of new product development projects.

The presented cultural factors that influence knowledge sharing in an organisation provides a better understanding as to why it is an imperative for an organisation to exploit these cultural aspects, if effective knowledge sharing is to be achieved.

From the literature it has been shown by several authors that knowledge sharing in an organisation is profoundly influenced by the cultural values of individual employees (Bhagat et al, 2002; Ford & Chan, 2003; Hofstede, 2001; Hutchings & Michailova, 2004; Triandis, 1995). The cultural factors that need to be taken into consideration in an organisation for effective knowledge sharing to

occur, as identified in the literature are individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity. For the purpose of this study the researcher has conceded to omit the fifth cultural dimension, long term short term orientation due to inadequate literature on how it influences knowledge sharing (Ford & Chan, 2003; Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006; Lucas, 2006; Rivera-Vazquez et al, 2009).

Therefore, determining the impact of culture on knowledge sharing is crucial for ensuring that successful knowledge sharing takes place amongst employees. Such research will assist an organisation to align its decisions with employees' values and perceptions which are shaped by a particular cultural background. Despite the growing recognition of the importance of culture on knowledge sharing there is very little research on the impact of national culture on knowledge sharing.

The next chapter (Chapter 3) will discuss the research hypotheses for this study.

CHAPTER 3

RESEARCH HYPOTHESES

3.1. INTRODUCTION

This chapter outlines the research hypotheses developed from the relevant literature on knowledge sharing and culture in Chapter 2. The literature review in Chapter 2 takes one through the critical components that knowledge, knowledge sharing and culture comprise of and subsequently the impact that culture has on knowledge sharing. From the various studies by several authors it is evident that the differences in individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity are the most commonly used universal criteria that may impact knowledge sharing in organisations.

It appears there is not enough research on the impact of national culture on knowledge sharing; the researcher developed the research hypotheses in an attempt to determine the effect that culture has on knowledge sharing. Each cultural dimension is tested by a hypothesis to determine whether there is a cultural impact on knowledge sharing.

3.2. RESEARCH HYPOTHESES

3.2.1. Hypothesis One

H_0 : There is a no difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

H_1 : There is a difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

3.2.2. Hypothesis Two

H_0 : High individualism and low collectivism impedes knowledge sharing.

H_1 : Low individualism and high collectivism promotes knowledge sharing.

3.2.3. Hypothesis Three

H_0 : High power distance negatively impacts on knowledge sharing.

H_1 : Low power distance positively impacts on knowledge sharing.

3.2.4. Hypothesis Four

H_0 : High masculinity and low femininity impedes knowledge sharing.

H_1 : Low masculinity and high femininity promotes knowledge sharing.

3.2.5. Hypothesis Five

H_0 : High uncertainty avoidance negatively impacts on knowledge sharing.

H_1 : Low uncertainty avoidance positively impacts on knowledge sharing.

3.3. CHAPTER CONCLUSION

This chapter discussed the research hypotheses to be used in this research study.

The next chapter (Chapter 4) focuses on the research methodology section.

CHAPTER 4

RESEARCH METHODOLOGY

4.1. INTRODUCTION

This chapter focuses on the research approach and other investigative methods that were used to address the research problem in Chapter 1. These include the research design, research purpose, sampling design (unit of analysis, population and sample and sampling techniques used), data collection methods, analysis of data and research limitations. Furthermore it will be illustrated in the research purpose how the research problem is defined as a cause and effect relationship. Quantitative methods were used to collect data to analyse the research problem identified Chapter 1.

4.2. FOCUS OF THE STUDY

This study concentrated on the impact of culture on knowledge sharing in an organisation. The two main aspects examined were the perceptions and attitudes of employees in an organisation towards the influence of culture on knowledge sharing.

4.3. RESEARCH DESIGN

Zikmund (2003, p. 65) described a research design as a “master plan specifying the methods and procedures for collecting and analysing the needed information”. There are two approaches that can be applied to this research study, according to (Cooper & Schindler, 2001). These are qualitative and quantitative methods. In a qualitative approach the idea is to get a greater understanding of a concept rather than providing specific measurements (Zikmund, 2003). The focus on this type of approach is mainly on words and observations: namely interpretations and meaningful characterisations. Alternatively, data is collected in a quantitative approach to be measured and calculated at a later stage in the research study so that conclusions can be drawn (Cooper & Schindler, 2001). The researcher has adopted the quantitative approach for this study to assist with the assessment of the different dimensions of culture on knowledge sharing.

4.4. RESEARCH PURPOSE

Research designs can be classified in terms of their purpose. Cooper & Schindler (2001) defined some of the common forms of research design as descriptive, explanatory (causal) and exploratory. For this research study the researcher adopted a descriptive and causal approach.

4.4.1. Descriptive Research

Descriptive research describes the characteristics of an existing phenomenon. According to (Cooper & Schindler, 2001) it is a study that tries to discover answers to the questions *who*, *what*, *where* and sometimes *how* that define the research subject.

4.4.2. Explanatory (Causal) Research

The fundamental aim of causal research is to study a problem and to collect data on the phenomenon. This is realised through an analytical and deductive process often involving statistical analyses to describe the relationship between the variables (Hussey & Hussey, 1997). Furthermore (Zikmund, 2003) mentioned that this type of research is utilised to identify cause – and – effect relationships among variables.

For example in this study the researcher assessed how each dimension of culture affected knowledge sharing.

4.5. SAMPLING DESIGN

The techniques discussed in this section include the unit of analysis, population and sample and sampling techniques.

4.5.1. Unit of Analysis

Zikmund (2003) stated that the unit of analysis is a crucial aspect of a problem definition. It assists the researcher to focus on the correct level of investigation and ensures the appropriate collection of data.

In order to answer the hypotheses stated earlier, the unit of analysis for this research study was all individuals from top and middle management at Samancor Chrome. Samancor Chrome was identified as the chosen organisation, as it was a convenient sample with easy access to privileged data.

4.5.2. Population and Sample

Sekaran (2003, p. 265) defines a population as “the entire group of people, events, or things of interest that the researcher wishes to investigate”. Due to difficulty in researching entire populations, a sample was extracted. The population for this study included all the employees in top and middle management positions at Samancor Chrome. Top management included individuals responsible for overseeing the whole organisation and who were more involved in the strategic matters of the business, rather than day to day operations. Middle managers consisted of individuals that reported to top management and were in charge of a particular department.

A sample is a subset of the population (Saunders, Lewis, & Thornhill, 2003). Zikmund (2003, p. 369) describes sampling as “a process of using a small number of items or parts of a larger population to make conclusions about the whole population”. Samples give the researcher the opportunity to generalise to the population. Therefore it is essential that the sample chosen is representative of the population it is expected to characterise (Sekaran, 2003).

4.5.3. Sample Size

Zikmund (2003) warns that the determination of an appropriate sample size is a crucial aspect of business research.

The following sampling size issues must be considered when determining the amount of respondents required for the research study (Cooper & Schindler, 2001):

- The confidence level that the researcher wants in the estimate together with the size of the interval estimate.
- The researcher then determines the expected dispersion in the population.
- An approximate standard deviation of the population

Considering all of the above issues, the researcher established a 95% confidence level with an estimated 10% desired interval range. The expected

dispersion of the population approximated to be 30% with a standard error of proportion equaling 0.051. The sample size calculated was ninety-six (96).

A total of ninety-six (96) respondents from Samancor Chrome will form the sample for this study.

4.5.4. Sampling Techniques

The two basic groups of sampling are probability and non-probability sampling. Probability sampling is based on the concept of random selection (Zikmund, 2003). Probability techniques include simple random sampling, stratified sampling, systematic sampling, cluster sampling and multistage sampling. Non probability sampling is arbitrary (non random) and subjective. Each member does not have a known zero chance of being included. Non-probability techniques include quota sampling, convenience sampling, judgement sampling and snowball sampling (Zikmund, 2003).

The sampling technique used in this study is convenience sampling. In convenience sampling, the researcher has the freedom to choose whoever is available for inclusion in the sample (Cooper & Schindler, 2001).

4.6. DATA COLLECTION TECHNIQUES

Researchers can utilise several data collection techniques (Sekaran, 2003). These include personal interviews such as face-to-face and door-to-door interviews, telephonic interviews and self-administered questionnaires that are either personally administered, web based, sent through mail, or electronically administered (Zikmund, 2003).

The data collection method will be discussed by describing the questionnaire in detail.

4.6.1. The Questionnaire

Self-administered questionnaires posted on the web were used in this study to collect information. The questionnaire is one of the most widely used survey data collection technique (Saunders, Lewis, & Thornhill, 2003). Zikmund (2003) details some of the advantages of self-administered questionnaires. These include, speed and cost effectiveness, high response rate, respondent participation and cooperation and minimum interviewer bias.

Sekaran (2003) and Cooper & Schindler (2001) mentioned that a questionnaire is a effective research tool as the researcher knows precisely what is required and how to measure the variables of interest. The questions asked in the questionnaire are based on the research question (Cooper & Schindler, 2001). The questionnaire used in this research study was constructed by the researcher.

4.6.1.1. Questionnaire Construction

A good questionnaire of sound quality should flow seamlessly and be well integrated (Saunders, Lewis, & Thornhill, 2003). The researcher developed a questionnaire based on questions designed to assess knowledge sharing according to respondent's opinions and perceptions regarding each of the cultural factors. Independent variables were measured, by obtaining the respondents extent of agreement with the existence of corresponding indicators in the work environment. The extent of agreement was measured using the Likert scale assessment ranging from 5 = strongly agree to 1 = strongly disagree.

The questionnaire comprised of the following:

- a) **Biographical data**, which comprised of age, work experience, gender.
- b) **Perception**. This section intended to gauge the level of understanding of knowledge sharing among respondents, - which was achieved using forced ranking. Respondents had to rank ten statements according to their perceived level of importance.
- c) **Attitudes**. Questions 8 to 11 were formulated to assess attitudes towards knowledge sharing relevant to the four dimensions of culture namely individualism/collectivism, power distance, masculinity/femininity and uncertainty avoidance. Independent variables were measured by obtaining the respondents extent of agreement with the corresponding indicators in the work environment. The extent of agreement was measured through Likert scale assessment ranging from 5 = strongly agree to 1 = strongly disagree. Such levels of agreement or

disagreement illustrate the impact of a particular cultural dimension on knowledge sharing that being a positive or negative impact. Example: “Employees like to work in a group rather than by themselves” Agree or strongly agree indicates that low individualism and high collectivism positively impacts knowledge sharing.

Sekaran (2003) argues that well constructed questionnaire should focus on three areas, issues related to variables, wording and appearance of the questionnaire.

a) Wording

The researcher initially determined the nature of the variables (was it objective or subjective) in terms of content and purpose of the questionnaire, in order to decide on the questions to be asked.

It was essential that the language of the questionnaire was appropriate to the level of understanding of the respondents. The researcher ensured that the choice of wording reflected the educational level of the subjects.

b) Type

This refers to whether the question will be closed or open-ended. In this research study the researcher used closed questions. This kind of question presented the respondents with a selection of options from which they made a choice.

In terms of form, this refers to positively or negatively worded questions. The researcher utilised both these types in the questionnaire. This ensured that the respondents remained involved and alert when answering the questions.

Furthermore the researcher constructed the questionnaire taking cognisance of the following errors identified by (Zikmund, 2003):

1. The researcher avoided the use of technical jargon and abbreviations, as not all respondents have a college vocabulary and abbreviated terms can hold different meanings for some respondents.
2. When constructing the questionnaire the researcher had to avoid the use of leading and loading questions. These questions could lead the respondents to a certain answer.
3. The questionnaire was constructed such that indefinite words that can be interpreted in many ways were avoided. This assisted the researcher in avoiding ambiguity and vagueness.
4. Double barrelled questions were avoided by the researcher during the construction of the questionnaire.
5. The researcher had to avoid making assumptions about issues.

4.6.1.2. Administration of the Questionnaire

The questionnaires were administered at Samancor Chrome. General Managers of the different work units were approached for approval. Once this

approval was attained, the web address of the online questionnaire was emailed to the general managers to distribute to their sections.

4.6.1.3. Reliability

Reliability tells the researcher the degree to which measures are error free and will yield consistency in results (Zikmund, 2003). There are several kinds of reliability namely test-retest method, split-half method and equivalent-form method. Cronbach's alpha will be used in this research study to determine the inter-item reliability.

4.6.1.4. Validity

Validity lets the researcher know whether a measure actually captures the meaning of the construct it claims to measure (Zikmund, 2003). There are several types of validity namely face validity, criterion validity, concurrent validity, predictive validity, discriminant validity and construct validity.

Face validity was ensured by the researcher. This was done by reading the relevant literature and extracting the dimensions applicable to the research questions.

The researcher ensured construct validity by formulating suitable items that appropriately measured the constructs being studied and which directly related to the objectives of the research study.

4.7. ANALYSIS OF DATA

After the data was collected, the researcher had a considerable volume of information. The key aim was to analyse this information to test the research hypothesis (Sekaran, 2003). The data was captured using MS Excel. The descriptive and inferential statistical analysis of data was analysed utilising the statistical software SPSS Statistics 17.0. The dependent variable in this research study was knowledge sharing. The independent variables were individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity.

4.7.1. Descriptive Statistics

The aim of descriptive statistics is to “provide summary measures of data contained in all elements of a sample” Zikmund (2003, p. 402). Frequency distribution was adopted for this study.

4.7.1.1. Frequency Distributions

Frequency distributions are the easiest way to describe the numerical data of one variable (Zikmund, 2003). The number of times various sub categories’ of a certain phenomenon occur, from which the percentage and cumulative percentage of the occurrence of the sub categories can be easily calculated are referred to as frequencies (Cooper & Schindler, 2001).

4.7.1.2. Measures of Central Tendency

Researchers find it necessary to summarise the information about one variable into a single number. There are three measures of central tendency: the mean, the median and the mode (Zikmund, 2003).

The mean of a collection of observations is the sum of the observations divided by the number of observations (also known as the average). It is the location measure most frequently used for interval-ratio data, but can be misleading when the distribution contains extreme high scores, large or small (Cooper & Schindler, 2001).

4.7.2. Ranking

Ranking is a measurement task that needs that the respondents rank order a “small number of items on the basis of overall preference of some characteristic of the stimulus” Zikmund (2003, p. 309). There are several types of ranking paired-comparison scale, forced ranking scale and comparative scale (Cooper & Schindler, 2001). For example for this study knowledge sharing was force ranked from 1 to 10 to determine whether there was a common agreement on what knowledge sharing actually entailed.

4.7.3. Factor Analysis

Factor analysis is important as it is a statistical technique whose main goal is data reduction (Sekaran, 2003). A typical use of factor analysis is in survey research, where a researcher wishes to represent a number of questions with a small number of hypothetical factors. For example, as part of a national survey on political opinions, participants may answer three separate questions regarding environmental policy, reflecting issues at the local, state and national level. Each question, by itself, would be an inadequate measure of attitude towards environmental policy, but *together* they may provide a better measure of the attitude. Factor analysis can be used to establish whether the three measures do, in fact, measure the same thing. If so, they can then be combined to create a new variable, a factor score variable that contains a score for each respondent on the factor (Cooper & Schindler, 2001). For this study a factor analysis was performed.

4.7.4. Inferential Statistics

Inferential statistics allow the researcher to use information from the sample to draw conclusions about the characteristics of the population based on the corresponding characteristics of the sample (Cooper & Schindler, 2001).

Inferential statistics may be classed as parametric or non parametric. Parametric statistics is based on the assumption that the population from which the sample is drawn is normally distributed. Parametric statistics can be used

only when data is collected on an interval or ratio scale. Non – parametric statistics, on the other hand, makes no assumption about the normality of distribution in the population. This can be used when data is on a nominal or ordinal scale (Zikmund, 2003).

The types of inferential statistics that will be used in this research will be described below:

4.7.4.1. Chi-Square

The chi-square is widely used and a powerful tool. It can be applied to both nominal and ordinal data. This technique involves testing the significant differences between the observed distribution of data among categories and the expected distribution based on the null hypothesis (Cooper & Schindler, 2001).

For example in this study chi-square was conducted to assess whether there existed a significant difference between the four cultural dimensions and knowledge sharing.

4.8. PRESENTATION OF DATA

There are four basic ways to present data in a research report; they are a text paragraph, semi-tabular form, tables or graphs (Cooper & Schindler, 2001).

4.8.1. Text Presentation

Text presentation is the most commonly used when there is only a few statistics. In this type of presentation, the writer directs the reader's attention to certain comparisons or numbers to highlight a point (Cooper & Schindler, 2001).

4.8.2. Semi-tabular Form

In this type of presentation due to the small amount of figures, the figures may be removed from the text and listed in a table (Cooper & Schindler, 2001).

4.8.3. Tables and Graphs

Tables and graphs are pictorial representations of data and may simplify research data (Zikmund, 2003). The main objective of each table or graph is to “facilitate the summarisation and communication of the meaning of data” Zikmund (2003, p.483)

For example in study the data was presented using both tabular and graphical representations. Bar charts were used for frequency analysis and tables were used for mean values. The results will be discussed narratively in terms of the four cultural dimensions and the impact that they have on knowledge sharing.

4.9. RESEARCH LIMITATIONS

This research will have the following limitations:

- Only a single organisation within one industry was used, therefore, the results might not be relevant to other companies or industries.
- As a result of using non probability sampling, the results of this study will not be generalisable.
- Another limitation will be a predominantly male demographic within the organisation.
- The common limitations of a research questionnaire apply namely non response bias and response bias.
- Language barriers could be another limitation where respondents do not understand the questions as they are presented in English.

4.10. CHAPTER CONCLUSION

The research methodology issues were explained through descriptions of the research design, research purpose, sample, population, data collection techniques and statistical techniques used.

In the next chapter (Chapter 5) results presented will obtained from the statistical techniques, described in this chapter.

CHAPTER 5

PRESENTATION OF RESULTS

5.1. INTRODUCTION

This chapter presents the findings for each of the questions in the questionnaire. The results will be interpreted using the data analysis techniques discussed in the previous chapter.

5.2. BIOGRAPHICAL DATA

The biographical information for this study will be presented by the use of tables with frequencies and percentages. Frequency “refers to the number of times various subcategories of a certain phenomena occur” Sekaran (2003, p.395)

5.2.1. Gender

Gender	Percentage	Frequency
Male	63.0	58
Female	37.0	34
Total	100.0	92

Table 1: Frequency Distribution of the Sample by Gender

Of the sample of 92 respondents, the majority 63% (58) were male and 37% (34) were female. The sample comprised males to females in an approximate ratio of 2:1.

5.2.2. Age

Age	Percentage	Frequency
50 - 59	8.7	8
40 - 49	13.0	12
35 - 39	20.7	19
30 - 34	30.4	28
25 - 29	26.1	24
20 - 24	1.1	1
Total	100.0	92

Table 2: Frequency Distribution of the Sample by Age

Table 2 for the age variable indicates that the largest percentage (30.4%) fell within the 30-34 age group. Furthermore 26.1% of the respondents fell within the 25-29 age group, while 20.7% fell within the 35-39 age group. Those between the ages of 40-49 and 50-59 made up 13% and 8.7% of the respondents respectively. 1.1% of the respondents fell within the 20-24 age group.

Table 3 indicates that 17.4% of the sample fell within the 1-5 year work experience. Furthermore, 32.6% of the respondents from the sample have a work experience between 6-10 years while 29.3% of the respondents have

worked between 11-20 years. In addition, 20.7% of the respondents have worked for more than 20 years

5.2.3. Work Experience

Work Experience	Percentage	Frequency
1 - 5 years	17.4	16
6 - 10 years	32.6	30
11 - 20 years	29.3	27
More than 20 years	20.7	19
Total	100.0	92

Table 3: Frequency Distribution of the Sample by Work Experience

5.3. HYPOTHESIS ONE

H_0 : There is a no difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

H_1 : There is a difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

a) Chi Square Tests

The Chi square test was performed to determine whether there was a statistically significant relationship between the four cultural dimensions and the biographical data (age, gender, work experience). The null hypothesis states that there is no association between the two. The alternate hypothesis indicates that there is an association.

There are 4 values that indicate significant relationships table 4 between the biographical data and the four dimensions of culture. For example, the significance value (p-value) for age and one does better work when working alone than in a group, has a value of 0.012. The other 3 relationships can be analysed in a similar manner.

		Gender	Age	Work Experience
Individualism/ Collectivism	Employees like to work in a group rather than by themselves.	.836	.783	.988
	If a group is slowing me down, it is better to leave it and work alone.	.985	.836	.856
	One does better work when working alone than in a group.	.863	.012*	.363
	Problem solving by groups gives better results than problem solving by individuals.	.154	.155	.055
	An employee should accept the group's decision even when he/she personally has a different opinion.	.672	.359	.227
Power Distance	I am not afraid to share my ideas with my direct superior.	.944	.649	.623
	I am consulted by my direct superior in his/her decisions.	.175	.239	.159
	My direct superior only shares his/her insights with colleagues of the same stature.	.600	.422	.208
	I have a good working relationship with my direct superior.	.172	.925	.786
	Decision making in my department only occurs top down.	.694	.740	.708
Masculinity/Feminity	Competition between employees usually does more harm than good.	.942	.454	.592
	Everyone is paranoid that someone else can do the job better and quicker so there is very little knowledge sharing.	.100	.579	.556
	I am secure to share my knowledge with others in the organisation.	.306	.240	.069
	I am selfish and do not share my expertise with others in the organisation.	.372	.535	.183
	My knowledge sharing will help others in the organisation to solve problems.	.400	.682	.562
Uncertainty Avoidance	My organisation is very much in "status quo" and takes the "do not rock the boat" approach to management style.	.723	.742	.746
	I often feel nervous or tense at work.	.979	.920	.987
	Adopting something new in the organisation is seen as risky and having the potential to create significant problems.	.271	.301	.013*
	There is a standard operating procedure in handling work tasks in my department.	.155	.231	.019*
	A host of work rules spell out ways to handle work tasks in my department.	.050*	.420	.742

Table 4: Results of the Chi Square and Crosstabs between the Biographical Data of Employees and the Four Cultural Dimensions

	Variables	Asymp. Sig.
Individualism/Collectivism	Employees like to work in a group rather than by themselves.	.000
	If a group is slowing me down, it is better to leave it and work alone.	.000
	One does better work when working alone than in a group.	.000
	Problem solving by groups gives better results than problem solving by individuals.	.000
	An employee should accept the group's decision even when he/she personally has a different opinion.	.000
Power Distance	I am not afraid to share my ideas with my direct superior.	.000
	I am consulted by my direct superior in his/her decisions.	.000
	My direct superior only shares his/her insights with colleagues of the same stature.	.000
	I have a good working relationship with my direct superior.	.000
	Decision making in my department only occurs top down.	.000
Masculinity/Feminity	Competition between employees usually does more harm than good.	.000
	Everyone is paranoid that someone else can do the job better and quicker so there is very little knowledge sharing.	.000
	I am secure to share my knowledge with others in the organisation.	.000
	I am selfish and do not share my expertise with others in the organisation.	.000
	My knowledge sharing will help others in the organisation to solve problems.	.000
Uncertainty Avoidance	My organisation is very much in "status quo" and takes the "do not rock the boat" approach to management style.	.004
	I often feel nervous or tense at work.	.000
	Adopting something new in the organisation is seen as risky and having the potential to create significant problems.	.000
	There is a standard operating procedure in handling work tasks in my department.	.000
	A host of work rules spell out ways to handle work tasks in my department.	.000

Table 5: Chi Square Test - Individual Statements

5.4. HYPOTHESIS TWO

H_0 : High individualism and low collectivism impedes knowledge sharing.

H_1 : Low individualism and high collectivism promotes knowledge sharing.

a) Chi Square Tests

The chi square test was used to determine whether there was any significant difference between the expected and observed frequencies per variable. The null hypothesis claims that there is no difference. The results are presented in the table 5. It is noted that all of the p-values are less than 0.05.

b) Mean Analysis

Table 6 illustrates the mean scores for each variable of individualism/collectivism and the extent to which it impacts knowledge sharing in an organisation.

Individualism/Collectivism		Mean
Employees like to work in a group rather than by themselves.	A1	3.13
If a group is slowing me down, it is better to leave it and work alone.	A2	2.73
One does better work when working alone than in a group.	A3	2.65
Problem solving by groups gives better results than problem solving by individuals.	A4	3.84
An employee should accept the group's decision even when he/she personally has a different opinion.	A5	2.97

Table 6: Mean Analysis of Individualism/Collectivism impacting knowledge sharing in an organisation

c) Frequency Analysis

Of all the respondents in figure 2, 9 (9.8%) disagree strongly, 26 (28.3%) disagree, 12 (13%) neutral, 34 (37%) agree, 11 (12%) agree strongly for employees like to work in a group rather than by themselves.

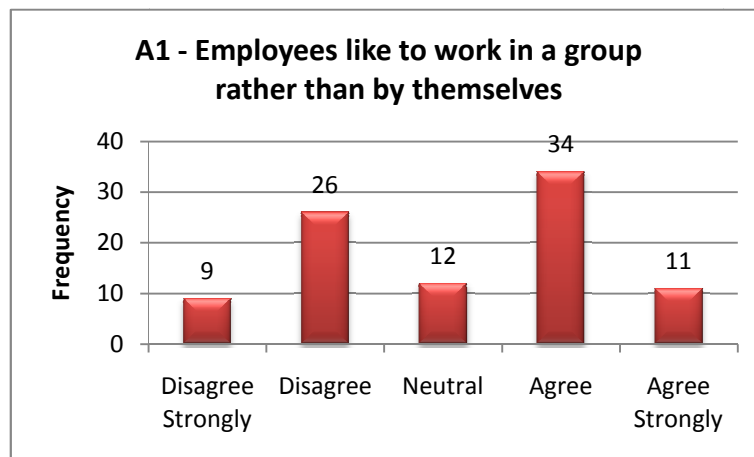


Figure 2: Response Indication level: A1 - Employees like to work in a group rather than by themselves

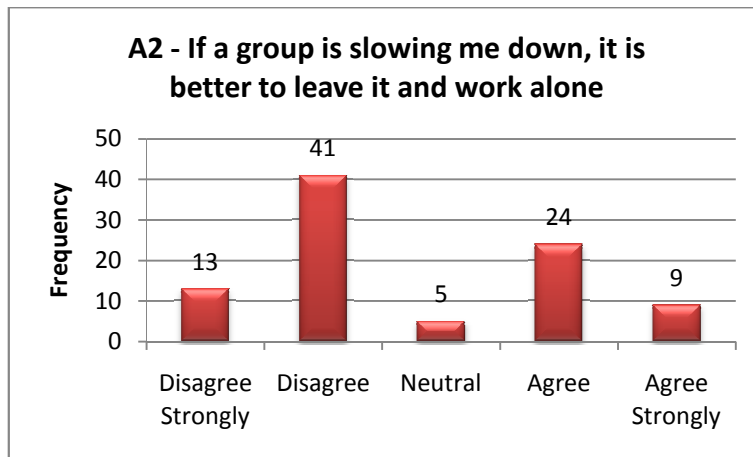


Figure 3: Response Indication level: A2 - If a group is slowing me down, it is better to leave it and work

Responses in figure 3 indicate 13 (14.1%) disagree strongly, 41 (44.6%) disagree, 5 (5.4%) neutral, 24 (26.1%) agree, 9 (9.8%) strongly agree that if a group is slowing me down, it is better to leave it and work alone.

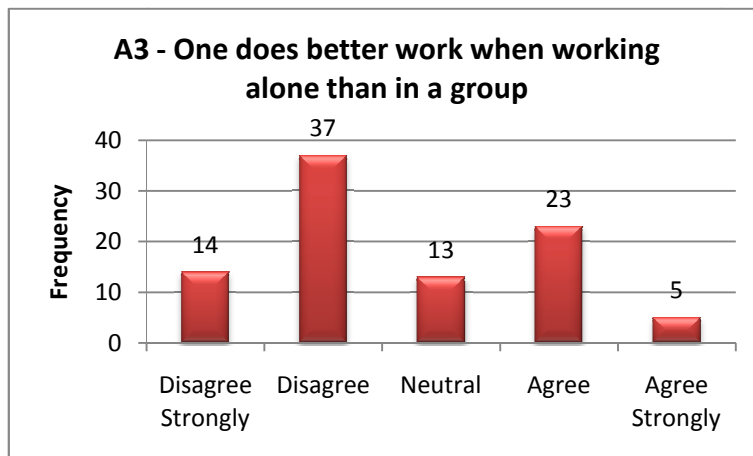


Figure 4: Response Indication level: A3 - One does better work when working alone than in a group

Results in figure 4, show that 14 (15.2%) disagree strongly, 37 (40.2%) disagree, 13 (14.1%) neutral, 23 (25%) agree, 5 (5.4%) agree strongly to one does better work when working alone than in a group.

The responses in figure 5, reveal 7 (7.6%) disagree strongly, 10 (10.9%) disagree, 5 (5.4%) neutral, 39 (42.4%) agree, 31 (33.7%) agree strongly to problem solving by groups gives better results than problem solving by individuals.

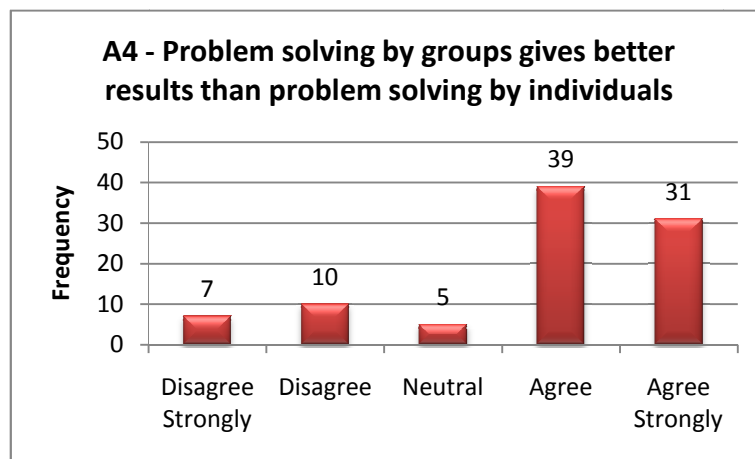


Figure 5: Response Indication level: A4 - Problem solving by groups gives better results than problem solving by individuals

Of all the responses in figure 6, 13 (14.1%) disagree strongly, 28 (30.4%) disagree, 9 (9.8%) neutral, 33 (35.9%), 9 (9.8%) agree strongly to an employee should accept the group's decision even he/she has a different opinion.

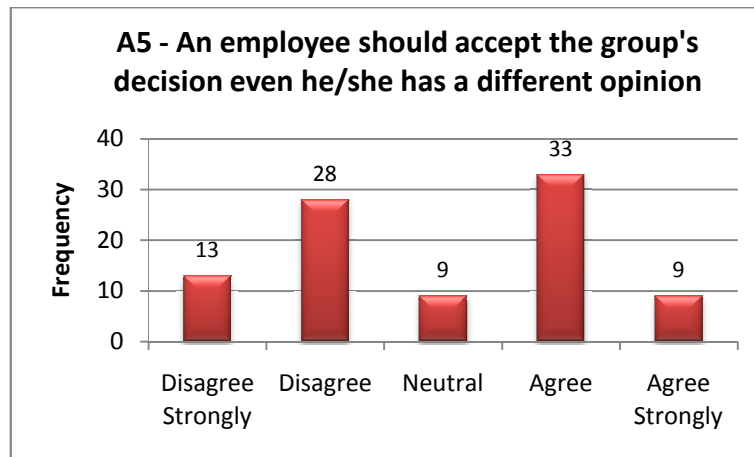


Figure 6: Response Indication level: A5 - An employee should accept the group's decision even he/she has a different opinion

5.5. HYPOTHESIS THREE

H_0 : High power distance negatively impacts on knowledge sharing.

H_1 : Low power distance positively impacts on knowledge sharing.

a) Chi Square Tests

The chi square test was used to determine whether there was any significant difference between the expected and observed frequencies per variable. The null hypothesis claims that there is no difference. The results are presented in the table 5. It is noted that all of the p-values are less than 0.05.

b) Mean Analysis

Table 7 illustrates the mean scores for each variable of power distance and the extent to which it impacts knowledge sharing in an organisation.

Power Distance		Mean
I am not afraid to share my ideas with my direct superior.	B1	3.65
I am consulted by my direct superior in his/her decisions.	B2	2.99
My direct superior only shares his/her insights with colleagues of the same stature.	B3	3.02
I have a good working relationship with my direct superior.	B4	3.68
Decision making in my department only occurs top down.	B5	3.42

Table 7: Mean Analysis of Power Distance impacting knowledge sharing in an organisation

c) Frequency Analysis

The researcher observed in figure 7, 4 (4.3%) disagree strongly, 20 (21.7%) disagree, 4 (4.3%) neutral, 40 (43.5%) agree, 24 (26.1) agree strongly to I am not afraid to share my ideas with my direct superior.

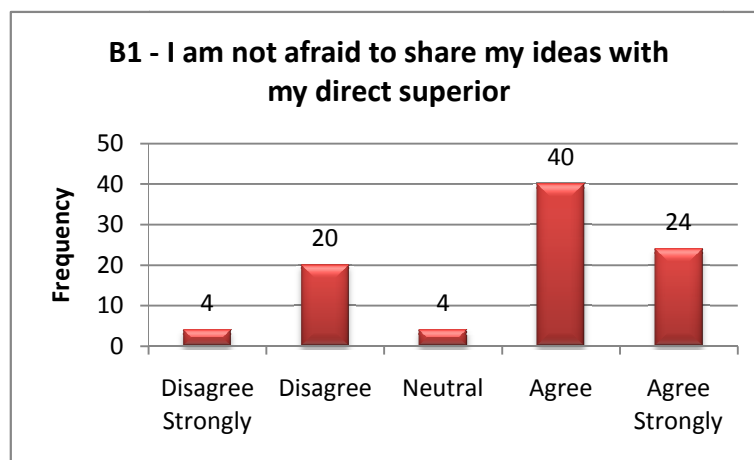


Figure 7: Response indication level: B1 - I am not afraid to share my ideas with my direct superior

Of all the responses in figure 8, 7 (7.6%) disagree strongly, 36 (39.1%) disagree, 8 (8.7%) neutral, 33 (35.9%) agree, 8 (8.7%) agree strongly to I am consulted by my direct superior in his/her decisions.

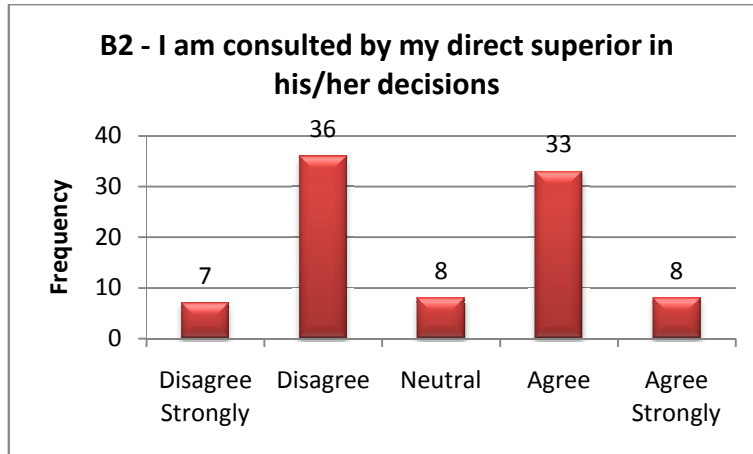


Figure 8: Response Indication Level: B2 - I am consulted my direct superior in his/her decisions

The responses in figure 9 reveal 8 (8.7%) disagree strongly, 32 (34.8%) disagree, 11 (12%) neutral, 32 (34.8%) agree, 9 (9.8%) agree strongly with my direct superior only shares his/her insights with colleagues of the same stature.

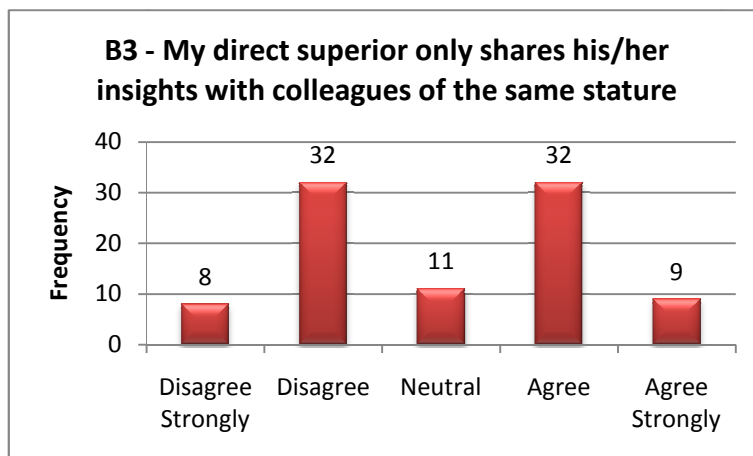


Figure 9: Response Indication Level: B3 - My direct superior only shares his/her insights with colleagues of the same stature

The results in figure 10 indicates 2 (2.2%) disagree strongly, 20 (21.7%) disagree, 5 (5.4%) neutral, 43 (46.7%) agree, 22 (23.9%) agree strongly to I have a good working relationship with my direct superior.



Figure 10: Response Indication Level: B4 - I have a good working relationship with my direct superior

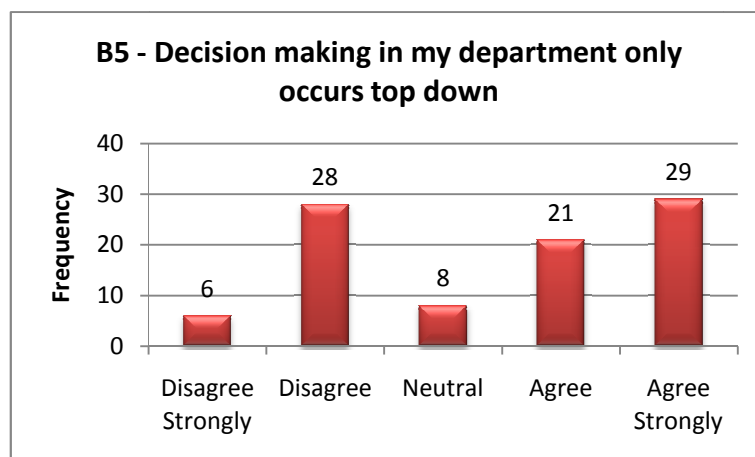


Figure 11: Response Indication Level: B5 - Decision making in my department only occurs top down

Responses in Figure 11 indicate 6 (6.5%) disagree strongly, 28 (30.4%) disagree, 8 (8.7%) neutral, 21 (22.8%) agree, 29 (31.5%) agree strongly to decision making in my department only occurs top down.

5.6. HYPOTHESIS FOUR

H_0 : High masculinity and low femininity impedes knowledge sharing.

H_1 : Low masculinity and high femininity promotes knowledge sharing.

a) Chi Square Tests

The chi square test was used to determine whether there was any significant difference between the expected and observed frequencies per variable. The null hypothesis claims that there is no difference. The results are presented in the table 5. It is noted that all of the p-values are less than 0.05.

b) Mean Analysis

Masculinity/Femininity		Mean
Competition between employees usually does more harm than good.	C1	2.97
Everyone is paranoid that someone else can do the job better and quicker so there is very little knowledge sharing.	C2	3.39
I am secure to share my knowledge with others in the organisation.	C3	4.11
I am selfish and do not share my expertise with others in the organisation.	C4	1.88
My knowledge sharing will help others in the organisation to solve problems.	C5	4.30

Table 8: Mean Analysis of Masculinity/Femininity impacting knowledge sharing in an organisation

Table 8 illustrates the mean scores for each variable of masculinity/femininity and the extent to which it impacts knowledge sharing in an organisation.

c) Frequency Analysis

Results in Figure 12 highlight 8 (8.7%) disagree strongly, 37 (40.2%) disagree, 6 (6.5%) neutral, 32 (34.8%) agree, 9 (9.8%) agree strongly to competition between employees usually does more harm than good.

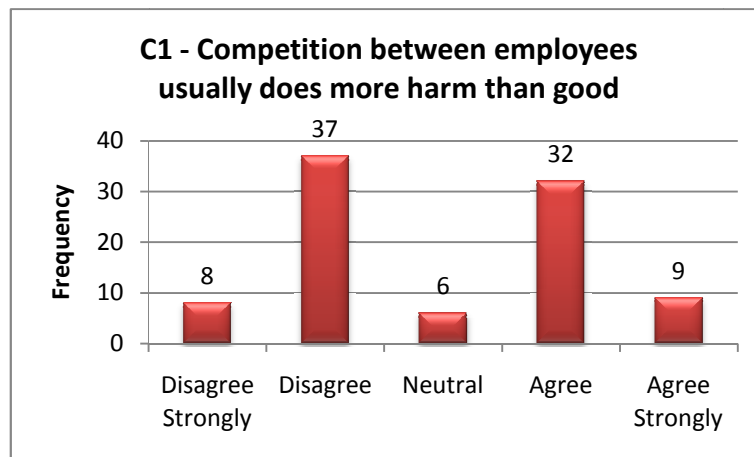


Figure 12: Response Indication Level: C1 - Competition between employees usually does more harm than good

Of all the responses in figure 13, 3 (3.3%) disagree strongly, 28 (30.4%) disagree, 9 (9.8%) neutral, 34 (37%) agree, 18 (19.6%) agree strongly to everyone is paranoid that someone else can do the job better and quick so there is very little knowledge sharing.



Figure 13: Response Indication Level: C2 - Everyone is paranoid that someone else can do the job better and quick so there is very little knowledge sharing

The researcher observes in figure 14 that 3 (3.3%) disagree strongly, 8 (8.7%) disagree, 3 (3.3%) neutral, 40 (43.5%) agree, 38 (41.3%) agree strongly to I am secure to share my knowledge with others in the organisation.

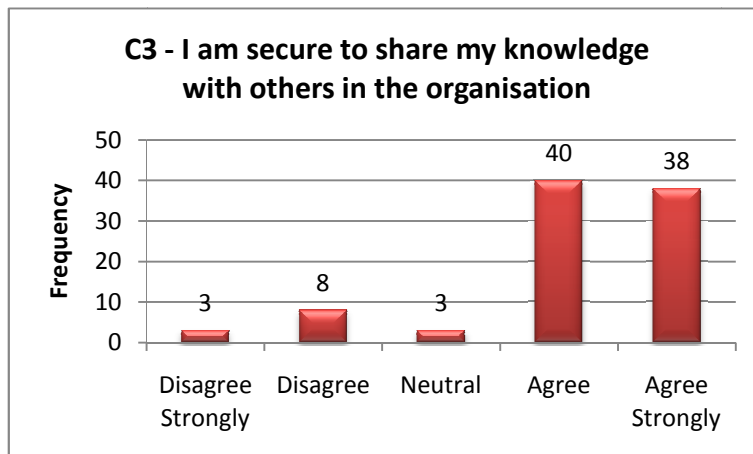


Figure 14: Response Indication Level: C3 - I am secure to share my knowledge with others in the organisation

The responses in figure 15 reveal 48 (52.2%) disagree strongly, 27 (29.3%) disagree, 3 (3.3%) neutral, 8 (8.7%) agree, 6 (6.5%) agree strongly I am selfish and do not share my expertise with others in the organisation.



Figure 15: Response Indication Level: C4 - I am selfish and do not share my expertise with others in the organisation

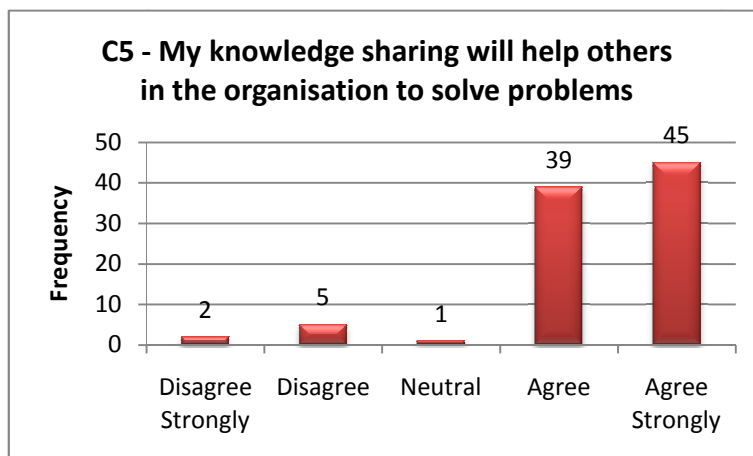


Figure 16: Response Indication Level: C5 - My knowledge sharing will help others in the organisation to solve problems

The results in figure 16 indicate 2 (2.2%) disagree strongly, 5 (5.4%) disagree,

1 (1.1%) neutral, 39 (42.4%) agree, 45 (48.9%) agree strongly to my knowledge sharing will help others in the organisation to solve problems.

5.7. HYPOTHESIS FIVE

H_0 : High uncertainty avoidance negatively impacts on knowledge sharing.

H_1 : Low uncertainty avoidance positively impacts on knowledge sharing.

a) Chi Square Tests

The chi square test was used to determine whether there was any significant difference between the expected and observed frequencies per variable. The null hypothesis claims that there is no difference. The results are presented in table 5. It is noted that all of the p-values are less than 0.05.

b) Mean Analysis

Uncertainty Avoidance		Mean
My organisation is very much in "status quo" and takes the "do not rock the boat" approach to management style.	D1	3.08
I often feel nervous or tense at work.	D2	2.45
Adopting something new in the organisation is seen as risky and having the potential to create significant problems.	D3	3.05
There is a standard operating procedure in handling work tasks in my department.	D4	3.53
A host of work rules spell out ways to handle work tasks in my department.	D5	3.46

Table 9: Mean Analysis of Uncertainty Avoidance impacting knowledge sharing in an organisation

Table 9 illustrates the mean scores for each variable of uncertainty avoidance and the extent to which it impacts knowledge sharing in an organisation.

c) Frequency Analysis

The responses in Figure 17 indicate 10 (10.9%) disagree strongly, 27 (29.3%) disagree, 14 (15.2) neutral, 28 (30.4%) agree, 13 (14.1%) agree strong to my organisation is very much in “status quo” and takes the “do not rock the boat” approach to management style.



Figure 17: Response Indication Level: D1 - My organisation is very much in “status quo” and takes the “do not rock the boat” approach to management style

The researcher observed in figure 18, 19 (20.7%) disagree strongly, 41 (44.6%) disagree, 7 (7.6%) neutral, 22 (23.9%) agree, 3 (3.3%) agree strongly to I often feel nervous or tense at work.

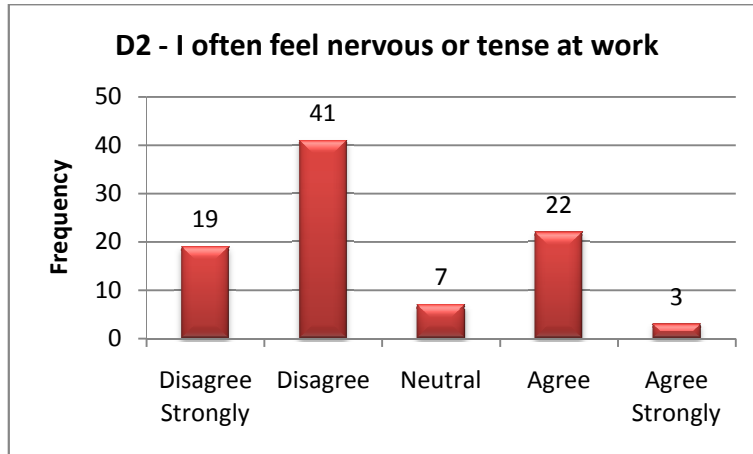


Figure 18: Response Indication Level: D2 - I often feel nervous or tense at work

Respondents in figure 19 indicated 5 (5.4%) disagree strongly, 35 (38%) disagree, 7 (7.6%) neutral, 40 (43.5%) agree, 5 (5.4) agree strongly adopting something new in the organisation is seen as risky and having the potential to create significant problems.

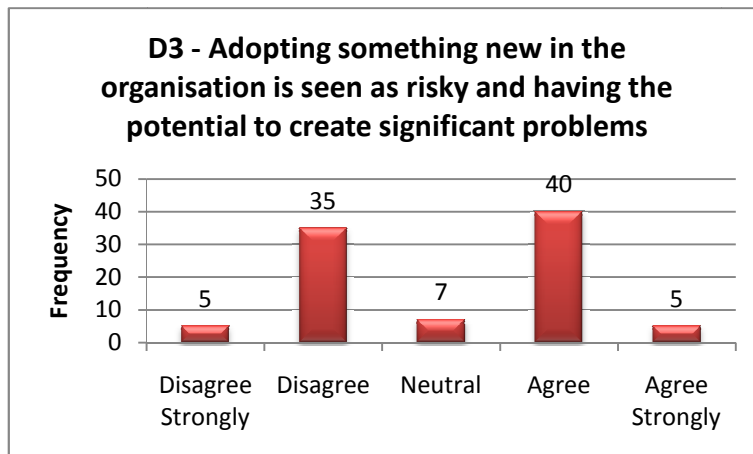


Figure 19: Response Indication Level: D3 - Adopting something new in the organisation is seen as risky and having the potential to create significant problems

The responses in Figure 20 reveal 4 (4.3%) disagree strongly, 22 (23.9%) disagree, 6 (6.5%) neutral, 41 (44.6%) agree, 19 (20.7%) agree strongly to

there is a standard operating procedure in handling work tasks in my department.

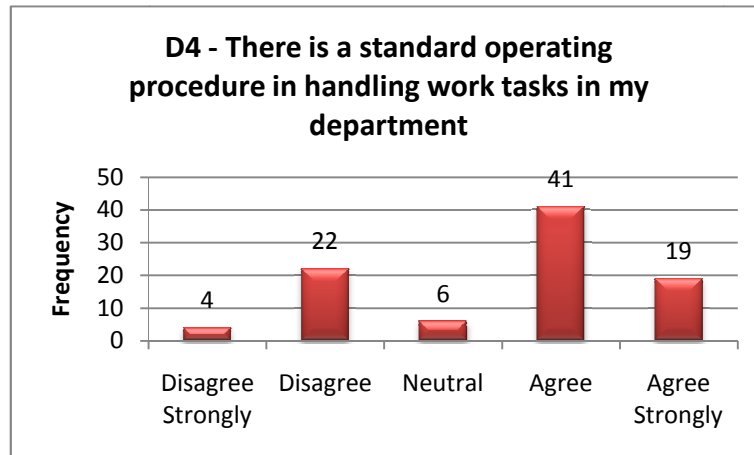


Figure 20: Response Indication Level: D4 - There is a standard operating procedure in handling work tasks in my department

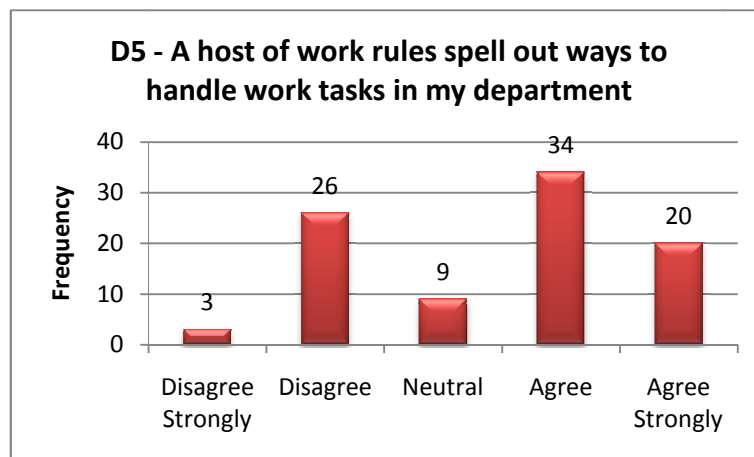


Figure 21: Response Indication Level: D5 - A host of work rules spell out ways to handle work tasks in my department

The researcher observed in figure 21, 3 (3.3%) disagree strongly, 26 (28.3%) disagree, 9 (9.8%) neutral, 34 (37%) agree, 20 (21.7%) agree strongly to a host of work rules spell out ways to handle work tasks in my department.

5.8. STATISTICAL ANALYSIS OF QUESTIONNAIRE - RELIABILITY

Cronbach's coefficient alpha was used to determine reliability. Below is a summary of the Cronbach's alpha reliability scores for the various categories of the research.

Section	Alpha value
Individualism/Collectivism	0.745
Power Distance	0.753
Masculinity/Femininity	0.639
Uncertainty Avoidance	0.556
Overall	0.632

Table 10: Reliability Analysis

A reliability coefficient of 0.60 or higher is considered as "acceptable". All of the categories have acceptable reliability values, except for Uncertainty Avoidance. Although this impacted on the overall reliability, an acceptable coefficient of 0.632 was obtained. Some of the variables were re-coded due to negative co-variances, and the overall reliability was obtained on 17 of the original 20 items. Due to the negative co-variances, the reliability scores for the first three categories were obtained using 4 of the 5 variables in each section.

5.9. FACTOR ANALYSIS – ROTATED MATRIX

The rotated component matrix is given below:

		Component			
		1	2	3	4
Employees like to work in a group rather than by themselves.	A1_1	-.007	.635	-.263	-.083
If a group is slowing me down, it is better to leave it and work alone.	A2	.153	.681	-.033	.062
One does better work when working alone than in a group.	A3	.042	.821	-.070	-.215
Problem solving by groups gives better results than problem solving by individuals.	A4_1	.016	.757	-.028	-.113
I am consulted by my direct superior in his/her decisions.	B2_1	.744	.007	-.279	.075
My direct superior only shares his/her insights with colleagues of the same stature.	B3	.558	.215	.019	-.023
I have a good working relationship with my direct superior.	B4_1	.660	.151	-.297	.015
Decision making in my department only occurs top down.	B5	.739	.110	.037	.112
Competition between employees usually does more harm than good.	C1_1	-.048	-.029	.528	-.130
I am secure to share my knowledge with others in the organisation.	C3	-.276	-.390	.584	.029
I am selfish and do not share my expertise with others in the organisation.	C4_1	-.112	-.249	.758	-.030
My knowledge sharing will help others in the organisation to solve problems.	C5	.044	.060	.780	.148
My organisation is very much in “status quo” and takes the “do not rock the boat” approach to management style.	D1	.688	.146	.011	-.036
I often feel nervous or tense at work.	D2	.486	.129	-.021	.122
Adopting something new in the organisation is seen as risky and having the potential to create significant problems.	D3	.817	.117	-.024	-.137
There is a standard operating procedure in handling work tasks in my department.	D4	-.007	.198	.074	.872
A host of work rules spell out ways to handle work tasks in my department.	D5	.094	-.092	-.112	.888

Table 11: Factor Analysis - Rotated Matrix

The rotation method used in Table 5.5 is the Varimax Method with Kaiser Normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors.

Table 5.5 indicates that the variables for the first 3 categories align perfectly under respective components. This means that the questions measure what

they set out to measure. Due to negative co-variances mentioned earlier, certain question (labeled by _1) were re-coded.

The last component shows a clear split amongst the variables, with 3 variables aligning with the second category of Power Distance. This overlapping indicates that the questions might not have measured what they intended or that respondents misinterpreted them.

5.10. FORCED RANKING

Table 12 illustrates the average rank per knowledge sharing statement that respondents ranked according to importance. The results indicate that statement S4 – “A process involving sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation’s performance.” was ranked the most important by respondents with a mean rank of 2.74. The second most important statement to respondents was S6 – “Knowledge sharing plays a significant part in innovation, knowledge application and ultimately the competitive advantage of an organisation.” with a mean rank of 3.60. Statement S9 – “Knowledge sharing is a voluntary act.” was ranked the least important with a mean rank of 7.62 by respondents.

Respondents ranked statements S1 and S3 from table 12 with equal importance with a mean rank of 4.93 respectively.

		Average Rank
A process involving sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation's performance.	S4	2.74
Knowledge sharing plays a significant part in innovation, knowledge application and ultimately the competitive advantage of an organisation.	S6	3.60
Knowledge flows between two individuals or from one individual to a group when knowledge sharing occurs.	S1	4.93
An activity of transferring knowledge from one person, group or organisation.	S3	4.93
A practice in which knowledge by an individual is transformed into a form that can be understood and utilised by other individuals.	S5	5.07
Problem solving is a means of knowledge sharing.	S8	6.01
A process of identification, outflow, transmission and inflow of knowledge in an organisation.	S2	6.20
A process where individuals mutually exchange both tacit and explicit knowledge to jointly create new knowledge.	S7	6.68
Knowledge sharing can occur through meetings, email or intranet.	S10	7.22
Knowledge sharing is a voluntary act.	S9	7.62

Table 12: Forced Ranking

5.11. CHAPTER CONCLUSION

In this chapter the results of the data obtained were presented. The data was presented in both tabular and graphical representations. Data for Cronbach's alpha, frequency analysis, factor analysis, forced ranking, results of chi square and cross tabs and mean analysis were presented in tabular format and discussed briefly.

For each hypothesis, data was presented in terms of the chi square tests, mean analysis and a graphical illustration of each relevant question to the hypothesis.

The next chapter (Chapter 6) is going to focus on the discussion and interpretation of the results.

CHAPTER 6

DISCUSSION OF RESULTS

6.1. INTRODUCTION

In this chapter, the results obtained and presented in chapter 5 are discussed according to the developed hypotheses in chapter 3. The results of this study together with the research findings in the literature review from chapter 2 were used for an interpretation of the findings.

6.2. HYPOTHESIS ONE

H_0 : There is no difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

H_1 : There is a difference in employee perceptions varying in biographical profiles (age, gender, work experience) regarding the impact of the dimensions of culture (individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity) on knowledge sharing.

The rationale for this hypothesis was to determine if there was a relationship between the biographical profiles on the four dimensions of culture and its impact on knowledge sharing. Previous research has shown that there was a relation between gender and age to the cultural dimension scores (Hofstede,

1991). In a research study by (Chow et al, 2000) where they compared Chinese to Anglo American culture they established that employees with long work experience displayed an unwillingness to share knowledge by not sharing their own errors made in an organisation.

From table 4 there was only one significant value (p-value) for age and one does better work when working alone than in a group in the cultural dimension individualism/collectivism. However, for the other nineteen variables there were no significant values. For this reason, there was no significant difference in the perceptions of employees varying in age regarding the impact of the four dimensions of culture on knowledge sharing.

Just one significant value (p-value) was indicated in table 4 for gender and a host of work rules spell out ways to handle work tasks in my department in the cultural dimension uncertainty avoidance. But with no significant values for the other nineteen variables it was evident that there was no significant difference in the perceptions of employees varying in gender regarding the impact of the cultural dimensions on knowledge sharing.

Results in table 4 highlighted the two significant values (p-value) for work experience, and the two variables - adopting something new in the organisation is seen as risky and having the potential to create significant problems and there is a standard operating procedure in handling work tasks in my department. Despite this, the other eighteen variables showed no significant values. It was therefore deduced that there was no significant difference in the perceptions of employees varying in work experience with regards to the impact

of the four cultural dimensions on knowledge sharing. Hence the results obtained, indicated that age, gender and work experience had no effect on knowledge sharing in terms of the cultural dimensions.

The non-significant findings may be due to the characteristics of the research sample, as the majority of the respondents were in the 30-34 age group, from the mining and manufacturing sector. This was the younger age group of managers from this sector. The overall trend in the results indicated that there were more males than females, which were a classic attribute of a mining and manufacturing industry. This could have influenced the insignificant result obtained.

Table 3 indicated that a greater part of the respondents had 6 -10 years experience. The results of the study by (Chow et al, 2000) revealed that respondents who had approximately 7 years work experience displayed a negative relationship to the willingness to share one's errors with others in the organisation. However, in this study from the results attained no significant difference was noted with work experience and the cultural dimensions. This could be attributed to the fact that Chow et al (2000) in their study compared the Chinese and Anglo American cultures which differed to the South African culture.

6.3. HYPOTHESIS TWO

H_0 : High individualism and low collectivism impedes knowledge sharing.

H_1 : Low individualism and high collectivism promotes knowledge sharing.

The results from this study for individualism/collectivism revealed generally positive results. Table 5 revealed that there was a significant difference in the manner in which respondents scored each question in the cultural dimension individualism/collectivism. The means values indicated in table 6 showed that low individualism and high collectivism positively impacted knowledge sharing. With one exception, responses for the fifth question in this cultural dimension was close to 3 indicating that there were as many respondents who agreed with the statement as those who did not.

The frequency analysis in figure 2 indicated that 34 (37%) of the respondents agree and 11 (12%) of the respondents strongly agreed to question A1 highlighting that knowledge sharing was promoted when employees work in a group. Since the majority of the respondents 45 (49%) agreed that working in a group promoted knowledge sharing this indicated that low individualism and high collectivism promoted knowledge sharing.

Figure 3 showed that the frequency analysis of question A2 indicated that 41 (44.6%) of the respondents disagree and 13 (14.1%) of the respondents strongly disagreed to this question highlighting that knowledge sharing was promoted when employees work in a group rather than on one's own. From the results obtained it was evident that the greater part of the respondents 54 (58.7%) agreed that working in a group rather than on one's own promoted knowledge sharing. Therefore, this indicated that low individualism and high collectivism promoted knowledge sharing. The results in figure 4 concerning question A3 revealed that 37 (40.2%) of the respondents disagree and 14

(15.2%) of the respondents strongly disagreed to this question highlighting that better work was achieved when one works in a group than alone. Thus, indicating that knowledge sharing was promoted when one worked with others. The majority of the respondents 51 (55.4%) agreed that working in a group achieved better work results hence promoting knowledge sharing which indicated that low individualism and high collectivism promoted knowledge sharing.

The results regarding question A4 in figure 5 indicated that 39 (42.4%) of the respondents agree and 31 (33.7%) of the respondents strongly agreed to this question highlighting that problem solving in groups gave better results than when it was done by an individual therefore indicating that knowledge sharing was promoted when problem solving was done in a group. The majority of the respondents 70 (76.1%) agreed that problem solving in groups gave better results than when it was done by an individual hence promoting knowledge sharing which indicated that low individualism and high collectivism promoted knowledge sharing.

Finally figure 6 results indicated that 33 (35.9%) of the respondents agree and 9 (9.8%) of the respondents strongly agreed to this question. This highlighted that the employee must give priority to the decision of the group rather than placing their own personal goals ahead of the group. Therefore, indicating, that knowledge sharing was promoted when an individual gave priority to the decisions of the group. From figure 6, 28 (30.4%) of the respondents disagree and 13 (14.1%) of the respondents strongly disagreed. However, the mean

value for this question is 3 indicating that number of respondents agreeing with statement was the similar to the ones disagreeing with it. Therefore, for this study, the last question was not considered due to its impartial result indicating that the cultural dimension individualism/collectivism has no impact on knowledge sharing.

Nevertheless, the results unanimously support the hypothesis in that there was a definite trend that low individualism and high collectivism promoted knowledge sharing. From the chi square test all p – values for questions A1 to A5 were less than 0.05 indicating there was a significant difference in the manner in which respondents scored the questions hence showing a clear tendency that low individualism and high collectivism promoted knowledge sharing.

In earlier research, it was shown that it was more difficult to share knowledge in an individualistic culture as individuals viewed knowledge as a source of power whereas in a collectivistic culture easier knowledge sharing took place especially if the group saw the benefit (Ford & Chan, 2003). Consequently, a low individualistic culture and a high collectivistic culture will promote knowledge sharing. It was also noted that individuals in individualistic cultures displayed a tendency to place their own personal goals ahead of the larger social group such as an organisation (Ardichvili et al, 2006). Hofstede (2001) on the other hand mentioned that individuals in collectivistic cultures tended to give priority to the goals of the larger collective or group they belonged to. In spite of this the last question of the cultural dimension individualism/collectivism showed no

conclusive result as this could be due to the employees of Samancor Chrome not fully understanding the question.

6.4. HYPOTHESIS THREE

H_0 : High power distance negatively impacts on knowledge sharing.

H_1 : Low power distance positively impacts on knowledge sharing.

The results pertaining to hypothesis three in table 5 indicated there was a significant difference in the way in which respondents scored each question in the cultural dimension power distance. The means values indicated in table 7 showed that low power distance positively impacted knowledge sharing. With two exceptions, responses for the third and fourth question in this cultural dimension was close to 3 indicating that equal amount of respondents agreed and disagreed with these questions.

Results in figure 7 indicated that 40 (43.5%) of the respondents agree and 24 (26.1%) of the respondents strongly agreed that they were not afraid to share their ideas with their direct superior. Most of the respondents 64 (69.6%) agreed that none of them were afraid to have their ideas shared with their superiors. A possible explanation for this was that the superior was quite open to ideas from the subordinates confirming that he/she encouraged generation of ideas thereby promoting knowledge sharing. This suggested that low power distance positively impacted knowledge sharing.

Question B4 in figure 10 revealed that 43 (46.7%) of the employees agree and 22 (23.9%) of employees strongly agreed that they all had good working relationships with their superiors. It was evident that the majority of the employees 65 (70.6%) had good working relationships with their superiors. An explanation for this could be that their superiors' were not autocratic and did not control all the decisions and ideas generated by subordinates. A superior with such qualities promoted knowledge sharing. This implied that low power distance has a positive impact on knowledge sharing.

Davenport & Prusak (1998) mentioned that smaller power distance brought down the gap between superior and the employees which had a positive effect on the knowledge sharing process in the organisation. This was apparent with the agreement from employees that they had good working relationships with their superiors and were not afraid to share their ideas. Hence low or smaller power distance promotes knowledge sharing. The lack of formal distance made the information flow in both directions much better implying that employees in lower positions were not afraid to show their ideas to the organisation (Davenport & Prusak, 1998) confirming easier knowledge sharing.

The results regarding figure 11 indicated that 21 (22.8%) of respondents agree and 29 (31.5%) agreed strongly that in their departments decision making occurred top down. However table 7 showed that its mean value is lesser than questions B4 and B1 indicating that most of the employees are of the opinion that decision making does not only occur from top down. This could be attributed to the fact that employees reported to managers that had different

management styles. Considering this, low power distance promoted knowledge sharing.

The exceptions to questions B2 and B3 indicated that employees could not come to a decision as to whether they were consulted or not by their superiors in his/her decisions, and were not aware of what their superior's actions were when it came to sharing insights in the organisation with other colleagues of the same stature respectively.

It was clear that the employees in Samancor Chrome believed that knowledge flow occurred in both directions as mentioned by (Davenport & Prusak, 1998) suggesting better knowledge sharing in the organisation. This argument was further supported by (Hofstede, 2001) as he stated that information flows were constrained by cultures that displayed high power distances due to the presence of hierarchical environments. Uncertainty in employees concerning questions B2 and B3 could be due to the different types of management styles from the various managers.

Therefore, the results in this section 5.5 showed that there was a clear pattern that low power distance positively impacted knowledge sharing. Hence it is quite evident that Samancor Chrome demonstrated a horizontal culture as discussed by (Bhagat et al, 2002) where information flows in both directions. Furthermore (Ardichvili et al, 2006) emphasised this point by asserting that differences in status are less explicit which was evidently seen in the responses obtained for questions B1 and B4 thus indicating that low power distance

promoted knowledge sharing. From the chi square test all p – values for questions B1 to B5 were less than 0.05 indicating there was a significant difference in the manner in which respondents scored the questions hence confirming that low power distance had a positive impact on knowledge sharing.

6.5. HYPOTHESIS FOUR

H_0 : High masculinity and low femininity impedes knowledge sharing.

H_1 : Low masculinity and high femininity promotes knowledge sharing.

The results concerning hypothesis four revealed that low masculinity and high femininity promoted knowledge sharing. The results in table 5 indicated that there existed a significant difference in the manner in which respondents scored each question in the cultural dimension masculinity/femininity. The mean values indicated in table 8 revealed that low masculinity and high femininity promoted knowledge sharing as questions C3, C4 and C5 effectively indicated that respondents would share their knowledge. With two exceptions, responses for question C1 in this cultural dimension tended towards neutrality indicating that there were as many respondents who agreed with the statement as there was who did not. This could be owing to employees not understanding the question and how it affects their organisation in terms of knowledge sharing. C4 also tended towards neutrality, which could be attributed to the different views that certain managers had.

Regarding question C3, the results in figure 14 highlighted that 40 (43.5%) of the respondents agree and 38 (41.3%) strongly agreed that they were secure to share their knowledge with others in the organisation. From the literature, Rivera-Vazquez et al (2009) defined femininity as an environment of cooperation where employees felt secure to share their knowledge with other colleagues. Hence, this suggested that the employees believed that the atmosphere at Samancor Chrome was one of cooperativeness, which enabled the security for them to share their knowledge. It also showed an atmosphere of understanding, not one of aggression and self accomplishment (Hauke, 2006). From figure 14 it was clear that this statement held true for Samancor Chrome. It also indicated that employees did not feel threatened to share their knowledge, thus reinforcing the argument made by (Hauke, 2006). With the majority of the respondents 78 (84.8%) feeling this way, the results obtained suggested that low masculinity and high femininity promoted knowledge sharing.

Results in figure 15 indicated that 48 (52.2%) of employees at Samancor Chrome strongly disagree and 27 (29.3%) disagreed that they were selfish when it came to sharing expertise with others in the organisation. This implied that most of the respondents 75 (81.5%) seemed to agree that they were unselfish when it came to sharing expertise with other employees in the organisation. A possible explanation for this could be that superiors displayed this same quality, which encouraged subordinates to demonstrate the same behaviour. This positive result indicated that low masculinity and high femininity promoted knowledge sharing.

The last figure 16 showed that 45 (48.9%) of all the respondents strongly agree and 39 (42.4%) of respondents agreed that their knowledge sharing assisted others in the organisation to solve problems. This huge response 84 (91.3%) suggested yet again that employees strongly felt that the environment at Samancor Chrome was a conducive one for knowledge sharing. An explanation for this could be that employees have already seen how well problem solving can be achieved by groups rather than by oneself. Another possible explanation would be that by working in a group, expertise is shared with others and this made the problems solving process more efficient and valuable. Hofstede (2001) also mentioned in his study that when the femininity dimension is applied at the workplace, relationships are of priority. This is clearly indicated by the results obtained in figure 16. This suggested that low masculinity and high femininity promoted knowledge sharing.

Ford & Chan (2003) also argued that cultures that were high in masculinity may have less knowledge sharing taking place among individuals in an organisation if the competitiveness was individually based.

However from the frequencies obtained, there was a strong positive trend that low femininity and high masculinity promoted knowledge sharing. From the chi square test all p-values for questions C1 to C5 were less than 0.05 indicating there was a significant difference in the manner in which respondents scored the questions. Hence it was very clear that the differences in responses were significant indicating that low masculinity and high femininity promoted knowledge sharing.

6.6. HYPOTHESIS FIVE

H_0 : High uncertainty avoidance negatively impacts on knowledge sharing.

H_1 : Low uncertainty avoidance positively impacts on knowledge sharing.

The results concerning hypothesis five for the cultural dimension uncertainty avoidance indicated generally positive results. The results in table 5 showed a significant difference in the style in which respondents scored each question in the cultural dimension uncertainty avoidance. The mean values in table 9 however indicated that high uncertainty avoidance negatively impacted knowledge sharing. This was mainly due to the high mean values attained in D4 and D5. Two out of the five questions, D1 and D3 tended to be neutral suggesting that respondents' had the inability to accurately assess the type of organisation Samancor Chrome actually was. Alternatively, it may be that the respondents' did not want to be truthful about the organisation and how it operated. D2 indicated that employees were comfortable at work.

Figure 20 revealed that 19 (20.7%) of the respondents strongly agree and 41 (44.6%) agreed that in their departments there were standard operating procedures for handling work tasks. The majority of the respondents agreed to this question. This might be due to the robust and unsafe environment that was characteristic of a mining and manufacturing organisation. To avoid harm to employees there were standard operating procedures to ensure that everyone knew how to perform work tasks in a safe manner.

The results for D5 in figure 21 indicated that 34 (37%) of the employees agree and 20 (21.7%) of employees strongly agreed that a host of work rules spelt out ways to handle tasks in their department. Majority of employees agreed to this, as it is well known that the mining and manufacturing organisation has a significant amount of the work force that is not well educated. In addition to this, there are complex operations that are run in these types of organisations increasing uncertainty and safety of employees. Therefore, there are work rules in these organisations to guide employees to do the right thing and at the same time keep them safe. The disparity in the results indicated that employees are experiencing some form of conflict between freely expressing their perceptions and being somewhat conservative.

The results for D4 and D5 certainly concurred with (Wilkesmann et al, 2009) argument when they mentioned that uncertainty avoidance is the degree to which an organisation strived to avoid uncertainty by relying on established norm, rituals and bureaucratic practices. Furthermore, they said that people in high uncertainty avoidance culture eagerly sought to decrease the probability of unpredictable events that could adversely affect the operation of an organisation. As discussed earlier, the mining and manufacturing is characterised as a high uncertainty avoidance culture.

From the chi square test all p – values for questions D1 to D5 were less than 0.05 indicating there was a significant difference in the manner in which respondents scored the questions hence showing high uncertainty avoidance negatively impacts knowledge sharing. Hauke (2006) argued that in a low

uncertainty avoidance environment employees in an organisation are willing to take risk, they feel more accountable for their decisions which results in better satisfaction of achieved success and a higher self esteem. In consequence, (Hauke, 2006, p. 8) mentioned “they build informal networks, which enables knowledge sharing across people. These informal networks are also being built on the basis of ongoing cooperation between different companies, which is positively correlated with knowledge sharing process among them”. However, from the above it was clearly evident that Samancor Chrome displayed high uncertainty avoidance which negatively impacted knowledge sharing.

6.7. BIOGRAPHICAL DATA

The data recorded in this section reported the biographical characteristics of the participants in the survey.

From the literature review it was identified by (Hofstede, 1991) and (Chow et al, 2000) that gender, age and work experience had a relationship on the scores of the cultural dimensions which in turn had an impact on knowledge sharing. Thus for the purposes of this research the biographical data was collected to ascertain whether there was relationship in hypothesis one.

6.8. FORCED RANKING – KNOWLEDGE SHARING

In chapter 2 it was identified that several authors described the term knowledge sharing, despite this definitional debate the researcher adopted the definition by (Bartol & Srivistava, 2002) due to its applicability to knowledge sharing. The

forced ranking results in table 12 indicated that the most important knowledge sharing statement to respondents was that it was a process which involved sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation's performance. This result suggested that there was consensus from the majority of the respondents on what they believed knowledge sharing should be, which corresponds to the researcher's choice of the definition by (Bartol & Srivistava, 2002).

Respondents in the survey also thought that the second most important aspect of knowledge sharing was the significant part it played in innovation, knowledge application and ultimately the competitive advantage of the an organisation. According to (Rivera-Vazquez et al, 2009) they were also of the opinion that it was crucial for enterprises that wanted a competitive advantage to have good knowledge transfer and a culture promoting knowledge sharing in an organisation. It was also affirmed by (Calantone et al, 2002) and (Scarborough, 2003) that the key to enhancing an organisation's innovation performance is knowledge sharing.

The results revealed also indicated that the respondents ranked knowledge sharing as a voluntary act as the least important characteristic of knowledge sharing. This demonstrated that from the employees' experience, they felt that the environment at Samancor Chrome is not a favourable one where sharing of solutions between employees occurs on a voluntary basis. However in (Ford & Chan, 2003) study between North American and Japanese employees it was evident that knowledge sharing was a voluntary act when it came to sharing solutions among subordinates. These conflicting views could be owing to the

South African culture accompanied by the nature of the mining and manufacturing environment. Employees acknowledged that knowledge sharing is an activity that involves transferring of knowledge from one individual to a group as they ranked S1 and S3 similarly.

The analysis of the results clearly indicated that employees at Samancor Chrome understood the significance of knowledge sharing for the organisation and benefits thereof; however, they also acknowledged it was an added effort to get employees to voluntarily share knowledge with others.

6.9. CHAPTER CONCLUSION

In this chapter, an interpretation of the results from chapter 5 was coupled and an overall picture of what the results and the interpretations meant to the study was illustrated.

Based on the results of the study the researcher identified that the biographical data (age, gender, work experience) had no influence on the four cultural dimensions that would impact knowledge sharing. It was apparent that there was agreement that employees at Samancor Chrome were well aware of what knowledge sharing was and how crucial it was for the success of the organisation.

The impact of the cultural dimension individualism/collectivism indicated that low individualism and high collectivism promoted knowledge sharing. It was

quite evident from the results for this study that Samancor Chrome displayed a culture of high collectivism. All employees positively agreed that working in groups gave better results and problem solving and also employees at Samancor Chrome liked working in groups. This therefore suggested that low individualism and high collectivism promoted knowledge sharing.

The impact of the cultural dimension power distance revealed that low power distance positively impacts knowledge sharing. Employees were of the view that they had good working relationships with their direct superiors and could share their ideas with them. This indicated that the superior was open to new idea generation from subordinates, thus promoting knowledge sharing. However, as many employees that agreed that decision making occurred top down, there were those who did not. This could be due to the fact that some employees reported to different managers that displayed different management styles. The results in this study concerning the power distance dimension indicated that Samancor Chrome exhibited a low power distance culture which promoted knowledge sharing.

The impact of the cultural dimension masculinity/femininity on knowledge sharing showed that high femininity and low masculinity promoted knowledge sharing. From the results, it could be seen that Samancor Chrome displayed a culture of low masculinity and high femininity that positively impacted knowledge sharing. Majority of the employees at Samancor Chrome understood that sharing knowledge assisted in problem solving since expertise was shared and the process was made more efficient, thereby adding value to the organisation.

Employees were also very secure to share knowledge and expertise with others in the organisation. This suggested that maybe superiors displayed behaviours which encouraged subordinates to behave similarly. Ultimately, Samancor Chrome displayed a low masculinity and high femininity culture which promoted knowledge sharing.

The impact of the cultural dimension uncertainty avoidance on knowledge sharing indicated that high uncertainty avoidance negatively impacted knowledge sharing. The results in this study indicated that Samancor Chrome displayed a culture of high uncertainty avoidance which negatively impacted knowledge sharing. The mining and manufacturing organisations are known for their complex operations, robust and unsafe environments. Therefore, employees at Samancor Chrome fully agreed that standard operating procedures and a host of work rules were employed to handle work tasks in their departments. A possible explanation for this was to ensure that employees fully understood their work tasks and to avoid any harm to employees. This type of environment inhibited knowledge sharing as it took away accountability from employees and avoided better decision making. Samancor Chrome is shown to have a high uncertainty avoidance culture which negatively impacts on knowledge sharing.

Hence, it was evident that the four cultural dimensions have an impact on knowledge sharing. The next chapter (chapter 7) will be based on the conclusions drawn from the discussions section.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1. INTRODUCTION

This chapter focuses on the conclusions extracted from the discussion in chapter 6. The central theme of the research was to investigate whether the four dimensions of culture promote or impede knowledge sharing, and to establish an understanding of employees' perceptions on knowledge sharing. Recommendations for addressing the relationship between culture and knowledge sharing, will be presented.

7.2. RECOMMENDATIONS OF THE STUDY

Recommendations presented below focus on the relationship between the four cultural dimensions and its impact on knowledge sharing based on the results of this study.

7.2.1. Recommendations based on the Results of the Study

The results of the study clearly indicate awareness, by the employees, of what knowledge sharing is as per forced ranking. Most of the employees at Samancor Chrome felt that knowledge sharing was a process that involved sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation's performance. However, it was detected that Samancor Chrome employees do not believe that knowledge sharing is a voluntary act, as

it was ranked the least important. From the literature reviewed (Davenport, 1997) defined sharing as a voluntary act. This was confirmed by (Ford & Chan, 2003) when they found that sharing of solutions between subordinates in an organisation, was predominantly a voluntary act. Hence, it is recommended that Samancor Chrome undertake an interview process to understand why employees in top and middle management considered knowledge sharing as a voluntary act, as the least important.

From the study it was found that gender, age and work experience had no influence on the four cultural dimensions and its impact on knowledge sharing, despite the literature by (Chow et al, 2000) and (Hofstede, 2001) mentioning that there is a relation between age, gender and work experience to the cultural dimension scores.

The results from the study for the cultural dimension individualism/collectivism indicate positive results suggesting that low individualism and high collectivism promoted knowledge sharing. Hence, with Samancor Chrome displaying a collective culture, knowledge sharing is much easier as mentioned by (Ford & Chan, 2003). From the literature with easy knowledge sharing (Reid, 2003) stated that opportunities will be created to maximise Samancor Chrome's ability to meet those needs, that provide the business with a competitive advantage. Therefore, for Samancor Chrome to sustain this culture adequately they need to perform an audit to identify the key knowledge sharing criteria that needs to be monitored.

Power distance indicated positive results for this study indicating that low power distance positively impacts knowledge sharing. From the literature, it has been established that a low power distance decreases the gap between superior and employees', thus encouraging knowledge sharing due to the flow of information in both directions (Davenport & Prusak, 1998), as seen in Samancor Chrome. Furthermore, better team performance, a decline in production costs, firm innovative capabilities and firm performance including sales growth is anticipated as revealed in the literature review by (Hansen, 2002; Cummings, 2004; Arthur & Huntley, 2005; Collins & Smith, 2006; Lin, 2007; Mesmur-Magnus & DeChurch, 2009). Hence, it is suggested that Samancor Chrome conduct interviews with their top and middle management to better understand their current management approach, to ensure effective future knowledge sharing and to maintain the existing low power distance culture.

The third cultural dimension masculinity/femininity revealed positive results for this study, indicating that low masculinity and high femininity promoted knowledge sharing at Samancor Chrome. (Rivera-Vazquez et al, 2009) mentioned that a culture demonstrating high femininity establishes an environment of cooperativeness, thus making employees more secure to share their knowledge with other colleagues and at the same time promoting knowledge sharing. With such knowledge sharing practices (Fong & Chu, 2006) avow that employees are more proactive in generating ideas and improving problem solving abilities and as a result, it makes them more responsible. To maintain such a culture, Samancor Chrome needs to investigate the constituents of a cooperative

culture, in order to have it well understood in the organisation to ensure successful knowledge sharing.

The last cultural dimension, uncertainty avoidance in this study, indicated that this dimension had a negative impact on knowledge sharing. The results in this study indicated that high uncertainty avoidance impedes knowledge sharing. From the literature reviewed (Hauke, 2006) argued that in a culture that showed high uncertainty avoidance, employees were not willing to take risk and showed no accountability for decisions making, thus impeding knowledge sharing. Another inhibitor to knowledge sharing was noticeable, when they stated that the building of informal networks was limited. However, from the literature there was no clear indication demonstrating how to address a culture with high uncertainty avoidance. Therefore, it is suggested that future studies in this cultural dimension, needs to be accomplished to identify tools to reduce high uncertainty avoidance cultures.

7.2.2. Recommendations for Future Research

- Sample Size

For purposes of this study, a sample size of only ninety-six (96) respondents was utilised to get a sense of what the data was saying. A larger sample size may be used to execute an extensive analysis which could improve the validity and reliability of the results.

- Target Population

The data collection was gathered from respondents employed at the three chrome manufacturing operations and the two mining operations. To incorporate more employees in this research, either an in depth study within Samancor Chrome or a comparative study with other manufacturing chrome operations such as Xstrata and International Ferrometals, should be undertaken.

- Data Collection Techniques

For this study, questionnaires were the primary data collection method. To enhance the validity and reliability of results in future research, the triangular approach using two others data collection methods should be used, for example, focus groups and interviews.

7.3.CHAPTER CONCLUSION

Knowledge is a vital constituent in the new global economy to ensure and sustain competitive advantage for an organisation. It is therefore an imperative strategic route, which businesses have to undertake in order to survive and to compete effectively in the global environment. For companies to participate actively in the rising global economy they need to be proactive and start thinking about ways to strategically share information and create new knowledge.

The purpose of this study was to investigate whether the four dimensions of culture promoted or impeded knowledge sharing in an organisation. The results

from this study indicated that the theoretically introduced cultural dimensions are relevant factors that have an impact on knowledge sharing.

This study demonstrated three of the four cultural dimensions, namely high collectivism, low power distance and high femininity that promoted knowledge sharing. However, the study indicated that Samancor Chrome displayed a high uncertainty avoidance culture thus impeding knowledge sharing.

The findings of this research suggests that there is an advantage for organisations to know what type of culture they have in order to facilitate knowledge sharing, in an attempt to sustain competitive advantage.

REFERENCE LIST

- Alavi, M., & Leidner, D. (2001). Knowledge management and knowledge management systems: conceptual foundations and research issues. *MISQ Review* , 25 (1), 107-136.
- Ardichvili, A., Maurer, M., Li, W., Wentling, T., & Stuedemann, R. (2006). Cultural influences on knowledge sharing through online communities of practice. *Journal of Knowledge Management* , 10 (1), 94-107.
- Arthur, J. B., & Huntley, C. L. (2005). Ramping up the Organisational Curve: Assessing the Impact of Deliberate Learning on Organisational Performance under Gainsharing. *Academy of Management Journal* , 48 (6), 1159-1170.
- Bartol, K., & Srivistava, A. (2002). Encouraging knowledge sharing: the role of organisational reward systems. *Journal of Leadership & Organisational Studies* , 9 (1), 64-76.
- Bhagat, R. S., Kedia, B. L., Harveston, P. D., & Triandis, H. C. (2002). Cultural Variations in the Cross-Border Transfer of Organisational Knowledge: An Intergrative Framework. *The Academy of Management Review* , 27 (2), 204-221.
- Bircham, H. (2003). The impact of question structure when sharing knowledge. *Electronic Journal of Knowledge Management* , 1 (2), 17-24.
- Bock, G. W., & Kim, Y.-G. (2002). Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing. *Information Resources Management Journal* , 15 (2), 14-21.
- Burke, M. E. (2010, February). *Emerald*. Retrieved May 18, 2010, from [http://www.emeraldinsight.com/products/journals/call_for_papers.htm?id=2000&PHPSESSID=76f93j1pqi2rdfauic8b2tbra2`](http://www.emeraldinsight.com/products/journals/call_for_papers.htm?id=2000&PHPSESSID=76f93j1pqi2rdfauic8b2tbra2)
- Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning Orientation, firm innovation capability, and firm performance. *Industrial Marketing Management* , 31 (6), 515-524.

CEN (European Committee of Standardisation). (2004). Retrieved February 22, 2010, from European guide to good practice in Knowledge management - Part 5: KM Terminology: <http://www.cen.eu/cen/Sectors/Sectors/ISSS/CEN%20Workshop%20Agreements/Pages/Knowledge%20Management.aspx>

Chow, C. W., Deng, F. J., & Ho, J. L. (2000). The Openness of Knowledge Sharing within Organisations: A Comparative Study of the United States and the People's Republic of China. *Journal of Management Accounting Research* , 12, 65-95.

Ciganek, A. P., Mao, E., & Srite, M. (2008). Organisational Culture for Knowledge Management Systems: A Study of Corporate Users. *International Journal of Knowledge Management* , 4 (1), 1-16.

Collins, C. J., & Smith, K. G. (2006). Knowledge Exchange and Combination: The role of Human Resource Practices in the Performance of High Technology Firms. *Academy of Management Journal* , 49 (3), 544-560.

Cooper, D. R., & Schindler, P. S. (2001). *Business Research Methods* (7th ed.). New York: McGraw Hill.

Cummings, J. N. (2004). Work Groups, Structural Diversity, and Knowledge Sharing in a Global Organisation. *Management Science* , 50 (3), 352-364.

Davenport, T. H. (1997). *Information Ecology*. Oxford: Oxford University Press.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: how organisation manage what they know*. Boston, MA.

De Long, D. W., & Fahey, L. (2000). Diagnosing Cultural Barriers to Knowledge Management. *The Academy of Management Executive* , 14 (4), 113-127.

Drucker, P. (2001, November). *The next society: a survey of the near future*. Retrieved February 23, 2010, from The Economist: <http://www.economist.com>

Fong, P. S., & Chu, L. (2006). Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective. *Journal of Construction Engineering and Management* , 132 (9), 928-939.

- Ford, D. P., & Chan, Y. E. (2003). Knowledge sharing in a multi-cultural setting: a case study. *Knowledge Management Research & Practice* , 1 (1), 11-27.
- Gold, A., Malhotra, A., & Segars, A. (2001). Knowledge management: An organisational capabilities perspective. *Journal of Management Information Systems* , 18 (1), 185-214.
- Gupta, A. K., & Govindarajan, V. (2000). Knowledge Flows within Multinational Corporations. *Strategic Management Journal* , 21, 473-496.
- Hansen, M. T. (2002). Knowledge Networks: Explaining Effective Knowledge Sharing in Multiunit Companies. *Organisation Science* , 13 (3), 232-248.
- Harris, R. (2001). The knowledge-based economy: intellectual origins and new economic perspectives. *International Journal of Management Reviews* , 3 (1), 21-40.
- Hauke, A. (2006, April). *The Fondazione Eni Enrico Mattei Note di Lavoro Series Index*. Retrieved April 05, 2010, from <http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm>
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values*. Beverly Hills: Sage Publications.
- Hofstede, G. (1983). The cultural relativity organisational practices and theories. *Journal of International Business Studies* , 14 (2), 75-89.
- Hofstede, G., & Bond, M. H. (1988). The Confucius Connection: From Cultural Roots to Economic Growth. *Organisational Dynamics* , 16 (4), 4-21.
- Hofstede, G. (1991). *Cultures and Organisations: Software of the Mind*. New York: McGraw-Hill.
- Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviours, Institutions, and Organisations across Nations*. Thousands Oaks: Sage Publications.

Hussey, J., & Hussey, R. (1997). *Business Research: A Practical Guide for Undergraduate and Post Graduate Students*. Great Britain: Macmillan Press Ltd.

Hutchings, K., & Michailova, S. (2004). Facilitating knowledge sharing in Russian and Chinese subsidiaries: the role of personal networks and group membership. *Journal of Knowledge Management* , 8 (2), 84-94.

Ipe, M. (2003). Knowledge Sharing in Organisations: A Conceptual Framework. *Human Resources Development Review* , 2 (4), 337-359.

Jackson, S. E., Chuang, C.-H., Harden, E. E., & Jiang, Y. (2006). Toward Developing Human Resource Management Systems for Knowledge-Intensive Teamwork. *Research in Personnel and Human Resources Management* , 25, 27-70.

Kang, Y.-J., Kim, S.-E., & Chang, G.-W. (2008). The Impact of Knowledge Sharing on Work Performance: An Empirical Analysis of Public Employees' Perceptions in South Korea. *International Journal of Public Administration* , 31, 1548-1568.

King, N., Kruger, N., & Pretorius, J. (2007). Knowledge management in a multicultural environment: A South African Perspective. *New Information Perspectives* , 59 (3), 285-299.

Lee, J.-N. (2001). The impact of knowledge sharing, organisational capability and partnership quality on IS outsourcing success. *Information and Management* , 38, 323-335.

Lemon, M., & Sahota, P. S. (2003). *Organisational Culture as a Knowledge Repository for Increased Innovative Capacity*. Retrieved August 8, 2010, from <http://0-www2.warwick.ac.uk.innopac.up.ac.za/fac/soc/wbs/conf/olkc/archive/oklc3/papers/id88.pdf>

Lin, H.-F. (2007). Knowledge Sharing and Firm Innovation Capability: an empirical study. *International Journal of Manpower* , 28 (3/4), 315-332.

- Lucas, L. M. (2006). The role of culture on knowledge transfer: the case of the multinational corporation. *The Learning Organisation* , 13 (3), 257-275.
- McDermott, R., & O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management* , 5 (1), 76-85.
- Mesmur-Magnus, J. R., & DeChurch, L. A. (2009). Information Sharing and Team Performance: A Meta-Analysis. *Journal of Applied Psychology* , 94 (2), 535-546.
- Michailova, S., & Husted, K. (2003). Knowledge-Sharing Hostility in Russian Firms. *California Management Review* , 45 (3), 59-77.
- Minbaeva, D. B. (2007). Knowledge Transfer in Multinational Corporations. *Management International Review* , 47 (4), 567-593.
- Nayır, D. Z., & Uzunçarşılı, Ü. (2008). A cultural perspective on knowledge management: the success story of Sarkuysan Company. *Journal of Knowledge Management* , 12 (2), 141-155.
- Ndlela, L. T., & du Toit, A. S. (2001). Establishing a knowledge management programme for a competitive advantage in an enterprise. *International Journal of Information Management* , 21 (2), 151-165.
- Nonaka, I. (1994). A dynamic theory of organisational knowledge creation. *Organisation Science* , 5 (1), 14-37.
- Park, H., Ribiere, V., & Schulte, W. D. (2004). Critical attributes of organisational culture that promote knowledge management technology implementation success. *Journal of Knowledge Management* , 8 (3), 106-117.
- Reid, F. (2003). Creating a knowledge sharing culture among diverse business units. *Employment Relations Today* , 30 (3), 43-49.
- Riesenberger, J. R. (1998). Executive Insights: Knowledge - The Source of Sustainable Competitive Advantage. *Journal of International Marketing* , 6 (3), 94-107.

- Rivera-Vazquez, J. C., Ortiz-Fournier, L. V., & Flores, F. R. (2009). Overcoming cultural barriers for innovation and knowledge sharing. *Journal of Knowledge Management* , 13 (5), 257-270.
- Saunders, M., Lewis, P., & Thornhill, A. (2003). *Research Methods for Business Students 3rd Edition*. England: Prentice Hall.
- Scarbrough, H. (2003). Knowledge Management, HRM and innovation process. *International Journal of Manpower* , 24 (5), 501-516.
- Sekaran, U. (2003). *Research Methods for Business A Skill Building Approach* (4th Edition ed.). New Jersey: John Wiley & Sons, Inc.
- Tong, J., & Mitra, A. (2009). Chinese cultural influences on knowledge management practice. *Journal of Knowledge Management* , 13 (2), 49-62.
- Triandis, H. (1995). *Individualism and Collectivism*. Boulder: CO: Westview Press.
- Triandis, H. C. (1996). The Psychological Measurement of Cultural Syndromes. *American Psychological Association* , 51 (4), 407-415.
- Usoro, A., & Kuofie, M. H. (2006). Conceptualisation of Cultural Dimensions as a Major Influence on Knowledge Sharing. *International Journal of Knowledge Management* , 2 (2), 16-25.
- Wei, J., Stankosky, M., Calabrese, F., & Lu, L. (2008). A Framework for studying the impact of national culture on knowledge sharing motivation in virtual teams. *Journal of Information and Knowledge Management Systems* , 38 (2), 221-231.
- Wilkesmann, U., Fischer, H., & Wilkesmann, M. (2009). Cultural characteristics of knowledge transfer. *Journal of Knowledge Management* , 13 (6), 464-477.
- Zakaria, N., Amelinckx, A., & Wilemon, D. (2004). Working Together Apart? Building a Knowledge-Sharing Culture for Global Virtual Teams. *Creativity and Innovation Management* , 13 (1), 15-29.

Zikmund, W. G. (2003). *Business Research Methods* (7th Edition ed.). Ohio: South-Western CENGAGE Learning.

APPENDIX 1 – QUESTIONNAIRE

I am a Masters student at the Gordon Institute of Business Science. I am currently conducting research in the area of knowledge sharing. The following questions focus on this area. Please read them carefully and answer as accurately as possible. Your response will be kept strictly confidential. Thank you for your cooperation.

Please would you provide the following biographical information:

Mark the appropriate box with an “X”

1. Gender:

Male	
Female	

2. Age (in years):

< 20	20 - 24	25 - 29	30 - 34
35 - 39	40 - 49	50 - 59	

3. Work Experience

Less than one year	
1 – 5 years	
6 – 10 years	
11 – 20 years	
More than 20 years	

Part B:

4. I would like you to take some time and think about the following questions which deal with knowledge sharing. Please rank in order of importance each statement from 1 to 10 with 1 being the most appropriate and 10 being the least appropriate.

FORCED RANKING	Rank of Importance 1-10
Knowledge flows between two individuals or from one individual to a group when knowledge sharing occurs.	
A process of identification, outflow, transmission and inflow of knowledge in an organisation.	
An activity of transferring knowledge from one person, group or organisation.	
A process involving sharing of ideas, facts, suggestions and proficiency among employees relevant for an organisation's performance.	
A practice in which knowledge by an individual is transformed into a form that can be understood and utilised by other individuals.	
Knowledge sharing plays a significant part in innovation, knowledge application and ultimately the competitive advantage of an organisation.	
A process where individuals mutually exchange both tacit and explicit knowledge to jointly create new knowledge.	
Problem solving is a means of knowledge sharing.	
Knowledge sharing is a voluntary act.	
Knowledge sharing can occur through meetings, email or intranet.	

Part C:

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

	Disagree strongly 1	Disagree 2	Neutral 3	Agree 4	Agree Strongly 5
Employees like to work in a group rather than by themselves					
If a group is slowing me down, it is better to leave it and work alone					
One does better work when working alone than in a group					
Problem solving by groups gives better results than problem solving by individuals					
An employee should accept the group's decision even when he/she personally has a different opinion					

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

	Disagree strongly 1	Disagree 2	Neutral 3	Agree 4	Agree Strongly 5
I am not afraid to share show my ideas with my direct superior.					
I am consulted by my direct superior in his/her decisions.					
My direct superior only shares his/her insights with colleagues of the same stature.					
I have a good working relationship with my direct superior.					
Decision making in my department only occurs top down.					

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

	Disagree strongly 1	Disagree 2	Neutral 3	Agree 4	Agree Strongly 5
Competition between employees usually does more harm than good.					
Everyone is paranoid that someone else can do the job better and quicker so there is very little knowledge sharing.					
I am secure to share my knowledge with others in the organisation.					
I am selfish and do not share my expertise with others in the organisation.					
My knowledge sharing will help others in the organisation to solve problems.					

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

	Disagree strongly 1	Disagree 2	Neutral 3	Agree 4	Agree Strongly 5
My organisation is very much in “ <i>status quo</i> ” and takes the “ <i>do not rock the boat</i> ” approach to management style.					
I often feel nervous or tense at work					
Adopting something new in the organisation is seen as risky and having the potential to create significant problems.					
There is a standard operating procedure in handling work tasks in my department.					
A host of work rules spell out ways to handle work tasks in my department.					

Thank you for participating in this questionnaire. Please be assured that your responses will remain anonymous.