CULTURAL VALUE PRIORITIES OF MANAGERS, SKILLED AND SEMI-SKILLED WORKERS IN THE MINING AND ORE PROCESSING FUNCTIONS OF A SOUTH AFRICAN MINE

SUBMITTED BY
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DECLARATION

I Maartin Jacobus Du Plessis,

Hereby declare that the dissertation entitled;

Cultural value priorities of managers, skilled and semi-skilled workers in the mining and ore processing functions of a South African mine.

Submitted for the qualification Master of Commerce Industrial Psychology at the University of the Free State is my own independent work and that I have not previously submitted the same work for a qualification at another University.

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Maartin Jacobus Du Plessis

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CHAPTER 1 – RATIONALE FOR THE STUDY

1 Introduction

Social culture and business culture are integrated constructs that determine how organisations function as a subsystem of the larger society in which it provides outputs or services (Katz & Kahn, 1978). Values are at the heart of culture and influence most, if not all motivated behaviour (Schwartz, 2006). Values are described by various writers, for example (Feather, 1995, Rokeach, 1973, Schwartz, 1992), as conceptions of desirable behaviour or desirable end states that affect the way individuals perceive and interpret their environment in which they live and work, for example, friendship, respect for tradition, living healthily, equality, ambition, or preserving the natural environment.

Personal identity represents an individual's set of goals, values, and beliefs (Erikson, 1950). Erikson indicates that it is important, because the extent to which this set of goals, values, and beliefs are integrated and internalised, establish the coherent sense of what is known as self (van Hoof & Raaijmakers, 2002). "Traits and values are rooted in different intellectual traditions and tell us different things about how personality works. Traits are 'dimensions of individual differences in tendencies to show consistent patterns of thought, feelings, and actions" (McCrae & Costa, 1999, p. 23). Values as "desirable trans-situational goals" (Schwartz, 1994, p. 21) are at the core of personal identity (Hitlin, 2003) and serve as guiding principles in an individual's live (Schwartz, 1992).

Cultural identity focuses largely on cultural values and practices, ways in which one regards the ethnic or cultural groups to which one belongs and the relative prioritisation by the individual (Schwartz, Byron, Zamboanga & Weisskirch, 2008). Most values are culturally shared, but individuals differ in how they rank the importance of specific values. Values may form important ingredients of a person's self-concept and thus contribute to a person's sense of identity. Values are often shared with others and might constitute the basis of group, professional, political, or cultural identities (Schwartz, 2006). Schwartz et al. (2008) also indicate that a number of constructs is can be grouped or classified under cultural identity. According to various writers these include acculturation orientations (Berry, 1997), ethnic identity (Phinney, 2003), individualism and collectivism (Triandis, 1996), independence and interdependence (Markus & Kitayama, 1991) and communalism (Boykin, Jagers, Ellison &

Albury, 1997). (Schwartz, 2006) also argued these constructs are indicative of the possible ways in which individuals consider their own interaction with others and groups they perceive themselves to belonging to.

Personal identity therefore represents the answer to the question, who am I. Cultural identity is a representation of values that has been internalised from cultural groups to which the person belongs and therefore represents an answer to the question, who am I, as a member of my group, and in relation to other groups (Jensen, 2003). It is important to note that both personal identity and cultural identity highlight the importance of values (Hitlin, 2003). Cultural values that are internalised from groups and personal values guide an individual's life choices and are part of the nomological network of self and as such should be related in some way (Roberts & Donahue, 1994).

If values are at the heart of culture and influence most behaviour as stated earlier, then it is important from an organisational perspective. In this regard (Schwartz, 2006) indicated that behaviour entails a trade-off between competing values as it has positive implications for expressing, upholding, or attaining some values, but negative implications for opposing values. People tend to behave in ways that balance their opposing values by choosing alternatives that promote higher as against lower priority values (Schwartz, 2006).

The Western and African cultural value systems are characterised by individualism and collectivism respectively. These two constructs appear as opposite poles on one dimension of culture (Hofstede, Hofstede & Minkov, 2010). Within an individualist society, people are viewed as independent from the group and priority is given to personal goals over those of the group Behaviour tends to be based on personal attitudes rather than group norms (Triandis, 2001). Conversely, collectivist societies emphasise people's interdependence within the group. Group goals are given priority and people's behaviour is largely regulated by group norms rather than personal attitudes (Triandis, 2001).

In South Africa most organisations, including Mining organisations, are still conceptualised and structured in a Western/Eurocentric mould (individualism) (Van der Wal & Ramotsehoa, 2001). The culture of organisations is dominated by these values with a predominantly male top management structure, not always necessarily white, but westernised, Du Plessis (2012) and Laher (2013) confirm this finding. In most cases top management ignore the fact that the

largest proportion of the population/workforce is neither European nor American, but African (Xiaoxing, Austin & Glass, 2008). Many employees are unable to identify with these values and little congruence exists between organisational values and goals, and those of the general workforce (Du Plessis, 2012).

The problem is enhanced by the fact that the mining industry is a labour intensive working environment, which utilise large basic and semi-skilled workforces to perform their core operational activities. Semi and basic skilled employees (56% of the working population according to statistics SA) are mostly African and they still value and integrate the traditional African cultural values (collectivism) in their daily lives (Naidoo & Mahabeer, 2006, Statistics-South-Africa, 2012).

One of the major effects of Apartheid on the South African society was access to quality education for the majority of South Africans. Hofstede et al. (2010, p. 64) related it to class as follows; "Classes differ in their access to and their opportunities for benefiting from the advantages of society, one of them being education. A higher education automatically makes one at least middle class. Education, in turn, is one of the main determinants of the occupations to which one can aspire, so that in practice in most societies, social class, education level, and occupation (complexity level of work one can aspire to) are closely linked". This inequality is most visible in the existence of different social classes: upper, middle, lower, or levels of work or whatever the need is to divide it into. This may vary within regions in a country and by countries (Hofstede et al., 2010). In the working environment it is very prominently displayed in the various levels of work, which is directly linked to the level of skills and knowledge application of employees, and the associated level of work linked to it (Jaques, 1989, 1991).

In an abnormal society where the majority of South Africans became reliant on collectivist structures (Laher, 2013), citizens are generally expected to be either equally poor or equally wealthy. As a result the mining industry could become targets of the African PHD (pull him down) syndrome (Shonhiwa, 2006). This is most visible through the divide in the value structure of managerial teams (Western/European individualists) and the highly unionised basic and semi-skilled employees, and the continuous "battle" between the "perceived" unfairness (in quotes, because management and unions will differ in opinion about this) in the treatment, remuneration, working conditions and employment benefits of these employees. Collectivism and in-group solidarity is emphasised as a core value of this group of workers by

the Cosatu and NUM slogan of "an injury to one is an injury to all". This slogan represents some of the key values of Ubuntu. These are, (a) respect for the dignity of others, (b) group solidarity – an injury to one is an injury to all, teamwork (c) none of us is greater than all of us, service to others in the spirit of harmony, interdependence (d) each one of us needs all of us (Mbigi, 2005).

In direct contrast to the above is the leader or manager of the Western based organisation with a business values system and culture that forces them to focus only on managing their businesses or functions, with one objective, to drive the aspects that are visible and measurable (Du Plessis, 2012, Van der Wal & Ramotsehoa, 2001). If they do not, they are penalised by both their short and long term incentive schemes (Du Plessis, 2012). In this scenario, the need to establish an integrated business culture, incorporating the social culture of these diverse workforces is not a core business or leadership objective (Du Plessis, 2012).

There is increasing pressure on the mining industry to reform and often reform is forced through the implementation of strict legislation on almost every aspect of their business value chains, to ensure the protection of mining rights, mining communities, employees, avoid situations similar to the recent events during the past wage negotiations at Lonmin and other large mines. This is highlighted by the Price-Waterhouse-Coopers (2012, p. 5) report on global trends in the mining industry. "With mining continuing to climb up the political priority list at a time of budget deficits and changing economic and social priorities, many governments are looking at reforms to their mining codes, grappling with sustainability issues and revisiting their approach to taxation and royalties. The shift in balance is a positive one for the mining industry, but it will not be simple and will take some managing. All of this highlights that the game has changed".

In Africa, capitalism is not as dominant as on other continents, and socio-cultural settings across all organisations rigorously apply. The African Ubuntu (humanness) principles that are more socialistic and humanistic are critical determinants of any successful African organisation (Mangaliso, 2001). As indicated by the Price-Waterhouse-Coopers (2012) report, the mining industry will require remodelling in the future. In the South African context, this might imply remodelling from the current Western mould to an integrated Western and African business model.

An understanding of the common and opposing values amongst employees at the various levels of work will enable leaders, managers and supervisors to establish a more inclusive organisational culture that will allow the largest portion of the workforce to identify with and acculturate these values. Managing an African business in complex multicultural societies and ethnic groupings, requires a cooperative blending of cultural elements from both the various social and business cultures as represented in the organisation, and the societies in which it functions (Du Plessis, 2012).

1.1   Problem formulation

It is evident that there are major differences between Western and African values and the associated cultures which is evident in the work of Schwartz et al. (2001) and Hofstede et al. (2010). In South Africa, businesses are designed around the Western mould and in principle support the western values, and in most cases these values are entrenched as the dominant values and culture (Mbigi, 2005). However, the largest portion of the workforce in the mining and manufacturing industry is not western nor European, but African and might not be able to associate themselves with most of these values (Du Plessis, 2012). The trade-off between opposing values could have an impact at the subconscious level and result in increased stress levels, and behaviours such as uncooperativeness, aggressive confrontation, mistrust, insubordination, absenteeism, which eventually influence team performance. Schwartz (2006, p. 961) highlights this "Behaviour entails a trade-off between competing values as it has positive implications for expressing, upholding, or attaining some values, but negative implications for opposing values"

Organisational culture is considered as one of the keys to improved organisational performance and is in most cases considered as the driving force behind sustainable business success (Saffold, 1988). Organisations with well-established cultures generate an almost tangible social force field of energy that empowers employees and drives the organisation toward superior performance. Several management researchers have connected strongly shared values with commitment, self-confidence, ethical behaviour, and reduced job stress (Saffold, 1988). Strong organisational cultures are indicative of employees that value the organisation's core values and share them. High attachment to, or acceptance of, the organisation's core values lead to higher levels of commitment and results in a stronger and more effective organisational culture because of the high degree of integration (Schneider, Salvaggio & Subirats, 2002). According to Robbins and Judge (2011), a strong organisational culture reduces employee turnover

because it demonstrates high agreement about what the organisation represents. Such unity of purpose builds cohesiveness, loyalty and organisational commitment.

A society or organisation without a compelling culture is like a person without a personality, flesh and bones, no life force and no soul (Mintzberg, 2009). Society and organisations function best where committed people are working in a cooperative relationship based on mutual respect and common goals, or referred to as community (Mintzberg, 2009). Destroy this and the whole institution of business collapses, as is evident in so many organisations today (Mintzberg, 2009).

Investigating the value priorities of workers within the levels of work in an organisation, using Schwartz's PVQ questionnaire, will assist in establishing an understanding of values from an organisational context. Exploring value priorities at the various levels of work with formal research might from the foundation of future research in this area.

1.2   Research question

People tend to behave in ways that balance their opposing values by choosing alternatives that promote higher as against lower priority values (Schwartz, 2006).

- Do differences exist in cultural value priorities among different levels of employees in a South African Mine?

1.3   Research objective

The objective of the research will be to determine by means of a non-experimental research design if differences exist in cultural value propositions amongst employees working at different levels of work in a South African mine.

1.4   Research hypothesis

This studies hypothesis is formulated as follows;

Null hypothesis (H0)
There is no statistically significant difference in scores achieved on value priorities between Managers, supervisors, skilled, semi-skilled and basic skilled workers in the Mining and Ore Processing functions of a South African Mine.

Hypothesis (H1)

There is a statistically significant difference in scores achieved on value priorities between Management and skilled workers in a South African mine.

Hypothesis (H2)

There is a statistically significant difference in scores achieved on value priorities between Management and semi-skilled workers in a South African mine.

Hypothesis (H3)

There is a statistically significant difference in scores achieved on value priorities between Management and basic-skilled workers in a South African mine.

Hypothesis (H4)

There is a statistically significant difference in scores achieved on value priorities between skilled and semi-skilled workers in a South African mine.

Hypothesis (H5)

There is a statistically significant difference in scores achieved on value priorities between skilled and basic-skilled workers in a South African mine.

Hypothesis (H6)

There is a statistically significant difference in scores achieved on value priorities between semi-skilled and basic-skilled workers in a South African mine.

1.5   Outline of the study.

This chapter defined core aspects of values and its relationship to the South African society and business environment. Indication is that there is a possible disconnect between the various levels of work, management, skilled, the semi and basic skilled, in the mining industry. This present major challenges when organisations want to establish inclusive organisational cultures. The ability to identify the differences in value priorities at the various levels of work will enable organisations to create inclusive organisational cultures.

In Chapter 2, the multi-dimensional structure and function of human values focus on the origins of values and linking it to personality. The nature of human values is explored through a reflection on the available literature and a description of Schwartz's values framework. In conclusion, this chapter reflects on individual and organisational value congruence, how values influence attitudes, behaviour and motivation, and lastly the reasons why it is necessary to understand value diversity at the various levels in organisations.

In Chapter 3, the study attempts to establish the link between values, organisational hierarchy and an individual's ability to function at a specific level of work. As a result, the chapter focus on one of the most important proxy's to study nation level differences in culture, individualism versus collectivism, then on levels of work, education and income and the link with intelligence. Linking organisational hierarchy and the values construct is achieved through an investigation into decisionmaking hierarchies. Lastly, evidence is provided to indicate what the possible differences in value priorities might be at the various levels of work.

Chapter 4 explains the statistical techniques applied to analyse the research question, to confirm or reject the hypotheses of the study. This chapter therefore reflects on the following aspects of the research,

- The rationale for using a non-experimental research design
- An explanation of the reasons for utilising a convenience sampling approach, with detail about the sample size and a reflection on representativeness with the national population
- The approach to collecting data and a reflection on Schwartz's Portraits Value Questionnaire, the validity, reliability and test re-test reliability is explained in motivation for the use of the instrument
- A description of statistical techniques used to determine the validity and reliability of the instrument and to assess the various hypothesis of this study.

In Chapter 5, the aim is to explore the relationships within and between variables in order to understand and explain the research question of the study. Using a confirmatory deduction approach, this research approach utilised the existing theory on values as formulated by Schwartz to study value priorities typically found in the South African mining industry, at the various levels of work. The researcher will attempt to identify the core differences and explore the reasons for these. Ultimately, it might be possible to identify those values, which organisations can successfully integrate as part of their core values and overall business culture, to create synergy in work environments with a diverse skills base. The main contribution of this study is that it provides insights into the value priorities at various levels of work.

CHAPTER 2 – THE MULTIDIMENSIONAL STRUCTURE OF HUMAN VALUES

2   Introduction

Values have a long tradition of being associated with shaping, directing and guiding human behaviour in and out of organisations (Boxx, Odom & Dunn, 1991). An organisation's culture influences all aspects of organisational life and can potentially give a very strong sense, belief, or understanding to employees about the way things are done (Boxx et al., 1991). One of the major influences of an organisation's culture is the organisation's system of values. If widely held throughout the organisation, values will eventually affect the way customers are perceived and treated, the way employees, and their contributions are viewed and rewarded, and the way in which the future is anticipated and managed. Therefore, the system of values plays a critical role in the successes of an organisation (Boxx et al., 1991)

There is growing evidence to suggest that values within an organisation will directly influence an individual to behave in ways that support the organisation's goals and objectives (Meglino, Ravlin & Adkins, 1989). In the organisational psychology literature, there is considerable agreement that culture involves a set of shared cognitions by members of a social unit. These cognitions are acquired through social learning and socialisation processes, and they include assumptions and worldviews, values, behavioural norms, patterns of activities, and material artefacts (Rousseau, 1990).

This chapter, the multi-dimensional structure and function of human values, focusses on the origins of values and linking it to personality. The nature of human values is then described through a reflection on the available literature, followed by a focussed description of Schwartz's values framework. In conclusion, this chapter reflects on individual and organisational value congruence, how values influence attitudes, behaviour and motivation, and lastly the reasons why it is necessary to understand value diversity at the various levels in organisations.

2.1   The nature of human values

Kluckhohn (as cited in Hofmann, 2009) indicated that values exist "Because social life would be impossible without them; the functioning of the social system could not continue to achieve

group goals, individuals could not get what they want and need from other individuals in personal and emotional terms, nor could they feel within themselves a requisite measure of order and unified purpose. Above all, values add measure of predictability to social life".

Values and attitudes show marked differences in variability over the life course, values are more durable than attitudes. Hitlin and Piliavin (2004) indicate that values do not act only as internalised representations. Values play an important, if unarticulated, role in action. Values are commonly considered as ideal ends within an action situation, the need to incorporate the means through which they will be reached (Hitlin & Piliavin, 2004). In general, values hold a higher place in an individual's internal evaluative hierarchy than attitudes. Compared with attitudes, values are more central to issues of personhood (Hitlin, 2003), and are less directly implicated in behaviour (Schwartz, 2006).

Values are at the heart of culture and influence most, if not all motivated behaviour (Schwartz, 2006). Cieciuch and Schwartz (2012) summarised five formal features of values: Values (a) are concepts or beliefs, (b) pertain to desirable end states or behaviours, (c) transcend specific situations, (d) guide selection or evaluation of behaviour and events, and (e) ordered by relative importance. Most values are culturally shared, but individuals differ in how they rank the importance of specific values. Values may form important elements of a person's self and thus contribute to a person's sense of identity. Sharing values with others could constitute the basis of group, professional, political, or cultural identities. Particular values may form the basis of moral and ethical rules of conduct, which are sometimes explicitly formulated, such as the Hippocratic Oath or the Ten Commandments (Schwartz, 2006).

The core of culture is formed by values. Values are broad tendencies to prefer certain states of affairs to others. Values are feelings with an added arrow indicating a plus and a minus side (Hofstede et al., 2010). Values deal with opposite unions like: good versus bad, dirty versus clean, dangerous versus safe, forbidden versus permitted, decent versus indecent, moral versus immoral, ugly versus beautiful, unnatural versus natural, abnormal versus normal, irrational versus rational (Hofstede et al., 2010). Hofstede et al. (2010) indicate that values are acquired early in live. Human physiology provides a person with a receptive period of some ten to twelve years, during which they are able absorb, quickly and unconsciously the necessary information from the environment. This includes symbols (such as language), heroes (such as parents), and rituals (such as toilet training), and, most important, it includes an individual's basic values. At

the end of this period, individuals gradually switch to a different, conscious way of learning, focusing primarily on new practices (Hofstede et al., 2010).

This is supported by Schein (2010) as he indicated that all group learning ultimately reflects someone's original beliefs and values, his or her sense of what ought to be, as distinct from what is. When groups are formed or when facing a new task, issue, or problem, the first solution proposed to deal with it, reflects on some individual's own assumptions about what is right or wrong, what will work or not work (Schein, 2010).

2.2   The origin of values creating the differences in basic individual values

Although there are various value antecedents, the focus in this section is on the antecedents that influence the individual's ability to obtain/achieve a better education and eventually an occupation. Skills and knowledge acquisition through formal or informal education, is one of the main determinants of the occupations to which one can aspire. In practice, in most societies, social class, education level, and occupation (level of work) are closely linked (Hofstede et al., 2010). It is important for this study, as levels of work are directly related to the level of skills and knowledge required to perform activities in occupations at lower and higher levels of complexity in the organisational hierarchy of work (Jaques & Clement, 1991, Paterson, 1972b). Schwartz (2006) refers to some of these antecedents as background variables that influence values and behaviours, specifically opposing behaviours where there will be a trade-off between values.

The literature on how values are established/entrenched cover many disciplines (Hitlin & Piliavin, 2004), below are some extractions from the literature on three possible antecedents and their influences on values.

2.2.1 Social class, occupation, and education:

The structure of divisions in a society is determined by the social or economic grouping of its members and directly influence values that are related to the type of occupation a person might strive to achieve (Kohn & Schooler, 1983). Organisational hierarchy (levels of work) is a reflection of social structure, meaning that the formative context of a society is reflected in its institutional structures, such as the business organisations of that society (Crawford & Mills, 2011).

Kohn and Schooler (1983) indicate that as years of education increase: (a) the value of self-direction also increases, while (b) values of conformity and tradition decrease. The findings of Prince-Gibson and Schwartz (1998) suggests that level of education directly affects value priorities, which in turn guide individuals into occupational roles. Research in the social structure and personality tradition has shown that social class influences individual values through three class-typical occupational conditions: closeness of supervision, the nature of work, and substantive complexity of work (Longest, Hitlin & Vaisey, 2013). Individuals of lower educational attainment (and generally occupational positions) are more concerned with the values of physical conditions, nature of supervision, security, and fringe benefits, whereas those of higher levels stress self-expression and development, creativity, challenge, opportunity for personal achievement, active personal relationships, and the benefit of work (Kohn & Schooler, 1983).

The middle class is distinguished by occupation, education, and income. Although social class is most often associated with income, it is occupation (level of work) that best discriminates between classes (Morton, 2004). According to Williams (as cited in Kohn, 1989), the most important component of social class is education. Education is directly related to the social stratification of occupational position (Kohn, 1989). Social class is partially determined by the values acquired through educational experiences. In fact, there is a larger value gap between the more and less educated than between the rich and poor (Rokeach, 1973). It might then be possible to argue that the divide between rich and poor in South Africa stems from access to education; it is acknowledge that it is not the only factor.

Although mentioned in the introduction, Hofstede's link to social class and education is very specific and is worth noting again in this section, "Classes differ in their access to and their opportunities for benefiting from the advantages of society, one of them being education. A higher education automatically makes one at least middle class. Education, in turn, is one of the main determinants of the occupations to which one can aspire, so that in practice in most societies, social class, education level, and occupation (complexity level of work one can aspire to) are closely linked" (Hofstede et al., 2010, p. 64).

Education has a positive relationship with achievement, self-direction and universalism; those with more education want to succeed individually but are also concerned for the equality of others (Longest et al., 2013).

2.2.2 Family characteristics and socio-economic status

Longest et al. (2013) found that people who are married are more likely to hold traditional and conformist values, but at the same time are not as concerned with the welfare of generalised others. Values are thought to develop initially as a function of the parents' socio-economic positions (Johnson, 2002). Aspirations (achievement ambitions more generally) vary by social class, and the basic status attainment model provide the key link between the socio-economic backgrounds of individuals and their later educational and occupational attainments (Johnson, 2002).

Gecas and Seff (1990) listed three primary mechanisms through which parents' values influence children's values: (a) occupational/social class influences, (b) perceptions of value similarity, and (c) parental behaviours/childrearing practices. There is a high level of perceived congruence between parents' and children's values (Gecas & Seff, 1990), although it is important to distinguish between perceived and actual value congruence. The observed similarity of values is greater than actual similarity within families, similarity increases as children perceive parents' values more accurately (Whitbeck & Gecas, 1988). Value congruence is especially high with respect to values dealing with education, career, and major life concerns. Glass, Bengtson and Dunham (1986) found that socio economic status inheritance processes do account for a substantial amount of observed parent-child similarity, but parental attitudes continue to predict children's orientations after childhood. Parental attitudes influence children relatively strong and stable across age groups, while parental influence decreases over time (Glass et al., 1986). This highlights the importance of family socialisation in the development of children's ideologies.

Parental social economic status (SES) can be viewed as an indicator of the cognitive complexity of a child's environment (Gecas & Seff, 1990). Higher parental SES can lead to more and varied possessions and to the greater availability of more complex stimuli to children. Luster, Rhoades and Haas (1989) found that social class is correlated with differences in childrearing behaviours, including an emphasis on supportive parenting among those from higher social classes who value self-direction. Both parents' values are similarly important and are influenced by occupational position and SES conditions (Hitlin & Piliavin, 2004). Kasser, Ryan, Zax and Sameroff (1995) found that highly materialistic children came from less-advantaged families. Alwin and Krosnick (1991) suggest that the influence of parents on their children's values extends into adulthood.

2.2.3 National/demographic:

The most common dimension in cross-national research is the individualist-collectivist dimension (Markus & Kitayama, 1991). Other authors hold that it is more important to know the values of individuals than the collectivist/individualist leanings of the nation for addressing certain concrete business practices (Kirkman & Shapiro, 2001). Hofstede (2001) focused extensively on national-level patterns of values, arguing that values form a stable portion of national culture. Longest et al. (2013) found that country-level factors have a significant influence on individual values. This influence is primarily shaped by the overarching religious (i.e., Catholic vs. Protestant) and political-economic (i.e., Communist or not) history of the country.

Johnson (2002) indicated that communities differ in the values they hold and encourage in children. Members of rural communities are often less materialistic and more conservative in orientation, and adolescents reared in such communities may not emphasise extrinsic rewards, like pay, but rather stress job security.

National identification has profound consequences that may range from extreme self-sacrifice for the benefit of compatriots to endorsement of brutal violence against out groups (Roccas, Schwartz & Amit, 2010). Within each country, there are extensive individual differences in the extent to which people identify with the country. Some people view their national identity as a core aspect of their self-concept others attribute only limited importance to it. Roccas et al. (2010) indicated that few studies have examined the role of values in explaining the extent of identification with a nation.

2.2.4 Other antecedents of values

It is important to note that there are other antecedents described in the literature and these are gender, race, religion and age (Hitlin & Piliavin, 2004, Longest et al., 2013)

2.3   Personality and the link with values and culture

Personality refers to an individual's distinctive patterns of cognitions, affects, motivations, and behaviours. These patterns are in a continuous process of change and are only temporally stable, and reflect the organisation of the biological and psychological systems within the individual. Personality traits are evolved psychological structures that repeatedly contribute to successful solutions that require adaptive solutions to problems. Personality traits may

influence person variables, which are acquired psychological structures for getting along in the world (Chi-Yue, Young-Hoon & Wan, 2008).

Buss and Greiling (1999) indicated there are at least four explanations for the differences in individuals and personality, the reader should specifically note the circumstantial adaptations in personality:

- Differences in personality are genetic alternative strategies.
- Differences in personality are representation in relation to variable strategies throughout life course.
- Differences in personality are due to circumstantial differences and personality reflects that contexts.
- Personality differences emerge through adjustment/calibration to various thresholds and exposures during the life cycle of humans.

In line with this, McAdams and Pals (2006) attempted to consolidate personality and its many areas into one theoretical framework. They proposed five principles; based on theoretical and empirical evidence that social scientists should consider when they try to make sense of personality. Values are and integrated part of personality, as indicated in the introduction, the extent to which this set of goals, values, and beliefs are integrated and internalised, establish the coherent sense of what is known as self (van Hoof & Raaijmakers, 2002). Although all five principles are important from a personality perspective, factors which are indicative of the flexibility in personality during an individual life's course that is of specific interest to this study. The framework of five fundamental principles as defined by McAdams and Pals (2006) are as follows;

- **Principle 1: Evolution and Human Nature**
  Human lives are individual variations on a continuum of gradual change and development, also commonly referred to as evolution. Evolutionary theory should provide the first principles for any scientific understanding of personality. It simply makes no scientific sense to think about the characteristics that constitute human nature, without considering how and why those characteristics evolved. This enables the description of the established individuality and the possible variations most likely to be visible or noticed. Those visible variations in personal characteristics which is noted by

people in many different cultures (Church, 2000), may be viewed as the core set of behavioural (dispositional) traits.

- **Principle 2: The Dispositional Signature (Overall behavioural tendencies to respond to situations in stable and predictable ways)**
  "Dispositional traits are represented by those broad non-conditional and implicitly comparative dimensions of human individuality, which is commonly referred to as extraversion, dominance, friendliness, dutifulness, depressiveness, the tendency to feel vulnerable, and so on" (McAdams & Pals, 2006, p. 210).

- **Principle 3: Characteristic Adaptations (Recognisable variations in individuality)**
  Beyond dispositional traits, human lives vary with respect to a wide range of motivational, social cognitive and developmental variations or adaptations, contextualised in time, place, and/or social role. Characteristic adaptations include facets of motives, objectives (goals), plans, strivings, strategies, values, righteousness, self-regard, conceptual representations of significant others, developmental tasks, and many other aspects of human individuality that speak to motivational, social cognitive, and developmental concerns. The distinction between dispositional traits and characteristic adaptations may not necessarily be clear in every case, but more closely linked to motivation and cognition than are traits. Environmental and cultural situation are therefore more likely to influence characteristic adaptations than in the case of traits. Variations in human individuality are more likely to be associated with situational anchored personality processes and everyday personality dynamics than are traits (McAdams & Pals, 2006).

- **Principle 4: Life Narratives (stories) and the Challenge of Modern Identity**
  If dispositional traits then provide the outline and characteristic adaptations fill in the details of human individuality, then life stories or the narrative identity give individual lives their unique and culturally anchored meanings. "Common patterns across life stories, especially within given cultures can be identified, and these common patterns can speak to important and measurable individual differences between people. Individual differences in narrative identity are not reducible to differences in dispositional traits or characteristic adaptation" (McAdams & Pals, 2006, p. 210).

- **Principle 5: The Differential (distinguishing) Role of Culture**

  The influence of culture and social environments on personality is complex and multidimensional, but it depends greatly on what aspects of personality are chosen. At the level of dispositional traits, culture provides display rules and demand characteristics for behavioural expression, but culture have little impact on the magnitude or strength of traits. At the level of characteristic adaptations, culture sets agendas for the timing and content of goals, strivings and relational patterns. Culture has its strongest impact at the level of life narrative, providing a menu or collection of narrative forms from which individuals draw in making meaning out of their lives (McAdams & Pals, 2006).

McAdams and Pals (2006) indicated that the many approaches to define personality, explicitly or implicitly invoke a domain of human individuality that is more related to motivation and cognition, than is the case with traits. Personality appears to be more open to external and cultural influences, specifying features of human individuality that are more likely to change over time, in contrast to traits that remains relatively stable. It is however, more associated with situationally anchored personality processes and everyday personality dynamics than are traits (McAdams & Pals, 2006).

Personality and values are interrelated constructs, Roccas, Sagiv, Schwartz and Knafo (2002) related the Five Factor Model of personality to the basic values theory of Schwartz's and reported that Agreeableness correlates positively with values of benevolence and tradition. Openness correlates with the values of self-direction and universalism. Extroversion correlates with the values of achievement and stimulation. Conscientiousness correlates with the values of achievement and conformity. Roccas et al. (2002) claim that their findings are in agreement with the findings of (Dollinger, Leong & Ulicni, 1996) and Luk and Bond (1993), which indicates a degree of overlap between the domains of personality and values.

During their life, individuals encounter many different groups or cultural settings during their life. Every group or category of people carries a set of common mental programmes that constitutes its culture. All people belong to a number of different groups and categories at the same time. It is therefore unavoidable for individuals not to adopt several layers of values, corresponding to the different levels of culture (Hofstede et al., 2010).

2.4   The basis of Schwartz's value theory

When individuals think about values, they normally reflect on the things they belief to be important in life. Individuals adopt numerous values, but they attach varying degrees of importance to these values (Schwartz, 2006). Schwartz and Bilsky (1987, p. 551) summarised five features common to most definitions of values, "According to the literature, values are (i) concepts or beliefs, (ii) about desirable end states or behaviours, (iii) that transcend specific situations, (iv) guide selection or evaluation of behaviour and events, and (v) are ordered by relative importance."

Schwartz's value theory adopts a conception of values with six main features that he identified as implicit in the work of many Social Scientists (Schwartz, 2006, 2012, Schwartz & Bilsky, 1987). Enhancing Schwartz's features of values with additional literature provide the following results;

- **Values are beliefs** linked inseparably to affect. When values are stimulated, they are integrated with feeling (Schwartz, 2006). Values are assumed to be supported, more by their affective component than by their cognitive component. Values are socially entrenched, through the teaching of moral absolutes; they are representations of emotions and are often employed in support of an individual's affective reactions (Maio & Olson, 1998). People for whom independence is an important value become aroused if it is threatened, despair when they are helpless to protect it, and are happy when they can enjoy it (Schwartz, 2006).

  Because values have both cognitive and affective components (Ball-Rokeach, Rokeach & Grube, 1984), the relationship is shared. Experiences, based on social conditions, norms, and expectations, influence the formation and development of value systems via psycho-physiological responses or emotions. Value priorities later influence the preference for particular emotions (Johnson, 2002).

- **Values refer to desirable goals that motivate action**. Values express different motivational goals. Schwartz (1994) suggested that values are not simply abstract conceptions of the desirable, but are motivational. Rokeach (1973) and Schwartz

(1992) indicate values express basic human needs and these needs, by definition, motivate social behaviour.

Feather (1992) integrated Rokeach's approach to values into the expectancy value approach to need achievement, by arguing that values are one class of motives that lead individuals to act according to what they think is logically correct. An individual's values influence the attractiveness of different goals, consequently, the motivation to attain these goals. Feather (1992) has confirmed the relationship between values and ability perceptions, suggesting that values are determined by influences other than just the difficulty of the task. These influences could include the features of the goal itself, the importance of success and failure to the individual, and the probability of succeeding with the task.

Individuals for whom social order, justice, and helpfulness are important values, are motivated to pursue these goals (Hitlin & Piliavin, 2004). Williams (as cited in Schwartz, 2006) argued that values are not motivational in an emotional sense, but rather are cognitive structures that provide information that gets coupled with emotion and leads to action. Hitlin and Piliavin (2004) provides that values are not the sole motivational factor guiding action; values act in concert with other motives. In addition to initial motivation, values seem to be related to the commitment individuals maintain in the face of adversity (Hitlin & Piliavin, 2004).

- **Values transcend specific actions and situations**. Obedience and honesty, for example, are values that may be relevant at work or in school, in sports, business, and politics, with family, friends, or strangers. This feature distinguishes values from narrower concepts like norms and attitudes that usually refer to specific actions, objects, or situations (Schwartz, 2006). Rohan (2000) indicated that individuals will be motivated to engage in situations that are similar to other situations that resulted in positive affect (or an absence of negative affect), to be with people who enable positive affect (or minimise negative affect), and to behave in ways that will produce positive affect (or reduce negative affect).

- **Values serve as standards or criteria**. Values guide the selection or evaluation of actions, policies, people, and events. People decide what is good or bad, justified or

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illegitimate, worth doing or avoiding, based on possible consequences for their cherished values (Schwartz, 2006). Rokeach (1973) stated that values might be learned in an "all-or-none" manner with limited or no conscious reflection. He used the following example, parents do not teach their children to treat people just a little equally or to be a little honest. In practice, there is firm instruction to children that these principles are important, and anticipating in time that the virtuousness or goodness of the principle is obvious or will become obvious in time. In society when individuals act against an accepted value, that person's behaviour is socially endorsed or rejected. The impact of values in everyday decisions is rarely conscious, but enters awareness when the actions or judgments an individual is considering conflicts with different values that are cherished (Schwartz, 2006).

- **Values are ordered by importance** relative to one another. People's values form an ordered system of value priorities that characterise them as individuals (Schwartz, 2006). People rate values in terms of their importance as guiding principles in their life, whereas attitudes are rated using scales that reflect varying degrees of favourability toward an object (Maio & Olson, 1998). Individuals may consider particular values to be important because they attach strong, positive feelings to the values and not because they associate convincing arguments with the values (Maio, Olson, Allen & Bernard, 2001).

- **The relative importance of multiple values guides action**.
  Feather (1992) indicated that personal value priorities are intimately part of the sense of self and Bilsky and Schwartz (1994) that it is a type of personality disposition, Rohan (2000) concludes that it then implies that all attitudinal and behavioural decisions, and actions are ultimately associated with personal value priorities. Therefore, personal value priorities results in decisions and a consequent action. Any attitude or behaviour typically has implications for more than one value. The trade-off among relevant, competing values is what guides attitudes and behaviours (Schwartz, 1992, 1996). Values contribute to action in specific situations which is relevant (it is therefore likely to be activated) and important to the individual (Schwartz, 2006).

According to Schwartz (2006), the above reflects on the features of all values. What distinguishes one value from another is the type of goal or motivation that the value expresses.

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(Schwartz (1992), 2006)) theorised that basic values form into a coherent system that underlies and can help to explain individual decisionmaking, attitudes, and behaviour. This coherent structure arises from the social and psychological conflict or congruity between values that people experience when they make everyday decisions

2.4.1 The universal nature and the structure of value relations

The basic social function of values is to motivate and control the behaviour of group members Parsons (as cited in Schwartz, 2006). (Schwartz (2006), 2012)) indicated two critical mechanisms motivate and control behaviour, values serve as internalised guides for individuals; values relieve the group of the necessity for constant social control. Secondly, individuals invoke values to define particular behaviours as socially appropriate, to justify their demands on others, and to stimulate desired behaviours. The universal nature of Schwartz's value hierarchy is explained through the three demands of human nature and social functioning; (1) promoting and preserving cooperative and supportive relations among members of primary groups. The most critical focus of value transmission is to (2) develop commitment to positive relations, identification with the group, and loyalty to its members. (3) Individuals must be motivated to invest the time, the physical and the intellectual effort needed to perform productive work, to solve problems that arise during task performance, and to generate new ideas and technical solutions. It is socially functional to legitimise gratification of self-oriented needs and desires to the extent that it does not undermine group goals. Rejection of gratification will frustrate individuals, leading them to withhold their energies from the group and its tasks (Schwartz, 2006, 2012). Schwartz et al. (2012) refined this to indicate that that the universal nature of the value hierarchy is grounded in one or more of three universal requirements of human existence with which people must cope and they are the: (1) needs of individuals as biological organisms (2) requisites of coordinated social interaction and, (3) requirements for the smooth functioning and survival of groups.

2.4.1.1 *The ten lower order values*

Schwartz's value hierarchy defines four higher order values clustered together to form two higher-order dimensions of values: openness to change versus conservation and self-enhancement versus self-transcendence, and these four higher order values are divided into ten lower order values (Lei and Liu, 2012). Table 2.1, below, list the ten basic values identified in the theory, their conceptual definitions and components of the definition.

Table 2.1 - Definition of the Ten Basic Values

Value	Motivational Goal	Components of the Definition
Security	Safety, harmony, and stability of society, of relationships, and of self	Societal security Personal security. Family security: Safety for loved ones. National security: Protection of the nation from enemies. Social order: Stability of society. Cleanliness: Neatness, tidiness. Reciprocation of favours: Avoidance of indebtedness
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Politeness: Courtesy, good manners. Obedience: Dutiful, meet obligations. Self-discipline: Self-restraint, resistance to temptation. Honour parents and elders: Showing respect.
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provides	Maintaining cultural and religious traditions. Humility: Modesty, self-effacement. Acceptance of my portion in life: Submission to life's Circumstances. Devotion: Hold to religious faith and belief. Respect for tradition: Preservation of time-honoured customs. Moderate: Avoiding extremes of feeling or action.
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact	Caring for in-group members Helpful: Working for the welfare of others. Honesty: Genuineness, sincerity. Forgivingness: Willingness to forgive others. Loyalty: Faithful to my friends, group. Responsibility: Dependable, reliable.

Value	Motivational Goal	Components of the Definition
Universalism	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature	Broadminded: Tolerant of different ideas and beliefs. Wisdom: A mature understanding of life. Social justice: Correcting injustice, care for the weak. Equality: Equal opportunity for all. A world at peace: Free of war and conflict. A world of beauty: Beauty of nature and the arts. Unity with nature: Fitting into nature. Protecting the environment: Preserving nature.
Self-direction	Independent thought and action choosing, creating, exploring	Autonomy of thought. Autonomy of action. Creativity: Uniqueness, imagination. Freedom: Freedom of action and thought. Independence: Self-reliance, self-sufficiency. Curiosity: Interest in everything, exploration. Choose own goals: Select own purposes.
Stimulation	Excitement, novelty, and challenge in life	Daringness: Adventure-seeking, risk taking. A varied life: Filled with challenge, novelty, and change. An exciting life: Stimulating experiences.
Hedonism	Pleasure and sensuous gratification for oneself.	Pleasure: Gratification of desires. Enjoyment in life: Enjoyment of food, sex, leisure, and so on.
Achievement	Personal success through demonstrating competence according to social standards	Success: Achieving goals. Capability: Competence, effectiveness, efficiency. Ambition: Hard work, aspirations.

Value	Motivational Goal	Components of the Definition
		Influence: Have an impact on people and events.
Power	Social status and prestige, control or dominance over people and resources	Dominance over people Control of material resources Face: Status and prestige Social power: Control over others, dominance. Authority: The right to lead or command. Wealth: Material possessions, money.

Adapted from (Rohan, 2000, Schwartz et al., 2012)

The ten lower order values as defined by (Schwartz, 1992, 1994, 2006, 2012, Schwartz & Bilsky, 1987) is described in more detail below and enhanced with the work of Avallone, Farnese, Pepe and Vechionne (2010). Listed below are the definitions of the ten values in terms of the broad goals they express:

- **Power:** Social status and prestige, control or dominance over people and resource*s* (Schwartz et al., 2012).

  Adhesion to this value involves placing importance on one's social status and on the attainment of a prestigious or authoritative position, interest in increasing one's influence or in the ability to control other members of the organisation and the acquisition of resources (Avallone et al., 2010).

  Pursuing power values may harm or exploit others and damage social relations. Still, it is of some importance because power values help to motivate individuals to work for group interests. They also justify the hierarchical social arrangements in all societies and organisations (Schwartz, 2006).

  Both power and achievement values focus on social esteem. However, achievement values (e.g., ambitious) emphasise the active demonstration of successful performance in concrete interaction. Power values (e.g., authority, wealth) emphasise the attainment

or preservation of a dominant position within the more general social system (Schwartz, 2006).

- **Achievement:** Personal success through demonstrating competence according to social standards (Schwartz et al., 2012).

  Adherence to this value implies interest in obtaining personal success and growth and the demonstration of one's competence in accordance with cultural and contextual standards (e.g., capacity, experience, ambition) (Avallone et al., 2010).

  Achievement values motivate individuals to invest in group tasks. They also legitimise self-enhancing behaviour, so long as it contributes to group welfare. On the negative side, these values foster efforts to attain social approval that may disrupt harmonious social relations and interfere with group goal attainment (Schwartz, 2006).

  Elliot and McGregor (2001) emphasised that achievement values refer to pursuing success as judged by the normative standards of an individual's culture

- **Hedonism:** Pleasure and sensuous gratification for oneself (Schwartz et al., 2012).
  This value emphasise the importance of aspects related to gratification, satisfaction, entertainment, and pleasantness, which are possible within one's work life and ensuring that one's work, does not interfere with one's private or leisure time (Avallone et al., 2010).

  Hedonism and stimulation values derive from the requirement to legitimize inborn needs to attain pleasure and arousal. These values are probably more important than power values because, unlike power values, their pursuit does not necessarily threaten positive social relations (Schwartz, 2006).

- **Stimulation:** Excitement, novelty, and challenge in life (Schwartz et al., 2012).
  This value emphasises the importance of challenge, novelty, and curiosity, exploration all
  of which makes one's work life exciting and generates new sources of interest (Avallone et al., 2010).

- **Self-direction:** Independent thought and action choosing, creating, exploring (Schwartz et al., 2012).

  This value attributes importance to the possibility that, while at work, individuals may openly express themselves, engages in autonomous thinking, make independent choices, utilise one's creativity and fully use and demonstrate one's intelligence (Avallone et al., 2010).

  Self-direction values nurture creativity, motivate innovation, and promote coping with challenges the group may face in times of crisis. Behaviour based on these values is intrinsically motivated. It satisfies individual needs without harming others. Hence, it rarely threatens positive social relations (Schwartz, 2006).

- **Universalism:** Understanding, appreciation, tolerance and protection for the welfare of all people and for nature (Schwartz et al., 2012).

  Adherence to this value determines the importance of assuming a tolerant, understanding, appreciative and protective position towards others (organisational colleagues and more generally, individuals one meets) (Avallone et al., 2010).

  Universalism values also contribute to positive social relations. They are functionally important primarily when group members must relate to those with whom they do not readily identify, in schools, work places, and so on. They may even threaten in-group solidarity during times of intergroup conflict. Therefore, universalism values are less important than benevolence values (Schwartz, 2006).

- **Benevolence:** Preservation and enhancement of the welfare of people with whom one is in frequent personal contact (Schwartz et al., 2012).

  Adherence to this value type reflects the importance of actively committing to favouring the wellbeing of all those one has contact with during one's professional activities, thus demonstrating oneself as honest, sincere, open to helping and responsible (Avallone et al., 2010).

  Benevolence values derive from the centrality of positive, cooperative social relations in the family, the main setting for initial and continuing value acquisition. Benevolence values provide the internalised motivational base for such relations. They are reinforced

and modelled early and repeatedly. Benevolence values emphasise voluntary concern for others' welfare (Schwartz, 2006).

Benevolence and conformity values both promote cooperative and supportive social relations. However, benevolence values provide an internalised motivational base for such behaviour. In contrast, conformity values promote cooperation in order to avoid negative outcomes for self. Both values may motivate the same helpful act, separately or together (Schwartz, 2006).

- **Tradition:** Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provides (Schwartz et al., 2012)
  This value considers as central the contextual habits and customs, adhesion to ways of thinking and consolidating commitment to preserving cultural tradition (Avallone et al., 2010).

  Acting on tradition values can also contribute to group solidarity and thus to smooth group functioning and survival. However, tradition values find little expression in the behaviour that interaction partners have a vital interest in controlling. They largely concern commitment to abstract beliefs and symbols (Schwartz, 2006).

- **Conformity:** Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (Schwartz et al., 2012).
  This value involves the adhesion to rules, expectations and social pressure, thus demonstrating self-discipline and "loyalty" to elders' suggestions but also restricting one's network of actions and/or conditioning one's choices, inclinations, impulses and desires (Avallone et al., 2010).

  Tradition and conformity values are especially close motivationally; they share the goal of subordinating the self in favour of socially imposed expectations. They differ primarily in the objects to which one subordinates the self. Conformity entails subordination to persons with whom one is in frequent interaction, for example parents, teachers, bosses (Schwartz, 2006).

- **Security:** Safety, harmony, and stability of society, of relationships, and of self (Schwartz et al., 2012).

  Adhesion to this value refers to the importance of preserving order, stability, harmony and security within the physical environment, work-related relationships, and professional activities (Avallone et al., 2010).

Security and conformity values also promote harmonious social relations. They do this by helping to avoid conflict and violations of group norms. The acquisition of values is normally in response to demands and sanctions to avoid risks, control forbidden impulses, and restrict the self. This reduces their importance because it conflicts with gratifying self-oriented needs and desires. Moreover, the emphasis of these values on maintaining the status quo conflicts with innovation in finding solutions to group tasks (Schwartz, 2006).

Schwartz (1992, 1996) indicates that these ten values are reasonably representative of the range of values underlying motivation in all societies. In addition to formulating a proposed representation of the content of values, Schwartz's theory specifies dynamic relations among the types of values. Schwartz indicated that actions taken in pursuit of each type of value have psychological, practical, and social consequences that may conflict with or may be in concurrence with the pursuit of other value types. The total pattern of relations of value conflict and compatibility among value priorities gives rise to a circular structure of value systems (Schwartz, 1996). The circular structure in Figure 2.1, below, portrays the total pattern of relations of conflict and congruity among values. Schwartz (1992, 1996) indicates that the values are arranged in a circular format, which represents or form a motivational continuum.
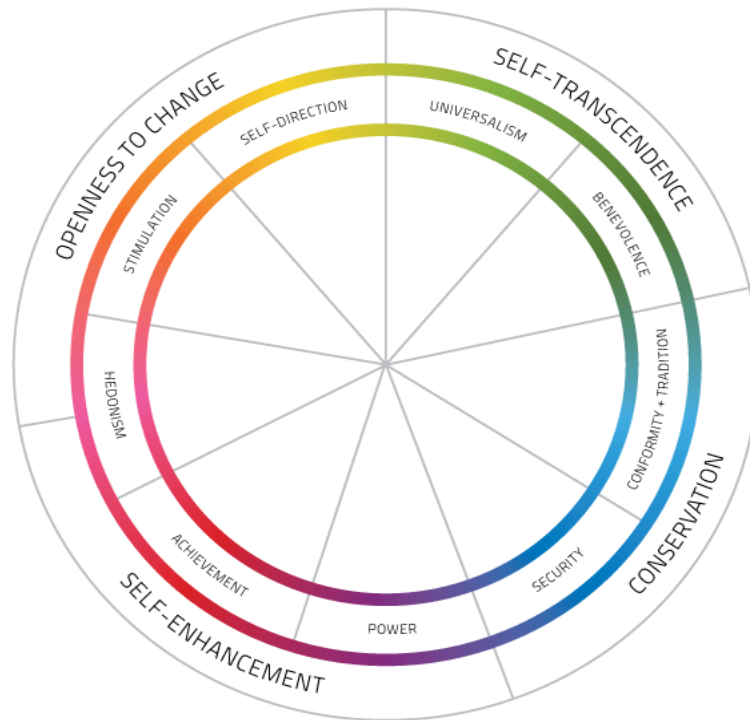
Figure 2.1. Theoretical Location of the Ten Lower Order Values. Source: (Schwartz, 2006, 2012)

The closer any two values in either direction around the circle, the more similar their underlying motivations, the more distant, the more antagonistic their motivations. In contrast, the motivational goals of the value types in opposing positions around the circle are not easily pursuable simultaneously. For example, the pursuit of achievement values may conflict with the pursuit of benevolence values: Seeking personal success for oneself is likely to obstruct actions aimed at enhancing the welfare of others who need one's help (Schwartz, 1996). Competing values emanate in opposing directions from the centre of the model and complementary types are in close proximity going around the circle (Schwartz, 1996). According to this structure, values are interdependent; the closer they are in either direction around the circle, the more positive the relationship between them and the more distant they are, the more negative their interrelationship. Bardi, Lee, Hofmann-Towfigh and Soutar (2009) highlights the fact that values on opposite sides of the value circle are not antonyms; because there is no lexical contradiction between them, for example, the value item freedom that measures self-direction and the value item obedient measuring conformity are located on opposite sides of the circle, but they are not antonyms. The contradiction is rather based on their conflicting motivations in individuals. Motivations are considered as conflicting when

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they lead to opposite behaviours or judgment, and compatible when they lead to the same behaviour or judgment (Bardi et al., 2009).

Although the theory distinguishes ten values, it provides that at a more basic level, values form the continuum of related motivations and which gives rise to the circular value structure (Schwartz, 2012). The following shared motivational emphases of adjacent values in the value structure at a basic level was recorded by Schwartz (2012, p. 9)

"a) power and achievement - social superiority and esteem;

b) achievement and hedonism - self-centred satisfaction;

c) hedonism and stimulation - a desire for affectively pleasant arousal;

d) stimulation and self-direction - intrinsic interest in novelty and mastery;

e) self-direction and universalism - reliance upon one's own judgment and comfort with the diversity of existence;

f) universalism and benevolence - enhancement of others and transcendence of selfish interests;

g) benevolence and tradition - devotion to one's in-group;

h) benevolence and conformity - normative behaviour that promotes close relationships;

i) conformity and tradition - subordination of self in favour of socially imposed expectations;

j) tradition and security - preserving existing social arrangements that give certainty to life;

k) conformity and security - protection of order and harmony in relations;

l) security and power - avoiding or overcoming threats by controlling relationships and resources".

The idea that values form a motivational continuum has important implications; dividing the domain of value items into ten distinct values is an arbitrary convenience (Schwartz, 2006). In other words, the values in the current study might not be at the exact place in the continuum according to Figure 2.1, but they should reflect the principle of the continuum. Schwartz (2012) indicates it is reasonable to partition the value items into more or less fine-tuned distinct values according to the needs and objectives of one's analysis. Important for this study is that (Schwartz, 2012) provide that when values are considered as organised in a circular motivational structure, as indicated earlier. It has an important implication for the relations of values to other variables and implies that the whole set of ten values relates to any other variable (behaviour, attitude, age, etc.) in an integrated manner.

2.4.1.2 *The four higher order values*

Showing values as organised along two orthogonal dimensions allows the identification of the oppositions between competing values. The two dimensions are formed by clustering together the four higher order values: openness to change versus conservation and self-enhancement versus self-transcendence, and these four higher order values are divided into the ten lower order values as described in detail above. Schwartz (1994, p. 124) indicated that "two major value conflicts that structure value systems have been found in over 95% of samples I have studied in 41 countries". Schwartz accordingly conceptualises the total structure of value systems as organised on the two basic dimensions. Each representing a polar opposition between two higher order value types (Schwartz, 1996). The two bipolar dimensions summarising the conflict between competing values is as follows, also see Figure 2.1;

Dimension One

Openness to change ↔ Conservation values.

Correlating lower order values of the first dimension

Self-direction and Stimulation ↔ Security, Conformity and Tradition

The first dimension reflects on the conflict between values that emphasise independence of thought, action, and feelings and readiness for change (self-direction, stimulation) and values that emphasise order, submissive self-restriction, preservation of the past, and resistance to change (security, conformity, tradition) (Schwartz, 1992, 2006, 2012).

Dimension Two

Self-enhancement ↔ Self-transcendence

Correlating lower order values of second dimension

Benevolence and Universalism ↔ Power and Achievement

This dimension reflects on the conflict between acceptance of others as equals and concern for their welfare versus pursuit of one's own relative success and dominance over others (Schwartz, 1996). It is important to note that Hedonism shares elements of both openness to change and self-enhancement (Schwartz, 1992, 2006, 2012).

The values to the left on Figure 2.1, power, achievement, hedonism, stimulation, self-direction, primarily regulates how one expresses personal interests and characteristics or intrinsic values. Values on the right of the figure (benevolence, universalism, tradition, conformity, security)

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primarily regulate how one relates socially to others and affects their interests or extrinsic values.

Pursuit of values on the right in Figure 2.1 also serves to cope with anxiety (discussed in 2.4.1.3) due to uncertainty in the social and physical world. Individuals seek to avoid conflict (conformity) and to maintain the current order (tradition, security) or actively to control threat (power). Values on the left (hedonism, stimulation, self-direction, universalism, benevolence) express anxiety-free motivations. Achievement values do both: Meeting social standards successfully may control anxiety and it may affirm one's sense of competence (Schwartz, 2006).

2.4.1.3 *The dynamic structure of value relations*

In principle, the theory explained to this point focused on a single dynamic principle organising the structure of values. This principle is the congruence and conflict among the values which are simultaneously linked when making decisions (Schwartz, 2012). Figure 2.2 provide additional principles in the benefit of values attainment. Values in the two top squares of Figure 2.2 (power, achievement, hedonism, stimulation, and self-direction) predominantly regulate how an individual expresses personal interests and characteristics. Values in the two bottom squares (benevolence, universalism, tradition, conformity, security) primarily regulate how individuals relate socially to others and affect their interests. Security and universalism values is considered as periphery values, because it is concerned with the interests of others, but their goals also guides the pursuit of individual interests (Schwartz, 2012).

Relations of values to anxiety represent a third principle. Pursuit of values on the left two squares in Figure 2.2 serves to deal with anxiety due to uncertainty in the social and physical world and considered as self-protective values. Individuals seek to avoid conflict (conformity) and to maintain the current order (tradition, security) or actively control threats (power). Values in the right squares (hedonism, stimulation, self-direction, universalism, and benevolence) express anxiety free motivations and is considered as growth or self-expansive values. In the case of achievement values it is associated with both, meeting social standards successfully may control anxiety and it may confirm the individual's sense of competence. Understanding the basis of values in interests and in anxiety can help in predicting and understanding relations of values to various attitudes and behaviour (Schwartz, 2012).

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        ┌──────────────────────────┐      ┌──────────────────────────┐
◄───────│    Anxiety Based Values  │      │     Anxiety Free Values  │───────►
        └──────────────────────────┘      └──────────────────────────┘

        ┌──────────────────────────┐      ┌──────────────────────────┐
◄───────│   Prevention of Loss Goals│     │  Promotion of Gain Goals │───────►
        └──────────────────────────┘      └──────────────────────────┘

        ┌──────────────────────────┐      ┌──────────────────────────┐
◄───────│Self Protection Against Threats│ │ Self-Expansion and Growth│───────►
        └──────────────────────────┘      └──────────────────────────┘
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PERSONAL FOCUS

Regulating how one express personal interests and characteristics

SELF – ENHANCEMENT VALUES
Achievement
Power

OPENNESS TO CHANGE
Hedonism
Stimulation
Self-Direction

CONSERVATION
Security
Conformity
Tradition

SELF-TRANSCENDENCE
Universalism
Benevolence

Regulating how one relates socially to others and affects them

SOCIAL FOCUS

Figure 2.2. The dynamic foundation of the universal value structure. Source: (Schwartz, 2006, 2012)

It is important to note that (Schwartz, 2006, 2012) indicates that the value theory specifies the order of the 10 values. Both Figures 2.1 and 2.2 reflect this order, but orient the circle differently. Rotation of the value circle in the circular continuum therefore does not affect the meaning of the value structure.

2.5   Organisational and Individual Value Congruence.

As stated in the introduction, Social culture and business culture are integrated constructs that determine how organisations function as a subsystem of the larger society in which it provides outputs or services (Katz & Kahn, 1978). Value congruence refers to the similarity between values held by individuals and organisations (Edwards & Cable, 2009).

According to Rokeach (1979), organisations and institutions form around clusters of values and become the mechanisms through which values are transmitted and instilled in society. The

fact that different organisations form around different sets of values, accounts for variability across individuals with respect to the values to which they prescribe. The amount of involvement an individual has with an organisation, their perceptions of that organisation, and the acceptance of the individual into the organisation, will influence the way in which they will identify with the values of that organisation (Rokeach, 1979). Changes in organisations over time can be understood as a reflection in changes in the underlying value systems (Herbst & Houmanfar, 2009).

Weiner (1988) defined an organisational values system as constituted of the values of its members, therefore the organisation's values are reflective of shared values across members and may include a more restrictive range of values than seen in any of its individual members.

Edwards and Cable (2009) define values in an organisational context as general beliefs about the importance of normatively desirable behaviours or end states. Individuals draw from their values to guide their decisions and actions, and organisational value systems provide norms that specify how organisational members should behave and how organisational resources are distributed.

In a study by Meglino et al. (1989) of 191 production workers, 17 supervisors, and 13 managers at a large industrial product plant, they examined the effect of value congruence between individual employees and supervisors/managers on employee satisfaction and commitment. Their results showed that individual employees were more satisfied and committed to the organisation when their values were congruent with that of their supervisors. "Congruence effects for job satisfaction and organisational commitment were very evident at the supervisory level; that is, satisfaction and commitment were higher when production workers' values were closer to those of their supervisors. Highly satisfied and committed workers, apart from any interpersonal effects due to congruence, hold value rankings that were closer to those of their supervisors. If the supervisors did hold such a similar rank ordering, the value responses of highly satisfied workers would normally be closer to this average supervisory response than would the value responses of workers low in satisfaction. This would also be true for workers high and low in organisational commitment" Meglino et al. (1989, p. 429). In addition, their initial expectations of their study were that value congruence would relate to measures of performance as well as affect. "Although congruence was related to various affect measures, there were very few significant relationships with performance measures. Because value

congruence between workers and their supervisors is thought to improve interpersonal interactions, it is not surprising that congruence was related to measures of affect and generally unrelated to measures of performance" (Meglino et al., 1989, p. 431).

Sullivan, Sullivan and Buffton (2002) indicated at an individual level and in organisations, values serve two functions. First, they are the primary driver of motivation and, secondly, they provide a standard for the evaluation of actions.

Boxx et al. (1991) examined the impact of organisational values and value congruence on job satisfaction, commitment, and cohesion. Information collected from 387 highway and transportation department executives, provided results indicating that when the organisation's value system is congruent with the values individuals believed should exist in their organisation, it enhances individual commitment and job satisfaction.

O'Reilly, Chatman, and Caldwell (1991) (as cited by Rosete, 2006, p. 9) examined "the person organisation fit between an individual's value preference and the organisation's value profile on three rated behavioural tendencies (job satisfaction, organisational commitment and intention to leave). Their results showed that the fit between the individual's value preferences and the actual values present were significantly related to the commitment employees have to the organisation, their level of job satisfaction, and their intention to leave the organisation".

It is also possible to link the relations among Schwartz's ten values to the four drivers of human behaviour (Schwartz, 2006). The ten values map exactly onto the four basic emotional needs, or drivers as proposed by Nohria, Groysberg and Lee (2008). Most probably, these drives emerged as a set of decision guides in the course of development and are central to human nature (Schwartz, 2006). The four drives are:

- **to *acquire*** - obtain scarce goods, including intangibles such as social status (Nohria et al., 2008) or to seek, take, control, and hold material and status resources and pleasurable experiences (Schwartz, 2006);
- ***to bond -*** form connections with individuals and groups (Nohria et al., 2008) or to form social relationships and develop mutually caring commitments (Schwartz, 2006);

- *to comprehend* - satisfy an individual's curiosity and master the world around us (Nohria et al., 2008) or to know, comprehend, believe, appreciate, and understand their environment and themselves via curiosity (Schwartz, 2006);

- *to defend* - protect against external threats and promote justice (Nohria et al., 2008) or to defend themselves and their valued accomplishments whenever they perceive them to be endangered (Schwartz, 2006).

Nohria et al. (2008) indicated that these four drives underpin the basis of the human behaviour or underlies all human action (everything they do). The drive to bond, when met, is associated with strong positive emotions like love and caring and, when not, with negative ones like loneliness and anomie (a feeling of disorientation and alienation from society caused by the perceived absence of a supporting social or moral framework) (Du Plessis, 2012). At work, the drive to bond accounts for the boost in motivation when employees feel proud of belonging to an organisation and for their loss of morale when the institution betrays them. Studies performed by Nohria et al. (2008) showed that an organisation's ability to meet the four fundamental drives explains, on average, about 60% of employees' variance on motivational indicators. In addition, certain drives influence some motivational indicators more than others. Fulfilling the drive to bond has the greatest effect on employee commitment, for example, whereas meeting the drive to comprehend is most closely linked with employee engagement (Nohria et al., 2008).

The drives to acquire and to bond often come into conflict when taking decisions about an action, as do the drives to learn and to defend (Schwartz, 2006). Schwartz (2006) indicated that each of the ten values appear to express one drive or a blend of two. Values transform drives into desirable goals that are available to awareness and therefore used in conscious planning and decision-making. The matches are as follows;

- benevolence - to bond;
- universalism - to bond and to comprehend;
- self-direction - to comprehend;
- stimulation - to comprehend and to acquire pleasurable experience;
- hedonism - to comprehend and to acquire pleasurable experience;
- achievement - to acquire;
- power - to acquire and to defend;

- security - to defend;

- conformity and tradition - to defend and to bond (Schwartz, 2006).

This mapping of values onto emotional needs or drives goes around the value circle as indicated in Figure 2.1. The oppositions between values parallel the conflicts between drives that Nohria et al. (2008) identify. The matching of values to drives suggests that the intrinsic basis may help to account for the near universality of the value structure (Schwartz, 2006).

2.6   Values and the relationship with attitudes and behaviour

Attitudes and behaviour is two aspects that need more elaboration. Values are considered to play an important role in guiding attitudes and behaviour; values are more likely to influence behaviour through attitudes, than influencing behaviour directly (Braithwaite, 1997). Rokeach (1968, p. 14) indicated that "First, value is clearly a more dynamic concept than attitude having a strong motivational component as well as cognitive, affective and behavioural components. Second, while attitude and value are both widely assumed to determinants of social behaviour, value is a determinant of attitude as well as of behaviour". There is sufficient evidence to suggest that behaviour effects attitudes, attitudes and behaviours are mutually reinforcing, and attitudes and beliefs have important intergenerational influences (Hofmann, 2009). Rokeach (1979) has also shown extensively that values correlates meaningfully with logically related attitudes and behaviour.

The Homer and Kahle (1988) model provide for an integrated interrelationship between values, attitudes, and behaviours by postulating a hierarchical influence on cognitions in which the influence theoretically flows from more abstract cognitions (values), to mid-range cognitions (attitudes, beliefs) to specific behaviours. Milfont, Duckitt and Wagner (2010) referred to this model as implying a major flow of connection from values to attitudes to behaviour, so that the strongest causal effects are between values and attitudes, and between attitudes and behaviour.

Values are associated with a variety of self-processes. (Kristiansen & Zanna, 1991) indicated that self-monitoring mediates the relationship between attitudes and values. DeBono (1987) reasoned that low self-monitors link their attitudes to their values, while high self-monitors are more likely to shift their attitudes to be in line with situational pressures.

Feather (1992) provided that values are proven determinants of human behaviour, it is also meaningful in motivating (Bardi & Schwartz, 2003), influencing, guiding, (Braithwaite, 1997), energising, regulating, and giving meaning to behaviour (Verplanken & Holland, 2002). Values are also directly and indirectly related to behaviour (Bardi & Schwartz, 2003, Braithwaite, 1997). The relationship between values and behaviours is qualified by situational influences; stronger normative pressures can lead individuals to contradict their own values (Bardi & Schwartz, 2003).

2.7   Values and motivation

Once people recognise feasible actions to help another and feel at least a minimum of responsibility, their values provide motivation to act. Values induce valences on possible actions (Feather, 1995). Actions become more attractive, and more valued subjectively, to the extent that they promote attainment of valued goals. High-priority values are central to the self-concept. Sensing that an action will attain them sets off an automatic, positive, affective response; sensing that an action threatens them sets off a negative affective response (Schwartz, 2010).

According to (Kilby, 1993), "values are among the most powerful motivators, sometimes overriding such basic motives as fear, pain, and hunger." (p. 73). Their ability to influence and give expression to basic human needs makes values archetypal to the motivational processes (Kilby, 1993). According to Verplanken and Holland (2002), values are motivational concepts that induce and guide the selection, fulfilment, and evaluation of goals and this is confirmed by McLeod, Sotirovic and Holbert (1998), Schwartz and Bardi (2001).

Schwartz (2004) Linked values and action through four sequential processes: First, values must be activated. Second, values are motivational and lead toward the favouring of certain actions above others. The third process is the influence of values on attention, perception, and interpretation within situations. Fourth, values, when activated, influence the planning of action. Values motivate behaviour, but compete with normative pressures (societies or organisational rules) (Bardi & Schwartz, 2003).

2.8   Why the need to understand value diversity at the various levels of work.

Values underpin national institutions and business systems and shape decisionmaking and behaviour (professional conduct) in an array of business situations (Danis, Liu & Vacek, 2011). In order to interact effectively with members of different cultures and subcultures, it is important to understand how underlying values shape behaviour. Values define the way individuals perceive and evaluate work situations, and affect relationships among individuals, groups, and their organisations. Values determine the bounds of ethical behaviour, define success or failure, and affect how managers are influenced by external pressures (Danis et al., 2011). Value systems can change over time, particularly when situations arise that challenge established norms or cause a re-examination of value structures (Danis et al., 2011). In a number of emerging economies and transitional economies, this is precisely what transpires when previously accepted values and behaviours are challenged through processes of political, economic, and social change (Danis et al., 2011).

Values help the organisation to engage the hearts and minds of employees in pursuit of the organisational goals (Sullivan et al., 2002). Studies suggest that values-led companies experience a number of benefits from this approach. A study by Kotter and Heskett (as cited in Sullivan et al., 2002) indicate "values-led companies outperform others: growth in revenue being four times faster; rate of job creation seven times higher; growth in stock price 12 times faster; and profit performance 750 per cent higher". In a further study by Dearlove and Coomber (1999) significantly lower turnover was found among 1,000 US graduates when the employing company valued respect and teamwork (Sullivan et al., 2002).

Culture is considered the DNA of human social systems, reflecting the set of values, beliefs, history, traditions, way of thinking and doing, which link members of the organisation together and shape the organisation's identity. Excellent organisations enjoy strong identities because they have corporate cultures that make them unique. Corporate culture is always at the roots of excellence (Abdullah et al., 2012).

Understanding value diversity within organisations, could enable diverse workforces to work together harmoniously to achieve common goals, maximising the contribution of group members and facilitate a better understanding of group members, irrespective of their background (Xiaoxing et al., 2008). Initiatives aimed at integrating individuals from

culturally diverse backgrounds into a communal workforce will only be possible to the extent to which there is comprehensive understanding of the dynamic forces that underlie the attitude towards cultural diversity and the manner in which these antecedents combine to produce culturally salient beliefs, perceptions and attitudes. Personal values were identified as one of the most important antecedents likely to shape the attitude towards cultural diversity (Becker, 2010).

Schwartz's circumplex of values and associated survey instruments are helpful framing devices to reveal values diversity and facilitate the communication of values within the organisation. A systematic and thorough analysis of human values assist in raising awareness in terms of value priorities, value diversity and the interrelationships between values (Xiaoxing et al., 2008).

In identifying the similarities and differences in employee's value propositions, and establishing a collectivistic culture based on employees shared values, a 'diversity friendly' environment could be created which would benefit the organisation in the long term (Xiaoxing et al., 2008). Knoppen and Saris (2009) indicated that the closer values are in either direction around the circular circumflex, the more positive the relationship between them and the more distant they are, the more negative their interrelationship. In terms of this study it is important to identify the values at the different levels of work which are closer to each other within the circumflex of values, as these will be the values that the organisation would need to focus on to create mutual or inclusive value congruence. McMillan-Capehart (2005) indicated that the collectivistic culture is the overall guiding power that allows diversity to result in positive outcomes. By implementing individualistic socialisation tactics within a collectivistic culture, organisations can benefit from employees' backgrounds and experiences, while promoting teamwork and a cohesive organisation.

Communication problems in organisations with diverse workforces are common and often create the potential for increased organisational conflict, and a high degree of value differences (Hopkins & Sterkel-Powell, 1994). One of the challenges in the mining industry is effective communication because of language diversity. Hofmann (2009) indicated that language is an organised system of cultural symbols that individuals use to exchange knowledge, interpret reality and promote shared meaning among individuals. Visible differences in cultural identity may lead to increased relationship conflict in groups. Identity salience is a state characterised

by heightened sensitivity to identity-relevant stimuli. Therefore, individuals who are aware of their differences may experience more conflict with other group members than individuals without such a heightened awareness (McMillan-Capehart, 2005).

As characteristics, which are largely shaped by the early socialisation process, values are considered relatively stable behavioural dispositions. In ordinary circumstances, people's values show little change within a short period of time (Sverko, 1999). Like individual values, organisational values are often perceived as stable over time; they are ways of relating and responding to environmental events and are historically determined rather than a response to immediate environmental pressures (Collins & Porras, 1996). Many factors serve to strengthen particular values, as stated in the literature review. People tend to adopt, and attach greater importance to, the values of those around them and more specifically those expressed by their parents, teachers, peers and cultural role models. It is very likely that society and organisations may contribute to strengthening some values and suppressing others. All this is to be expected, as it was indicated in the previous sections of this chapter, as values are most likely to be learned as adaptations to people's core values over time as they are exposed to variations in circumstances throughout life course.

2.9   Summary

In this chapter the context of value formation across the lifespan of an individual is shown and was explored as antecedents influencing the origins of values, how it relates and is integrated within personality. To understand the functioning of values as part of the daily nuances of life, the Schwartz's circumplex of values is used to create an understanding of the relationship between opposing and adjacent values. Values are at the heart of culture and drive most if not all the actions, and behaviour of people. Schwartz's ten values are universal, but individuals vary in terms of the priorities they assign to the values in the circumplex. The priorities assigned to the different values are a direct result of a person's core values and the way in which the individual is able to relate to it, as they are exposed to other social and organisational values across life's course.

Organisations are not islands of values or culture, but a representation of the values of the people from the society where they are employed. These employees' life circumstances directly influenced their ability to aspire to education and occupations at various levels in these organisations. Organisational and individual value congruence is not only critical for

organisational successes, but the context of employee wellbeing as well. Understanding the organisational and individual values can create opportunity to establish value congruence and the basis for value led organisations. Taras, Rowney and Steel (2009, p. 370) indicated that today "There may be a greater variation in cultural values across generations, professions, interest communities, or socio-economic classes, than across countries. Future research should re-examine the boundaries of cultural clusters and devote more attention to the individual level of analysis".

CHAPTER 3 – THE HIERARCHICAL NATURE OF WORK AND VALUES

3   Introduction

This chapter requires significant integration with the previous chapter, some of the core aspects of values enable individuals to function and occupy positions at various levels in society and organisations. In an attempt to establish the link between values, organisational hierarchy and an individual's ability to function at a specific level of work, this chapter focus on the following;

- A brief discussion on one of the most important proxies used to study nation level differences in culture, namely Individualism and Collectivism.
- Levels of work, education and income are interrelated. Theoretical support is provided to motivate these relationships, with an actual example from the South African Industry.
- The factors considered the origins of values have a direct influence on the cognitive ability and the occupation individuals can possibly aspire to, are discussed.
- What is organisational hierarchy and how does it relate to the interrelationship between people and the need for work within an organisation.
- What is the context of decisionmaking at the various levels of work in hierarchical organisations
- Evidence from the literature indicates possible differences in value priorities at the various levels of work from previous studies.

A substantial base of research literature is available on Schwartz's value theory and the origins of values that provide an understanding of the differences in basic human values. This was discussed in Chapter 2, Section 2.2. Research utilising Schwartz's value theory to identify value priorities at different levels of work is limited, therefore literature using this proxy to study values is inadequate. The researcher therefore adopted an interpretive approach, using available literature, in a humble attempt to show the link between two complex constructs, values and organisational hierarchy, in relation to levels of work. Levels of work in this study are categorised according to the classification of work as defined by Paterson (1972a, 1972b). The Paterson model of work classification remains the most commonly used system in the South African Mining industry and therefore used as a basis to formulate the levels of work in this study.

3.1 Individualism, collectivism and power distance

Although individualism and collectivism are not specifically highlighted by Schwartz's values theory, one may argue that it is integrated within the lower order values of Security, Conformity, Tradition and Self-direction, stimulation and Hedonism that is representative of the two opposing higher order values, openness to change and conservation. Brewer and Chen (2007, p. 139) support this interpretation "Values associated with individualism collectivism is more related to the relative importance placed on individual rights and obligations (self-fulfilment, individual responsibility), rights and responsibilities associated with maintaining relationships and the welfare of relationship partners (interpersonal harmony, reciprocal exchange), or rights and obligations associated with the collective welfare of the group as a whole (duty to authority, collective cooperation)". Elaborating on collectivism Schwartz (1990) concluded that collectivism encompasses four value types: pro-social (universal collectivism); restrictive conformity; security; and tradition, this also supports the researchers argument in the first sentence above.

This section is however not an attempt to link Hofstede's and Schwartz's value theories, but to provide some indication that there is meaningful variance in values at the different levels of work. The reader should also note that in this section, the reference is more in relation to culture than values, but the relationship between culture and values has been discussed in Chapter 2. For example, values are at the heart of culture and influence most, if not all motivated behaviour (Schwartz, 2006).

The Western/European and African cultures also vested in individualism and collectivism respectively are reflected as opposite poles on one dimension of culture (Hofstede et al., 2010). Within an individualistic cultural framework essential values are; individual freedom, personal fulfilment, autonomy, and separation where relationships are chosen, voluntary, and change-able, can be worked on and improved, or left when costs outweigh benefits (Triandis, 1995). A basic personal need is to feel good about oneself as a unique and distinctive person and to define these unique features in terms of abstract traits. Open emotional expression, free choice, and attainment of one's personal goals are important sources of well-being and life satisfaction (Oyserman & Sorensen, 2009).

In the collective cultural framework essential values are assumed to be group solidarity, social obligation, connection, and integration; important group memberships are ascribed and fixed "facts of life" to which people must accommodate; both in-groups and boundaries between in and out groups are experienced as stable, enduring, and important (Oyserman & Sorensen, 2009). A basic self-goal is to attain and maintain group membership, in order to define the self, both in terms of the individual's social roles (e.g. male or female) and group memberships (e.g. Ethnic groupings) and the traits and abilities relevant for maintaining these, (loyalty, energetic perseverance) (Laher, 2013). The argument on in-groups and out-groups is of further importance in the South African context as the system of apartheid fostered the development of such groups. The effect of this was that out-groups (African, Indian, and Coloured communities) became more reliant on collectivistic structures to function in an abnormal society. This created a favourable environment to develop/adopt collectivistic tendencies (Laher, 2013). In relation to the last sentences of this paragraph, the reader should note the statements by Allik and McCrae (2004) and Laher (2013) in the last paragraphs of this section.

The position of a country on the Individualism/Collectivism dimension shows the society's solution for a universal dilemma: the desirable strength of the relationships of an adult person with the group(s) he or she identifies with. Directly linked to this cultural dimension is power distance, defined as "the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. Institutions are the basic elements of society, such as the family, the school, and the community; organisations are the places where people work" (Hofstede et al., 2010, p. 61).

Power Distance, individualism versus collectivism are integrated aspects of the dimensions of culture and the relationship between the two dimensions are described as follows by (Hofstede et al., 2010, pp. 102-103); "Many countries that score high on the power distance index, score low on the individualism index, and vice versa. In other words, the two dimensions tend to be negatively correlated: large-power-distance countries are also likely to be more collectivist, and small-power- distance countries to be more individualist."

Power Distance scores provide information about dependence relationships in a country. In small power distance countries, there is limited dependence of subordinates/workers on team leaders/supervisors/managers, and there is a preference for consultation (that is, interdependence between supervisor and subordinate). In large power distance countries, there

is considerable dependence of subordinates on supervisors. Subordinates respond according to instructions and eventually follow the routine of work, and workers at this level either prefer such dependence (in the form of an autocratic or paternalistic manager/supervisor relationship) or reject it entirely. This is counter dependence or dependence with a negative sign. Large power distance countries therefore show a pattern of polarisation between dependence and counter dependence. In these cases, the emotional distance between subordinates and their bosses is large: subordinates are therefore unlikely to approach and contradict their bosses directly (Hofstede et al., 2010).

However, Hofstede et al. (2010) found that South Africa has a national score of 65 on his individualism/collectivism index and a low power distance index at 49 (Hofstede et al., 2010). It is important to note that acculturation normally follows the logical route of the minority acculturating to the majority's values, but acculturation can be reciprocal, in other words, the dominant group could also adopt values typical of the minority group (Hofstede et al., 2010). These two scores appear to be incorrect in terms of Hofstede's argument above, and this might be indicative of an abnormal society or a society in transition in the South African context. It is therefore possible to assume with reservation, that there will be significant differences in value priorities in the two higher order values, Openness to Change and Conservation, and their associated lower order values,

In an attempt to show a possible link with levels of work, it is necessary to reflect on Hofstede's IBM study where he extracted Power Distance values at national level for five levels of work in Great Britain, France and Germany. An extract of this information is shown in the Table 3.1. Based on the literature in Chapter 2 and above, Power Distance represents a sub-component of the cultural component individualism-collectivism. It might then be possible to argue that a high power distance implies higher scores on self-direction, stimulation, achievement and hedonism values, while higher score on conformity, tradition and security values is associated with a lower Power distance. Note Section 3.2.1 and 3.2.2, below, in possible support of this argument.

Table 3.1 - The Relationship between Levels of Work and Power Distance

Occupational Level or Level of Work	Mean Power Distance Score
Unskilled and semiskilled workers	90
Skilled workers and Technicians	65
Supervisors of the above levels of work	42
Professional workers	22
Managers of professional workers	8

Adapted from Hofstede et al. (2010)

The above represents the IBM Study of the late 1960's, power distance values in these countries might be very different, now considered as highly developed societies.

Mining organisations are still managed and structured in a Western/Eurocentric style (individualism) (Du Plessis, 2012), but the largest component of the workforce is the semi and basic skilled workers. As a result of low education and the level of positions they can strive to, it still impacts on their socio-economic status and therefore they remain the out groups, which is more vested in collectivism (Laher, 2013). Fiske (2002) warns that one of the limitations of research using Individualism and Collectivism as a proxy, is that nations are considered as cultures. South Africa at nation level has numerous cultures, which vary extensively in terms of Individualism and Collectivism. Progressively, research is indicating that separating South Africans according to race is an artificial demarcation, almost as artificial as assuming that all individuals from African descent are collectivist in orientation (Laher, 2013). The importance of human groups over nations is confirmed by the fact that the personality profiles of Black and White South Africans vary significantly, that is despite the fact that they have been living in the same country for generations (Allik & McCrae, 2004).

The individualism, collectivism proxy is used in an attempt to establish the link between values and levels of work and the research focus on the mining industry, which is not at nation level cultural construct. In addition, it is not considered as a part of the independent or dependent variables of this study, the statements of Allik and McCrae (2004) and Laher (2013) should

therefore not have any impact on this study. This is one of the core reasons for choosing levels of work as the independent variable, as the researcher assumed acculturation to the western values system with increased levels of education and level of occupation, also associated with improved socio-economic status.

3.2   Background variables, value priorities and levels of work

This section overlaps with some aspects of Chapter 2, Section 2.2, but refocused to show the relationship between levels of work, and variables like education and income.

The mining industry utilise the Paterson methodology to classify work at the various levels in their organisations (PE-Corporate-Services, *s,a*). The core principles used by grading systems to group positions into levels of work are directly related to skills and knowledge application (education), the complexity and scope of the variables considered in the process of decisionmaking (Paterson, 1972a, Paterson, 1972b). In practice, the resources to acquire skills and knowledge through formal or informal education, enables individuals to aspire to certain occupations, so that in most societies, social class, level of education, and occupation (level of work) are considered as interrelated (Hofstede et al., 2010). Also see the longitudinal study of Cheng and Furnham (2012) in section 3.3, which provides interesting findings in this regard.

People's life circumstances provide opportunities to pursue or express certain values more easily than others. Schwartz (2006) uses the following examples to illustrate his point, wealthy people is in a better position to pursue power values, and people working in the free professions is able to express self-direction values more easily. On the contrary, it could also provide constraints to pursue or express values, having dependent children limit parents to pursue stimulation values.

Life circumstances make the pursuit or expression of different values more or less rewarding or costly. It is normal for individuals to adjust (acculturate) a set of values according to varying life circumstances by upgrading the attainable or downgrading unattainable values, according to the importance assigned to a specific value or set of values (Schwartz & Bardi, 1997). Positions with more freedom of choice in the decisionmaking process increase the importance of self-direction values to the detriment of conformity values (Kohn & Schooler, 1983). According to Paterson (1972a) and Jaques (1996) positions at higher levels of work (Senior and Executive Management) need to take decisions in an environment and situations where the

variables and outcomes cannot be determined or calculated exactly and no prior president might exist. At these levels of work individuals with strong conformity values, might find it difficult to make the required decisions.

Inglehart (1997) indicated that changing the importance of attainable values and downgrading unattainable values are applicable to most, but not to all values. The opposite is true in the case of values concerning material wellbeing and security, when blocked, the importance of these values increases and if attained easily the importance decreases. In the case of individuals who suffer economic hardship and social disorder, they attribute more importance to power and security values than those who live in relative comfort and safety. In this study, it is possible that it is indicative of the differences between the various levels of work in relation to power and security values.

Individual age, education, gender, income and other characteristics influence socialisation and learning experiences, the roles or contribution individuals can occupy/make in society, the prospects and affirmations they encounter, and in general the abilities that is developed. It is therefore possible to conclude that differences in background characteristics largely determine the differences in life circumstances to which people are exposed, which, in turn, affect their value priorities. Schwartz (2006) regards the following as key socio-demographic variables and important determinants for individual differences in value priorities. These variables link to Schwartz's value theory.

3.2.1 Education

Level of education presumably promotes intellectual openness, flexibility, and breadth of perception essential for self-direction values and in turn provides for an increase in openness to non-routine ideas and activities, which are central to stimulation values. In contrast, it challenge automatic acceptance of prevailing norms, expectations, and traditions and therefore undermining conformity and tradition values (Kohn & Schooler, 1983).

Education increases the competencies of individuals to cope with life, but may reduce the importance of security values. Table 3.2, indicates a positive correlations between years of formal education with self-direction and stimulation values, and negative correlations with conformity, tradition, and security values. Education also correlates positively with

achievement values (Schwartz, 2006). Note the confirmation of this in the longitudinal study of (Cheng & Furnham, 2012) referenced in Section 3.3.

3.2.2 Income

Affluence creates opportunities to engage in unrestricted activities and a free choice to an appropriate life style. This in turn reduces security threats and the need to restrict one's impulses and to maintain supportive traditional ties. A higher level of work and higher income in principle therefore promote valuing of stimulation, self-direction, hedonism, and achievement values and reduce the importance of security, conformity, and tradition values (Schwartz, 2007). In Table 3.2, the correlation between total household income and value priorities is shown, thus providing support for the previous statement. Income contributed to higher stimulation, self-direction, achievement, and power values, primarily in the upper third of the income distribution (Schwartz, 2006).

Table 3.2 - Correlation of Values with Education and Income in 20 Countries in the European Social Survey

Value	Education (N=34,760)	Income (N=28,275)
Security	-.20 (20)	-.12 (20)
Conformity	-.22 (20)	-.14 (20)
Tradition	-.22 (20)	-.16 (20)
Benevolence	-.04 (11)†	-.05 (15)
Universalism	.06 (16)	-.01 (14) †
Self-Direction	.19 (20)	.10 (18)
Stimulation	.16 (19)	.11 (18)
Hedonism	.08 (15)	.08 (19)
Achievement	.14 (20)	.12 (19)
Power	.02 (13)†	.08 (19)

†Correlation does not differ significantly from zero, # of Countries in brackets.
Source: Adapted from Schwartz (2006)

Table 3.3 below shows an actual example of the link between the level of work (type of occupation), qualification and income in the South African industry. These two factors have been linked to values through family characteristics and socio-economic status in Chapter 2 and again in this section, and Table 3.3.

Table 3.3 - Levels of Work, Education and Income an Actual Example

Paterson Bands	Level of work in this Study	Qualifications required to function competently, based on the Paterson model	Range of Total Annual Disposable Income before tax for each level of work
F	**Management** positions from junior to executive Management	Graduate and postgraduate qualifications are required to function competently. In most cases, professional registration is a requirement.	R1 910 103 – R10 545 308
E			R1 149 891 – R6 105 152
D			R655 308 – R1 553 387
C	**Skilled**	Formal qualifications are required, trade certificates, diplomas, and first degrees. In some cases, for example, Health workers, professional registration is a requirement.	R250 384 – R763 829
B	**Semi-skilled**	Job specific or functional specific sub-process training, e.g. Drivers, Plant operators. Grade 10 to 12 certificates', and as indicated job specific certification.	R122 063 – R331 925
A	**Basic Skilled**	Basic reading and writing skills required and brief on the job training.	R78 961 – R121 488

Source: (Paterson, 1972a, Paterson, 1972b); PE Corporate Services SA, September 2013, Top Executive and General Staff Salary Surveys.

Table 3.3, shows the expected qualification and potential income at the various levels of work as found in the South African industry. This highlights another important factor, personality and cognition, as education and occupational attainment (level of work) is a reflection of cognitive ability, and discussed in the next section of this chapter.

3.3 Values, cognition and levels of work

It is necessary to reflect briefly on cognition, as level of work doesn't only relate to level of education, but in an organisational context the complexity of work increases almost exponentially at the different levels of work (Jaques, 1996). Level of work, education and cognition are interrelated concepts, and based on the literature review to this stage, values should influence the individual attainment of all three.

Jaques and Clement (1991, p. 49) defined complexity in terms of "the number, ambiguity, rate of, and interweaving of variables involved in a problem. Task complexity, thus has to do with the amount and quality of information that must be processed in the course of carrying out any task". Mental processing or decisions, comprises the mental processes by which a person use information, study it, analyse it, integrate it, reorganise it, judge and reason with it, make conclusions, plans and decisions, and take action (Jaques, 1996). The potential complexity of

information processing by an individual and the context of cognitive development is directly related, this is also confirmed by various cognitive scientists (Endler, 2000).

Cognition is defined is a representation of how humans perceive, learn, remember and associate current and past information to analyse, argue an interpret same, to conclude or decide on the most appropriate action or course of actions/no action to achieve certain immediate or future goals/objectives (Sternberg, Mio & Mio, 2009).

The coherent nature of cognition is developed through the life span of an individual, based on their inherited biological traits and exposures to various aspects of the internal (family, close friends) and the external environments (society, schools, universities, friends, regional and ethnic groupings, organisations, working groups, profession, etc.) (Sternberg et al., 2009). This is confirmed by the longitudinal study of Cheng and Furnham (2012) who explored a data set of nearly 5000 adults. They examined the effects of childhood cognitive ability (measured at age 11), parental social class (measured at birth), and personality on current occupational prestige (all measured at age 50), taking account the effects of education and the previous occupational levels as measured at age 33. The study found that education is the most important factor for occupational attainment (level of work), but in addition shown that education is also the strongest predictor of the promotions and upgrading of occupational attainment (level of work). In addition, the importance of childhood intelligence in education, career development, and occupational prestige from early adulthood to midlife was confirmed (Cheng & Furnham, 2012).

What about values? In order not to repeat, a different context of the values definition as formulated by Jaques (1996) is provided. Jaques (1996, p. 16) refers to the broader context of values and more from a work or organisational context as "What you value is what you want, what you would give priority to the things that attract you, that you will work for or fight for, that give direction, that determine how much you will put into something. Values are vectors: they express force in a given direction. People's values will determine how much they will commit themselves to a role. If, for whatever reasons, they value having a particular role at a given point in time, they will commit more of their available capability to their work (be "more motivated") than if they do not value it". This is in agreement with Schwartz (2010) indication that actions become more attractive, and more valued subjectively, to the extent that they promote attainment of valued goals.

3.4 What is organisational hierarchy

The focus of this chapter to this point is very much on the individual, but according to the literature review organisations are reflections of the culture and values of the society in which they are operating (Crawford & Mills, 2011, Katz & Kahn, 1978). Values underpin national institutions and business systems and shape decisionmaking and behaviour in a range of business situations (Danis et al., 2011). It is therefore important to reflect on the nature of the typical bureaucratic organisation of today in an attempt to show how it relates to values and levels of work (hierarchy).

Hierarchical organisations developed during the second industrial revolution in the 1890's, which saw the rise of managerial capitalism with its class of professional managers and the hierarchical organisation (Nielsen, 2004). Business conditions including new technologies and the associated production methods, increased the complexity of the business environment exponentially, forcing large corporations into becoming hierarchical organisations (Nielsen, 2004).

Most organisations today remain inherently hierarchical with typical pyramidal shapes. Individuals in these organisations are grouped together in functionally oriented work functions such as sales, manufacturing, finance, human resources, and so forth. Superimposed on these functional specialties might be some type of matrix or hierarchical command structure based on individual products, strategic business units, or geography (Nielsen, 2004).

Authority or the right to command (power) in organisations is frequently apportioned hierarchically (Basini & Hurley, 1994). Positions or incumbents at different levels in the organisational hierarchy, usually have more power to act and needs to consider an increasing number of variables to exercise control over the work being performed/required (Basini & Hurley, 1994). The reason for the hierarchical organisation of work is not only that tasks occur in lower and higher degrees of complexity, but also that there are definite incoherence in complexity that separate activities in the organisation into a series of steps or categories (Jaques, 1991). The same incoherence occurs with respect to mental work (analysing, interpreting and concluding = cognition) and to the breadth and duration of the time it takes to produce results. The hierarchical organisation is the only form of organisation that enables a

company to employ large numbers of people and to achieve the organisational objectives through the division and co-ordination of the activities of employees performing work at different levels of complexity (Jaques, 1991).

As a general principle, hierarchy can be considered as both a formed routine and a formative context. It is possible to view hierarchy as a formative context, because it define the circumstances through which people have access to each other and informs the routines, and activities of those interactions (Crawford & Mills, 2011). An organisational hierarchy is a formed routine because it is a reflection of social structure, meaning that the formative context of a society is reflected in its institutional structures, such as the business organisations of that society (Crawford & Mills, 2011). When a formative context is stable, it reinforces the system of social division and hierarchies, roles and ranks (Unger, 2004). The dual nature of structure demonstrates the ability of hierarchical organisational structures to regulate organisational activities and to be shaped accordingly (Blackler, 1992, Townley, 1994). One may ask the question whether the formative context of society and its institutions currently found in the mining and industry in general, is indeed stable. If it is not, there will be no stability in social division, hierarchy, roles and ranks. Is this not what is happening in South Africa and the mining industry now? If this is true, one can with care assume or expect to observe a "confused" value structure in relation to Schwartz's value framework at the various levels of work.

Wicks (1998, p. 370) defined organisational structure as follows; "The organisational characteristic we call structure refers to an organisation's patterns of regularly occurring activities. Activities such as decision-making, delegation, supervision, planning, and co-ordination, although differing in specific forms between organisations, come to constitute organisational structure to the extent they are continuing, and promote organisational effectiveness".

According to Blaug (2009) it is a commonly held opinion that hierarchy is necessary for effective decisionmaking and that its occurrence is somehow 'natural' in human affairs and therefore a logical managerial expectation (Blaug, 2009). Chasi and De Wet (2008) indicated that if emphasis is placed on the controlling function of organisational structure, then the organisational structure represents a state of equilibrium among opposing forces to power in the organisation. The underlying view of the rational structure approach is that power is

instrumental in achieving organisational goals. Power is used in specific behaviours, for example communication of specific objectives and the associated instructions, and is a reflection on decisionmaking and the effective allocation of resources, and the coordination of activities (Chasi & De Wet, 2008).

Organisations will always be pyramidal in shape, obviously, this pyramid will be flatter or steeper depending on the type of organisation, but it is a fact that positions and people occupying them in this pyramid will never be equal, except at the same levels of the hierarchy. This is based on the simple fact that an organisation needs a limited number of leaders and more people that actually perform the activities or work (Blaug, 2009).

Based on the literature above it is possible to define organisational hierarchy as follows; Organisational hierarchy in most bureaucratic organisations is pyramidal in nature and is defined by (a) the formative context of the society as reflected in the businesses/ organisations of that society (b) where work occurs in lower or higher degrees of complexity, (c) and people communicate, and have access to each other, (d) informed by the business/functional objectives, operational requirements, operating procedures, policies and process flows of the organisation, (e) to perform a pattern of activities related to decisionmaking, delegation, supervision, planning and co-ordination, (f) at different levels of complexity separating these activities into a serious of steps or levels of work, (g) of which the coherent sum represents the achievement of business objectives as defined in the business strategy.

3.4.1 Making sense of organisational hierarchy as it relates to values.

If the above definition is analysed in its components, with the specific intention to confirm the link between organisational hierarchy and values, it provides the following possible interpretation;

Organisational hierarchy in most bureaucratic organisations is pyramidal in nature and is defined by,

(a) the formative context of the society as reflected in the businesses/ organisations of that society,
    - If the organisation's values are in harmony with the broader societal values, then it is appropriate for the organisation to require that individuals should behave and express their own personal style and temperament within the limits of those values.

The aim is not a rigid uniformity of outlook, but a workable harmony of values that can allow for a synergistic drive towards the corporate goals (Jaques, 1996). It is known that Benevolence and Universalism values are the most stable across societies as individuals in general link higher value priorities to it, according to Schwartz and Bardi (2001). It might be possible to speculate that these values could be similar across the various levels of work as well. Also, see Section 3.5 second paragraph. In addition, the researcher is of the opinion that security values will also be similar or shared across the levels of work. Societies in transition, like South Africa, is often viewed as unstable societies and in this case be associated with social instability and insecurity across all levels of work.

(b) a formed routine where work occurs in lower or higher degrees of complexity,

- Vales are conceptions or beliefs about desirable modes of conduct/states of being that transcend situations, guide decisionmaking/evaluation of events, and ordered by importance and most often complexity (Gecas, 2000). Hence, there should be values that are more important at the different levels in the hierarchy.

(c) and people communicate, and have access to each other,

- Values are cognitive representations of human goals/motivations about which people must communicate to coordinate behaviour (Bilsky & Schwartz, 1994). Therefore, what motivates an individual at a lower level in the hierarchy might be dependent on the value priorities of the individual. Motivated from Section 3.1of this chapter, a good example will be conformity and self-direction values. The value priorities of basic and semi-skilled employees should be high on conservation (security, conformity, tradition) and low on openness to change (self-direction, stimulation). The opposite will be applicable to skilled and managerial employees, indeed recognising that it could vary at the different levels of work.

(d) informed by the business/functional objectives, operational requirements, operating procedures, policies and process flows of the organisation,

- Vales are cognitions that enable individuals to define situations, elicit goals, and guide actions (Verplanken & Holland, 2002)
- Schwartz (2010) indicated that actions become more attractive, and more valued subjectively, to the extent that they promote attainment of specific values (individual and group).

(e) to perform a pattern of activities related to decisionmaking, delegation, supervision, planning and co-ordination,

- Values, as a form of structured knowledge, serve as an important foundation for the social construction of meaning (Rohan, 2000).
- Tetlock (1986) suggests that individuals make decisions based on the integrative complexity of available knowledge, their reasoning ability (cognition), and motivation (affect).
- Values and action are linked through sequential processes: values are motivational, lead toward the prioritisation of certain actions over others, and the influence of values on attention, perception, and interpretation within situations. Values, when activated, influence the planning of action or actions (Schwartz, 2004).
- It would be generally agreed that the valences, or subjective values, of potential actions and outcomes are crucial variables that affect the decisionmaking process (Feather, 1995).
- Values influence a person's cognitive-affective appraisal of a situation in relation to both means and ends (Feather, 1995).
- Actions and their possible outcomes become linked to the cognitive-affective system via a person's dominant needs and values (Feather, 1995).

(f) at incoherent levels of complexity separating these activities into a serious of steps or levels of work,

- According to Halaby (2003) cognitive ability and years of schooling has powerful effects on values, especially with respect to occupation, and the capacity to use values also reflects metacognitive ability (Mischel, 1998). Hence, those at the lower level in the hierarchy may have lower levels of education (not necessarily lower intelligence), influencing their values.
- The coherent nature of cognition is developed through the life span of an individual, based on their inherited biological traits and exposures to various aspects of the internal (family, close friends) and the external environments (society, schools, universities, friends, regional and ethnic groupings, organisations, working groups, profession, etc.). The nature of these exposures enables individuals to function at different levels of work.

(g) of which the coherent sum represents the achievement of business objectives as defined in the business strategy.

- Values are preferred ways of being or end states of existence and evaluations of abstract concepts, having prescriptive qualities, that are standards for the evaluation

of self, others, actions, attitudes, and objects (Miao, Roese, Seligman & Katz, 1996).

The above enhance the understanding of the relationship between what is defined as organisational hierarchy and values. Organisations are therefore a representation of the values of the people working for an organisation as acquired by them through society, family, schools, university, professions, education and income, to name a few, and based on the literature these two constructs are therefore inseparable.

3.4.2 Decisionmaking and work complexity in organisations.

As indicated in Chapter 2, Section 2.3 and 3.3 values, education, occupation (level of work) and the complexity of work (cognition) an individual can aspire to be directly related. A simple example of task complexity is, when sweeping a floor there are only a few variables to consider, such as where to start, how to sweep a carpet versus a tile floor, and how fast to sweep. Everything is defined and observable, fixed and not in flux or tangled up (linear, a defined starting and end point). At the other extreme, to direct a program to build a shuttle service between the moon and earth contains an uncountable number of variables. For example, the state of the surface of the moon, lunar and earth movement and its position in time, rocket science, advanced computer modelling and programming of control systems, physiology, selection and training of astronauts, etc. (Jaques & Clement, 1991). These variables represent a coherent shifting and changing accumulation of tangled elements, new knowledge is appearing, many factors are at best incompletely known, and all are interwoven in a great tangled bundle and the patterns keep changing (non-linear, no defined starting and end-points) (Jaques & Clement, 1991).

In Table 3.4 below, the process of cognition or mental processing (decisionmaking) is related to values activation. Paterson defines the process of decisionmaking as follows: In order to utilise our knowledge framework, to analyse, interpret, conclude and to decide on the appropriate action (Paterson, 1972a), the following process or logical sequence of events will take place:

Table 3.4 - The Process of Decision Making and Values Activation

	Decisionmaking	**Values activation**
Step 1	There must be information that stimulates an individual's knowledge framework,	values must be activated,
Step 2	Through mental processing the individual interpret and evaluate the information,	values influence attention, perception, and interpretation within situations,
Step 3	Select an appropriate solution – which is the decision or action that an individual will perform,	values are motivational, lead toward the prioritisation of certain actions over others,
Step 4	The execution of the decided action.	values when activated influence the planning of action or actions.

Adapted from (Paterson, 1972a, Schwartz, 2004)

Table 3.5 provides an interpreted model of three possible types of decision systems found in organisations, in an attempt to create an understanding of complexity. The link with level of work is indicated in italics in the header row, Table 3.3.

Table 3.5 - Describing Complexity in Decision Making Systems

Defined Systems *This covers work in the Basic, Semi-skilled and overlapping into the skilled levels of work (Paterson A, B and Lower C Band)*	**Ordered Complex Systems** *Work at junior to senior management with possible overlap at the higher end of the skilled level (Paterson C Upper, D and Lower E band)*	**Complex Systems** *Work at Executive level with some overlap possible at Senior Management level (Paterson E upper and F band)*
Cause and effect is known, as it is procedurised and linear, known input and outcomes, variations are generally not possible.	Cause and effect relations exists, but is not fully known, or only known by a number of specialists.	Cause and effect is coherent and is not repeatable.
Interacting elements of the system are described and known.	A number of interacting elements are defined in most cases by the disciplines best practice or first principle definitions, but integration with other systems or processes is required, which create a number of interacting elements.	It involves large numbers of interacting elements related to functions across the business value chain, influenced by both internal and external factors, which could include national and international markets, economies, etc.
Interactions are linear, inputs and outputs are known and defined. Changes of anything happening that is not controlled are limited, therefore defined consequences.	Interactions are more linear, but are moving towards non-linearity on the basis that the focus of the systems is influenced by other systems or functions in the business value chain or working environment. Outcomes are reasonably sure, but only visible in time and might not be as predicted or calculated. Controllable consequences.	The interactions are nonlinear, and minor changes can produce dispropor-tionately major consequences, like business failure, impact on regional or national and in some cases international economies.

Defined Systems *This covers work in the Basic, Semi-skilled and overlapping into the skilled levels of work (Paterson A, B and Lower C Band)*	Ordered Complex Systems *Work at junior to senior management with possible overlap at the higher end of the skilled level (Paterson C Upper, D and Lower E band)*	Complex Systems *Work at Executive level with some overlap possible at Senior Management level (Paterson E upper and F band)*
The system and its parts are mostly in a fixed state and if the defined procedures/polices are followed no alternatives are possible.	The system is dynamic, but the focus is more internal in terms of the business value chain. Solutions can be imposed with great success, but is normally foreseen actions, but could also in some cases arise from circumstances.	The system is dynamic, the whole (internal and external) is greater than the sum of its parts (in physics it is referred as coherence), and solutions cannot be imposed; rather, they arise from the circumstances. This is frequently referred to as emergence.
The system has a history, but the past and present are seldom different, limited variation of defined themes of work or production.	The system has a history, and the past is integrated with the present; the elements evolve with one another in the internal business environment. Evolution is recommended, but not permitted without agreement or approval from decision makers in the complex domain.	The system has a history, and the past is integrated with the present; the elements evolve with one another and with the environment; and evolution is irreversible.
This system is ordered and predictable, conditions and systems are consistent and change is tightly controlled and implemented.	The system is in a continuous flux between order and change. In this system, incoming data is analysed and interpreted using structured techniques to make assumptions or reach conclusions which are then used to create or improve defined systems.	However, a complex system may, in retrospect, appear to be ordered and predictable, hindsight does not lead to foresight because the external conditions and systems constantly change.
The system constrains any possible variables, because it is defined. Inputs and outputs are known with no variation possible.	The system functions within controlled constraints, where the variables allow reasonable interpretation and conclusions to be formed, but outcomes are also not guaranteed.	In a complex system the variables and the system constrains one another, especially over time. This means that a person cannot forecast or pre-empt the exact results.
System outputs known, either immediately, at the end of a cycle or number of cycles over a maximum period of 3 months.	System outputs are known in a short period of time, a cycle, or number of cycles, but mostly in less than 12 months.	Success of system outputs only known in time, it is not possible to foresee/calculate all factors that could impact on the system outputs.

Source: This model was developed by integrating information from (Paterson, 1972a), (Jaques, 1996), and Kurtz and Snowden (2003) on the Cynefin model and a description of complex systems by Snowden and Boone (2007).

Beyond complex systems are systems of chaos and even disorder according to the Cynefin framework (Kurtz & Snowden, 2003, Snowden & Boone, 2007), this is however not discussed in this document, as it appears to be variations of complex systems. The complexity of tasks or work in the working environment is directly related to the complexity of the business value chain (type of business) and the number of functional process in the business value chain (Jaques, 1976).

3.5   A reflection on Schwartz's value theory in an organisational context

Nations, societies, organisations, organisational hierarchy, socio-economic status, education and values are inseparably inter-related as shown in the literature review in the previous sections. According to Schwartz and Sagie (2000) two important characteristics of societies are likely to influence and/or be influenced by value importance and consensus: socio-economic development status and the level of democratisation. What is important for this study is that these characteristics are related to industrialisation and associated with cultural change (Inglehart, 1997). Individuals acculturate to a more modern value system by incorporating the values embedded in the institutions of industrialised societies into their personal value systems (Schwartz & Sagie, 2000). This point is critical for this study, according to Fischer and Schwartz (2011) their analyses among European samples with the PVQ, indicates that country (nation level) explains on average 4% of the variance in the PVQ value items. In other words, one may assume that it is more likely that employees working in the mining industry could have acculturated to some of the western values based on organisational rather than nation level value influences. The mining industry therefore might have a set of shared and opposing values that is unique in relation to Schwartz's value theory, and could be unique between the various levels of work based on the variables and important determinants responsible for the difference in individual value priorities.

Schwartz and Sagie (2000) found that socio-economic development increases the importance of independent thought and action, openness to change, concern for the welfare of others, self-indulgence and pleasure, and the degree of consensus among citizens that these are relatively important goals. Universalism and benevolence, the two self-transcendence value types, are among the three most important value types for most people in most nations worldwide. It is natural for people to value them highly (Schwartz & Bardi, 2001). Important to note when interpreting the data of this study, in the case of nations with a lower socio-economic status, individuals are focused on their own survival needs and may attribute little importance to the needs of others. This point is confirmed by Laher (2013) which highlights that collectivist cultures will most likely not attend to the needs of all others but rather to those whom they deem to be part of the in-group, for example immediate and extended family members, long-term work, and interest groups. This is why lower value consensus for universalism and benevolence values are observed in the nations with a lower level of socio-economic development (Schwartz & Sagie, 2000).

Limited research has been performed using Schwartz's values theory to distinguish between value priorities in a more defined context such as levels of work. Some work has been performed using occupations or job categories like white-collar workers and manual workers. Some South African information is also available for the black population group.

The South African society with its landscape of inequalities, cultural diversity and large variance in socio-economic status, often considered as an abnormal society, will most certainly provide challenges to measure an abstract concept like values (Schwartz, 1992). This is evident in the study performed by Schwartz et al. (2001) to test the validity of the then newly developed PVQ at the time. The study is from a representative national sample of 2000 Black South Africans who responded to the PVQ in face-to-face interviews as part of a research project by Markinor in 1997. Of this sample, only 4% had schooling beyond high school, and 26% had not completed sixth grade. This is the least-educated sample in which the values theory has been examined (Schwartz et al., 2001).

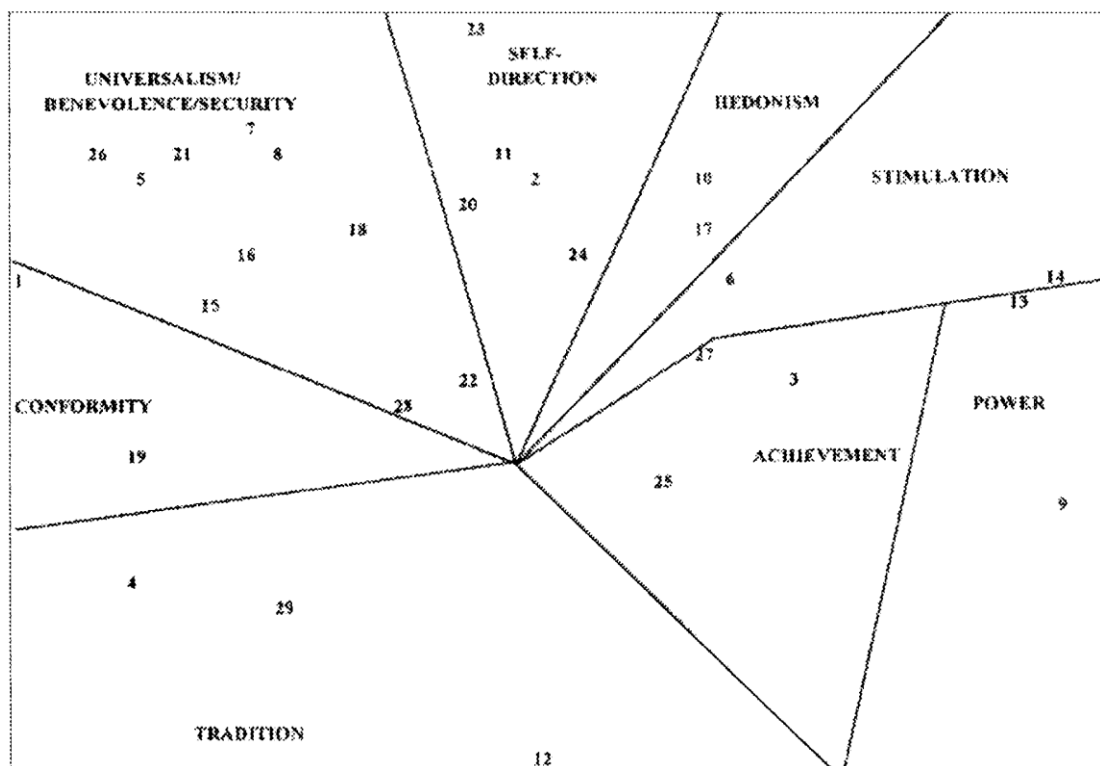*Figure 3.1.* Value structure of Black South Africans studied with the Portraits Value Questionnaire: multidimensional scaling analyses

Figure 3.1 shows the two-dimensional MDS projection of the PVQ items. The MDS projection produced distinct regions for seven of the ten lower order values: self-direction, hedonism, stimulation, achievement, power, tradition, and conformity. Important to note is the fact that

the items intended to measure benevolence and universalism values forms a joint region and corresponds to the higher order self-transcendence value in the values theory. This region also includes the three items intended to measure security values. Important, is that the four higher order values are opposing and adjacent in the correct order and forms the circular continuum as postulated by the theory (Schwartz et al., 2001).

Similar to studies in Italy, power values emerge behind achievement values. The location of the security items in the self-transcendence, higher order region is unusual. It may reflect the sensitivity of value structures to powerful historical events. The continuing social, political, and economic transition to a non-racial democracy can account for the association of security with the pursuit of justice and equality, rather than with preserving the status quo (Schwartz et al., 2001). It might therefore be possible to assume that the research data will also yield results where several values are integrated into one dimension, instead of several distinct values at some levels of work. Confused value relationships and priorities might be more prevalent after 12 years have passed since the 2001 study. It is possible that value systems change over time, particularly when situations arise that challenge established norms or cause a re-examination of value structure (Danis et al., 2011)

Figure 3.2 provides a possible integrated model of values as described by Avallone et al. (2010) and levels of work as an interpretation of the available literature. Figure 3.2 is extended in Figure 3.3 to include additional definitions of the ten values as described by Schwartz (2006) and in addition indicating the possible link to personality according to the study of Roccas et al. (2002). However, the link with levels of work is directly related to the base definitions of the four higher order values and the associated link between background variables and levels of work. This was explained in the previous sections of this research document. The complexity of any prediction on the lower order values in relation to levels of work according to the models in Figure 3.2 and 3.3 is rather bold and believed not to be as simple as shown in the model. This is evident from the findings of Koivula and Verkasalo (2006) for a sample of students, white-collar workers and manual steel workers in Finland, indicated as Figures 3.4, 3.5 and 3.6 respectively. The purpose of the study was to determine if the value structure of Schwartz is supported in other professions or positions requiring lower educational qualifications as in the case of teachers and university students. In this case using the PVQ and not the initial Schwartz's Value Survey (SVS). In addition, the study also reflected on the similarity in value structures amongst the three groups over time.

Higher Order Dimensions of Culture as Defined by Schwartz	Schwartz's 10 Values, as adjusted by Avollone et al, (2010).	Levels of Work			
		Managers	Skilled	Semi-skilled	Basic-skilled
		Minority of Workers — Acculturation normally follows the logical route of the minority acculturating to the Majority's values, but acculturation can be reciprocal, in other words, the dominant group could also adopt values typical to the minority group.			**Majority of Workers**
		Individualism Organisations in SA typically structured and managed according to Western Mould	Acculturation agents		**Collectivism** Recognised value system of Africa
Self Enhancement	**Power**, adhesion to this value involves placing importance on one's social status and on the attainment of a prestigious or authoritative position, interest in increasing one's influence or in the ability to control other members of the organisation and the acquisition of resources.	**Self Enhancement** - Managers should assign higher importance to the lower order values, achievement, power and hedonism of this dimension. Achievement values relates to the interest to attain personal success, power values focus on social esteem, and hedonism on self-gratification, therefore the argument that a higher importance is expected.			**Self Enhancement** -Semi skilled and basic skilled employees should assign lower importance to the lower order values, achievement, power and hedonism of this dimension. But with achievement's negative connotation to fostering social approval and the possible disruption of social relations, this value might not be significantly different in the organisational context.
	Achievement: adherence to this value implies interest in obtaining personal success and growth and the demonstration of one's competence in accordance with cultural and contextual standards (e.g., capacity, experience, ambition).				
	Hedonism: this value places importance on aspects of gratification, satisfaction, entertainment, and pleasantness, which are possible within one's work life and ensuring that one's work, does not interfere with one's private or leisure time.				
Openness to Change	**Stimulation**: this value emphasises the importance of challenge, novelty, and curiosity, exploration all of which makes one's work life exciting and generates new sources of interest.	**Openness to Change** - With increased education and socio-economic status managers should assign higher priorities to some of the lower order values of this dimension.			**Openness to Change** -Semi skilled and basic skilled employees should assign lower importance to the lower order values of this dimension.
	Self-direction: this value attributes importance to the possibility that, while at work, individuals may open-ly express themselves, engages in autonomous thinking, make independent choices, utilize one's creativity and fully use and demonstrate one's intelligence.				
Self Transcendence	**Universalism:** adherence to this value determines the importance of assuming a tolerant, understanding, appreciative and protec-tive position towards others (organizational colleagues and more generally, individ-uals one meets).	**Self Transcendence** - With universalism and benevolence values being regarded as the 1st and 2nd most important values it is expected that there will be differences in scoring, but not significantly different. In principle Managers should assign a higher priority to this values, because of their socio-economic status.			**Self Transcendence** - The literature in chapter two provides that individual's in a lower socio-economic setting will probably assign a lower importance to these values. It is expected based on the definition of these values that benevolence values with an out group focus will be assigned a very low priority and universalism which is more in-group focus might not be significantly different across the levels of work.
	Benevolence: adherence to this value type reflects the importance of actively committing to favouring the wellbeing of all those one has contact with during one's professional activities, thus demonstrating oneself as honest, sincere, open to helping and responsible.				
Conservation	**Tradition:** this value considers as central the contextual habits and customs, adhesion to ways of thinking and consolidating commitment to preserving cultural tradition.	**Conservation** - It is expected, based on the opposing values principle, that Managers will not assign a high importance to the lower order values of this dimension.			**Conservation** -Semi skilled and basic skilled employees should assign a higher importance to these values, as these values are in line with the basis of the Ubuntu values and collectivism.
	Conformity: this value involves the adhesion to rules, expectations and social pressure, thus demonstrating self-discipline and "loyalty" to elders' suggestions but also restricting one's network of actions and/or conditioning one's choices, inclinations, impulses and desires.				
	Security: adhesion to this value refers to the importance of preserving order, stability, harmony and security within the physical environment, work related relationships, and professional activities.				

Figure 3.2. An integrated model showing the possible relationship between values and levels of work

Higher Order Dimensions of Culture as Defined by Schwartz	Schwartz's 10 Values, as adjusted by Avollone et al, (2010).	Specific values included by Schwartz in the 10 values of PVQ by Schwartz (2006).	Personality as defined by big Five and related to PVQ by Roccas, Sagiv, Schwartz & Knafo (2002). Abbreviations Ex = Extroversion Op = Openness Agr = Agreeableness Con = Conscientiousness Neu = Neuroticism
Self Enhancement	**Power**, adhesion to this value involves placing importance on one's social status and on the attainment of a prestigious or authoritative position, interest in increasing one's influence or in the ability to control other members of the organisation and the acquisition of resources.	Social status and prestige, control or dominance over people and resources. Power values may also be transformations of individual needs for dominance and control (authority, wealth, social power, preserving my public image, social recognition)	Gregariousness - Ex Assertiveness - Ex Excitement Seeking - Ex Achievement Striving - Con
	Achievement: adherence to this value implies interest in obtaining personal success and growth and the demonstration of one's competence in accordance with cultural and contextual standards (e.g., capacity, experience, ambition).	Achievement values emphasize demonstrating competence in terms of prevailing cultural standards, or social approval. (ambitious, successful, capable, influential. intelligent, self-respect, social recognition).	Warmth Ex, Assertiveness - Ex, Activity -Ex, Excitement Seeking - Ex, Positive Emotions - Ex, Competence - Con, Order - Con, Achievement Striving - Con Self-Discipline - Con
	Hedonism: this value places importance on aspects of gratification, satisfaction, entertainment, and pleasantness, which are possible within one's work life and ensuring that one's work, does not interfere with one's	Pleasure or sensuous gratification for oneself. Hedonism values derive from organismic needs (pleasure, enjoying life, self-indulgent).	Excitement seeking - Ex Positive emotions - Ex Feelings - Op Values - Op
Openness to Change	**Stimulation**: this value emphasises the importance of challenge, novelty, and curiosity, exploration all of which makes one's work life exciting and generates new sources of interest.	Relates to the needs underlying self-direction values. (a varied life, an exciting life, daring)	Gregariousness - Ex, Assertiveness- Ex, Excitement seeking - Ex, Positive emotions - Ex, Fantasy - Op, Aesthetics -Op, Feelings - Op, Actions - Op, Ideas - Op, Values - Op
	Self-direction: this value attributes importance to the possibility that, while at work, individuals may open-ly express themselves, engages in autonomous thinking, make independent choices, utilize one's creativity and fully use and demonstrate one's intelligence.	(creativity, freedom, choosing own goals, curious, independent, self-respect, intelligent, privacy)	Fantasy - Op, Aesthetics -Op, Feelings - Op, Actions - Op, Ideas - Op, Values - Op
Self Transcendence	**Universalism**: adherence to this value determines the importance of assuming a tolerant, understanding, appreciative and protec-tive position towards others (organizational colleagues and more generally, individ-uals one meets).	The welfare of those in the larger society and world and for nature (broadminded, social justice, equality, world at peace, world of beauty, unity with nature, wisdom, protecting the environment, inner harmony, a spiritual life)	Fantasy - Op Aesthetics -Op Feelings - Op Actions - Op Ideas - Op Values - Op
	Benevolence: adherence to this value type reflects the importance of actively committing to favouring the wellbeing of all those one has contact with during one's professional activities, thus demonstrating oneself as honest, sincere, open to helping and responsible.	Critical are relations within the family and other primary groups. Benevolence values emphasize voluntary concern for others' welfare. (helpful, honest, forgiving, responsible, loyal, true friendship, mature love, sense of belonging, meaning in life, a spiritual life).	Warmth - Ex, ,Trust - Agr Tender mindedness - Agr, Altruism - Agr Compliance - Agr, Modesty - Agr, Dutifulness - Con
Conservation	**Tradition**: this value considers as central the contextual habits and customs, adhesion to ways of thinking and consolidating commitment to preserving cultural tradition.	Tradition and conformity values are especially close motivationally; they share the goal of subordinating the self in favour of socially imposed expectations. Tradition entails subordination to more abstract objects, religious and cultural customs and ideas	Straightforwardness - Agr, Altruism - Agr Compliance - Agr, Modesty - Agr, Tender mindedness -Agr, Deliberation - Con, Anxiety - Neu, Depression - Neu Self-consciousness - Neu, Vulnerability - Neu
	Conformity: this value involves the adhesion to rules, expectations and social pressure, thus demonstrating self-discipline and "loyalty" to elders' suggestions but also restricting one's network of actions and/or conditioning one's choices, inclinations, impulses and desires.	Conformity values emphasize self-restraint in everyday interaction, usually with close others. (obedient, self-discipline, politeness, honouring parents and elders, loyal, responsible)	Straightforwardness - Agr, Altruism - Agr Compliance - Agr, Modesty - Agr, Tender mindedness -Agr, Order - Con Dutifulness -Con, Self-discipline - Con, Deliberation - Con, Vulnerability - Neu
	Security: adhesion to this value refers to the importance of preserving order, stability, harmony and security within the physical environment, work related relationships, and professional activities.	Safety, harmony, and stability of society, of relationships, and of self. Security values derive from basic individual and group requirements, (social order, family security, national security, clean, reciprocation of favours, healthy, moderate, sense of belonging)	Altruism - Agr Competence - Con Order - Con Dutifulness - Con Self-discipline - Con Deliberation - Con Anxiety - Neu

Figure 3.3. Extending the description of values in Figure 3.2 to include Schwartz's definition and the possible links with Personality

65
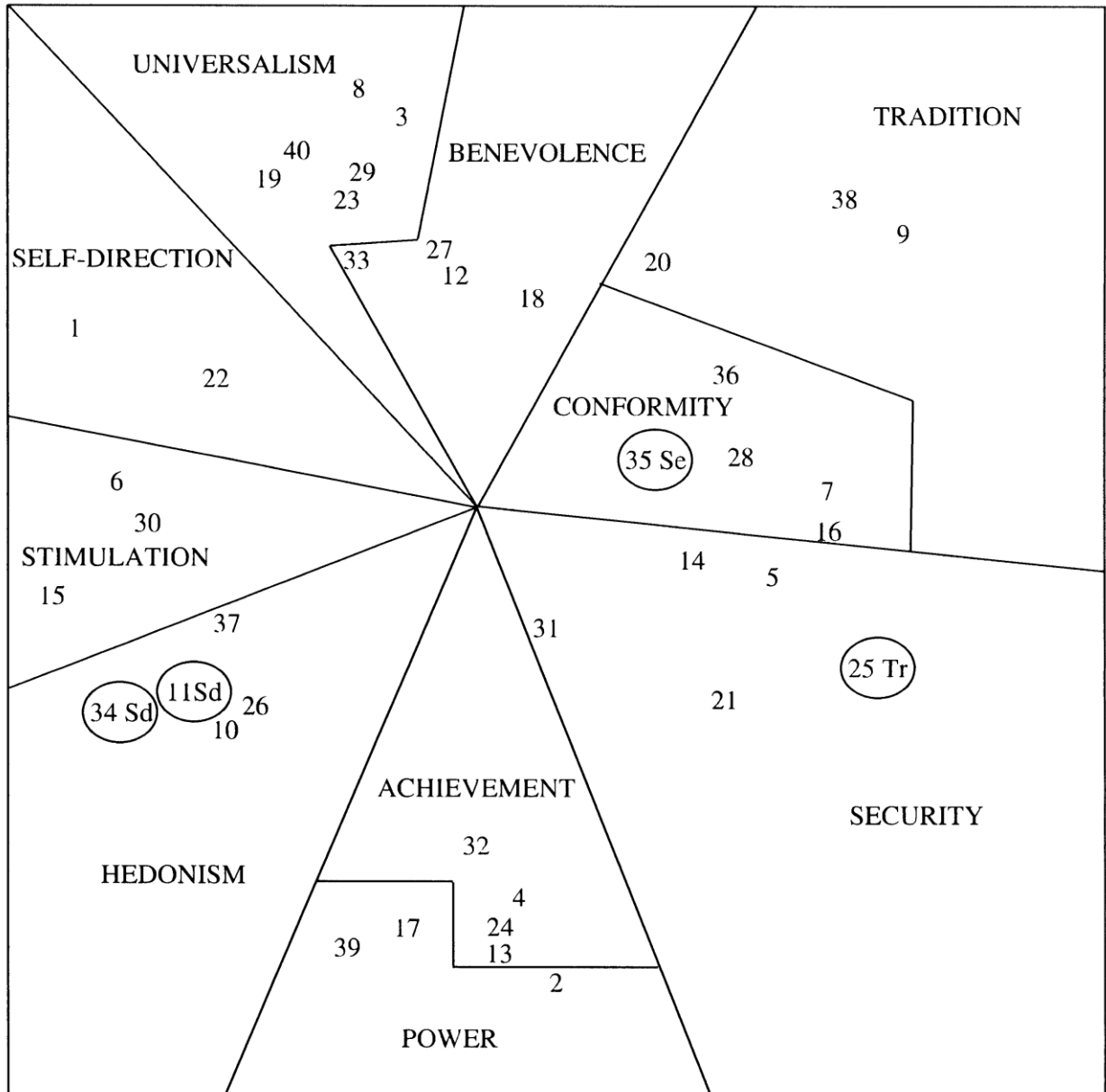
Figure 3.4. Values structure of Finnish university students studied with the Portraits Value Questionnaire: multidimensional scaling analyses (Koivula & Verkasalo, 2006)

The value structure of university students followed Schwartz's value theory. This fit is almost a perfect replica of results achieved previously with the SVS by Schwartz in the European values survey (Koivula & Verkasalo, 2006).
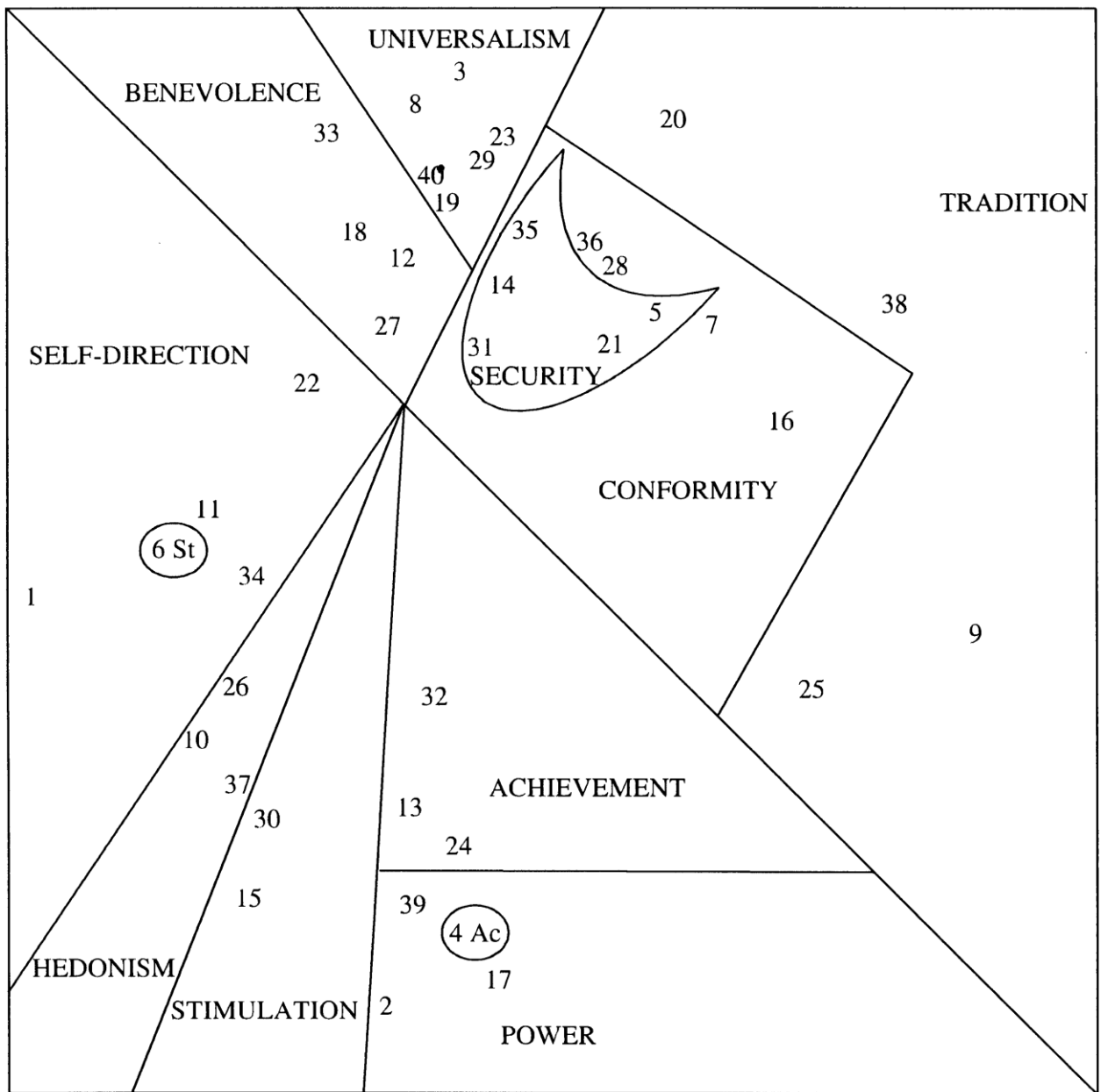
Figure 3.5. Values structure of Finnish White-Collar workers studied with the Portraits Value Questionnaire: multidimensional scaling analyses (Koivula & Verkasalo, 2006)
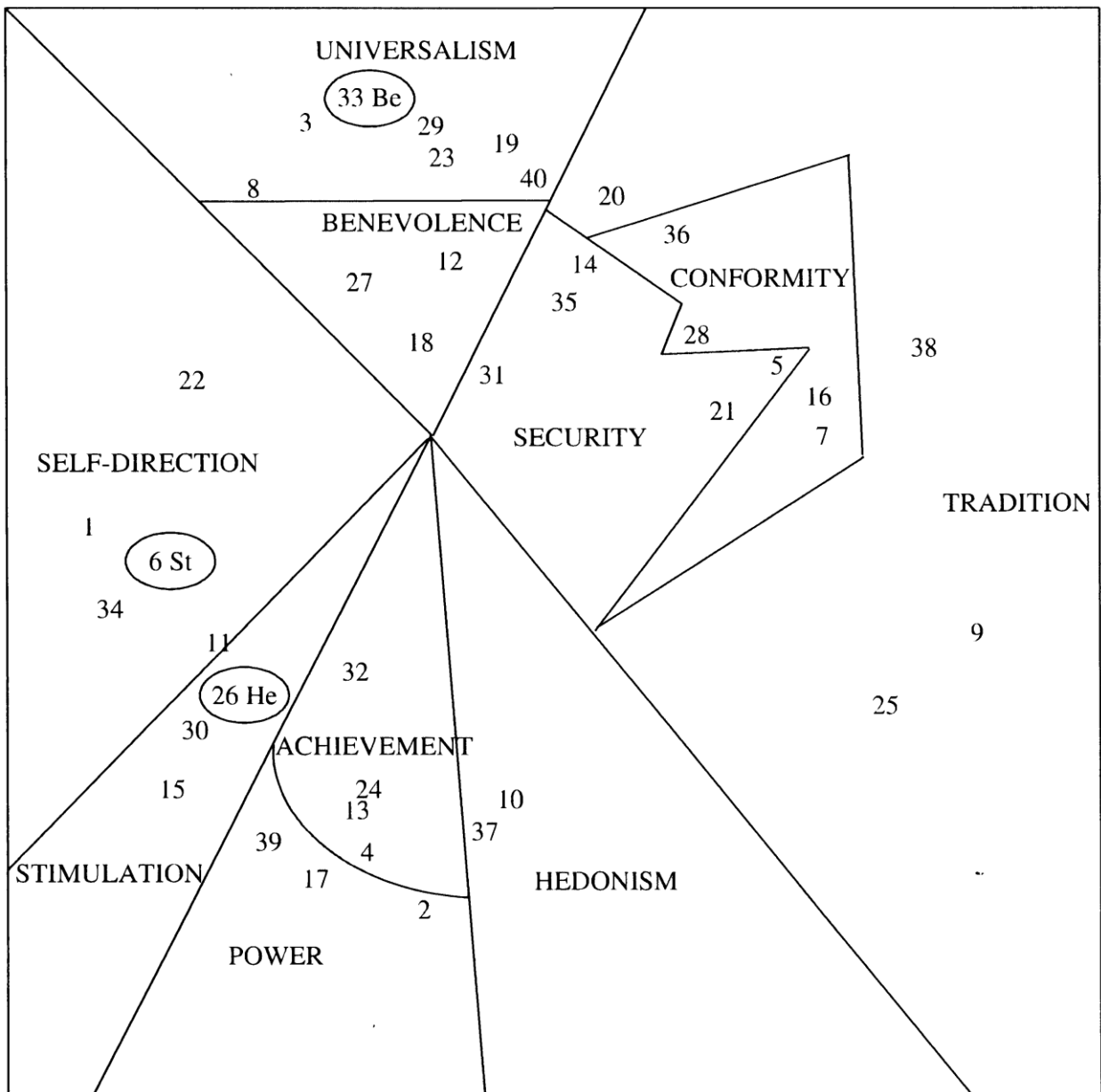
Figure 3.6. Values structure of Finnish manual workers studied with the Portraits Value Questionnaire: multidimensional scaling analysis (Koivula & Verkasalo, 2006)

The value structure of the Finnish manual workers with low educational levels mainly supported the theorised pattern in Figure 2.1 as proposed by Schwartz (1992, 1994). The two dimensions, self-enhancement versus self-transcendence, and openness to change versus conservation, are present. It is important to note the anomaly in the lower order security value that is located adjacent to benevolence and universalism (Koivula & Verkasalo, 2006).

The finding in relation to the shift in security values in manual workers (Figure 3.6) is not explained by the level of education or the ability to deal with abstract concepts (see next paragraph emphasising the dynamic nature of values). A similar structure emerged not only

among manual workers with low educational levels, but also among quite highly educated white-collar workers, Figure 3.5 (Koivula & Verkasalo, 2006). This is also in line with the findings of Schwartz et al. (2001) in the South African study, where security and self-transcendence values where integrated as well.

Note the position of the lower order value Hedonism in manual workers in relation to the student and white-collar information, where it was correctly positioned. Koivula and Verkasalo (2006) indicated that there were other, minor deviations from Schwartz's (1992) value theory in the value structure of the steelworkers. Some adjacent values formed joint regions or changed places with each other. This is a common variant to the ideal value structure as postulated by Schwartz (1992) in his original study and is a result of the dynamic and changing nature of values (Koivula & Verkasalo, 2006). In terms of this study, it might be possible to assume that values will not follow the same order and position as postulated by Schwartz's value theory. The reason for this assumption is that Schwartz et al. (2001) and also Koivula and Verkasalo (2006) indicate that certain values, like security, are more prone to be affected by changes in society and historical events like economic depression. According to Schwartz et al. (2001), the unusual location of the security values in South African Blacks may be a result of the recent historical struggle against apartheid that might explain the association of security with the pursuit of justice and equality.

In order to understand the difference in the value hierarchy across the levels of work in an organisation, it must be possible to explain why the value hierarchy is more or less desirable across levels of work. According to (Schwartz (1996), 2006)) the three demands of human nature and requirements of social interaction are particularly relevant to explain observed value hierarchies. Firstly, the most prominent is the promotion and preservation of supportive relations among members of in-groups. The focus of value transmission is to develop commitment to positive relations, identification with the group, and loyalty to its members (benevolence values). Secondly, individuals must be motivated to invest the time (see Jacques's definition of values in 3.3 in relation to this), the physical and the intellectual effort needed to perform productive work, to solve problems that arise during task performance, and to generate new ideas and technical solutions (Self-direction values). Lastly, it is socially acceptable to legitimise the pleasure of self-oriented needs and desires to the extent that it does not undermine group goals. Individual denial of such pleasures would frustrate individuals, leading them to withhold their energies from the group and its members. The "group" referred

to in the previous sentences, could be for example individuals at the same level of work, occupation or function, ethnic groups, different unions, etc.

In conclusion, there will be many factors to consider when interpreting the value priorities at the various levels of work as is evident from the literature review. This is because the values construct is a very complex aspect of the social science field, as it spans all aspects of human nature, how they act and interact. The following findings of Fischer and Schwartz (2011) as a concluding comment highlights this and might be reflective of the South African and Mining situation; in practice value priorities of individuals vary because of their different experiences, social locations, and genetic heritages. When the mean values of individual responses are combined, it reflects on the latent cultural value orientations to which all members are exposed and to which they acculturate. The mean values serve as unique markers for the underlying culture and it is possible to use these values to measure or identify cultural differences (Fischer & Schwartz, 2011). Even relatively small differences in the latent values which guide and justify institutional and national policies, may generate substantial intergroup, national and even international conflict (Fischer & Schwartz, 2011). Values are truly an abstract construct. The attitudinal and behavioural implications associated with a value may depend on the context and may differ across societies. Many intercultural conflicts or misunderstandings involve situations where either (a) the same or similar values map onto different attitudes and behaviours or (b) particular attitudes and behaviours are mapped onto different values (Fischer & Schwartz, 2011). The following is an example of how a particular behaviour may map onto different values; when a basic-skilled worker enters his supervisor's office, he will immediately take a seat, without being invited to do so. The supervisor or manager will consider it rude to sit down without being invited, while the workers embedded value is that he/she may not speak down to a person in a more senior position or status than himself, he should be lower than that person. What is individually perceived as acceptable depends on the social and cultural context.

Cultural value differences do give rise to misunderstanding and conflict. Intergroup conflict may arise and be fuelled both by societal differences in the institutional practices and policies that express latent cultural value orientations and by the behavioural expressions of basic individual values (Fischer & Schwartz, 2011).

3.6   Summary

Individualism and collectivism remains one of the most recognised proxies to study culture at nation level. The link with power distance indicates to what extent the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. In large power distance countries, there is considerable dependence of subordinates on supervisors. Subordinates respond according to instructions and eventually follow the routine of work, and workers at this level either prefer such dependence (in the form of an autocratic or paternalistic manager/supervisor relationship) or reject it entirely. Power distance can be linked to levels of work, i.e. at the basis skilled level large power distance, and at the management level a small power distance.

Socio-economic status, education, intelligence and occupation or level work, is interrelated constructs. This is confirmed by the works of Schwartz referring to these as background variables, which provide for the difference in individual value priorities. In the longitudinal study of Cheng and Furnham (2012) they found that education is the most important factor for occupational attainment (level of work). This study provides specific evidence that education is also the strongest predictor of promotion and upgrading of occupational attainment (level of work), and is directly linked to childhood intelligence.

Organisational hierarchy in most bureaucratic organisations is pyramidal in nature defined by the formative context of the society as reflected in the businesses/ organisations of that society. Work occurs in lower or higher degrees of complexity, where people communicate, and have access to each other, informed by the business/functional objectives, operational requirements, operating procedures, policies and process flows of the organisation to perform a pattern of activities related to decisionmaking, delegation, supervision, planning and co-ordination at incoherent levels of complexity separating these activities into a serious of steps or levels of work. Each aspect of this definition is linked back to the values construct, clearly showing that organisational values are established by the people working for the organisation.

In order to understand the difference in the value hierarchy across levels of work in an organisation, it is necessary to explain why the value hierarchy is more or less desirable across the different levels of work. Value priorities of individuals vary because of their different experiences, social locations, and genetic heritages, but when the mean values of individual responses are combined that it reflects on the latent cultural value orientations to which all

members are exposed and to which they acculturate. These values serve as unmistakable markers for the underlying culture, which make it possible to measure or identify cultural differences.

CHAPTER 4 – RESEARCH METHODOLOGY

4   Introduction

Research is a logical and systematic search for new and useful information on a particular topic. It is a structured enquiry, using acceptable scientific methodology to solve problems and create new knowledge that is generally applicable. The research process is represented by the collection, analyses and interpretation of information to answer questions related to a specific question or topic (Hair, Black, Babin & Anderson, 2010). In the research methodology chapter, researchers attempt to analyse the given question systematically using specific statistical techniques to confirm or reject the hypothesis of a study. This chapter therefore reflects on the following aspects of the research;

- The rationale for using a non-experimental research design
- An explanation of the reasons for utilising a convenience sampling approach, with detail about the sample size and a reflection on representativeness with the national population
- The approach to collecting data and a reflection on Schwartz's Portraits Value Questionnaire, the validity, reliability and test re-test reliability is explained in motivation for the use of the instrument
- Detail is provided on, and why specific statistical techniques are used to determine the validity and reliability of the instrument and to assess the various hypothesis of this study.

Data was analysed using the latest versions of Lisrel, SPSS and Statistica, using different software facilitated the ability to use a broad scope of statistical techniques. In some cases specific software are more focused at specific types of analysis, e.g. Lisrel, which is specifically developed for the use in multivariate techniques.

4.1   Research design

The research will be performed using Schwartz's Portraits Value Questionnaire (PVQ 40), which is an internationally recognised questionnaire used in values research. At the time when the data gathering commenced (August 2012), the PVQ 40 was selected as the most appropriate instrument as it has been applied in research across a large number of countries and standardisation was done to ensure reliability and validity in developing and third world countries (Schwartz et al., 2001) . The refined values theory of Schwartz et al. (2012) was published in July 2012 and the authors indicated that the PVQ5X would require additional

validation "This study included samples with varying educational and occupational levels from countries in different world regions. Nonetheless, most respondents were relatively well educated and most countries were relatively high in socio-economic level. There is a need to evaluate the theory with less-educated samples, in countries with lower socio-economic profiles, and in world regions not yet studied (e.g., sub-Saharan Africa, the Far East, Latin America)" (Schwartz et al., 2012, pp. 684 - 685).

Levels of work are a fixed independent variable, because an employee will be occupying a position at a certain level or not. The research design do not allow any control over the level of work and therefore the research design will be non-experimental, using the PVQ to determine if differences exist in value propositions amongst employees working at different levels of work in a South African mine.

In contrast to experimental research, non-experimental research involves variables that are not manipulated by the researcher and studied, as they exist. One reason for using non-experimental research is that many variables of interest in social science cannot be manipulated, because they are attribute variables, such as gender, socio-economic status, learning style, or any other personal characteristic or trait (Belli, 2009). Kerlinger and Lee (1999) suggested that controlled inquiry is possible, but true experimentation is not. Despite its weaknesses, in many instances non-experimental research is the only option in psychology, sociology, and education, simply because the research problems do not lend themselves to experimental inquiry (Kerlinger & Lee, 1999).

The use of Survey research is often with a non-experimental research design and a method of data collection using questionnaires. Survey research's focus is to study large and small populations (or universes) by selecting and studying samples chosen from the populations to discover the relative incidence, distribution, and interrelations of sociological and psychological variables (Kerlinger & Lee, 1999). Survey research is concerned with the accurate assessment of the characteristics of whole populations of people. Survey sampling methods normally includes methods like personal interviews, mail questionnaires, panel interviews, telephone, and email or web based sampling (Kerlinger & Lee, 1999). Surveys are efficient in that many variables can be measured without substantially increasing the time or cost. Survey data can be collected from many people at relatively low cost and, depending on the survey design in a short period. Survey data collection methods lend itself to probability

sampling and therefore appealing when sample generalizability is a central research goal (Bickman & Rog, 2009). The risk with Survey research stems from two types of errors: poor measurement of cases that are surveyed (errors of observation) and omission of cases that should be surveyed (errors of non-observation). Potential problems that can lead to errors of observation stem from the way questions are written, the characteristics of the respondents who answer the questions, the way questions are presented in questionnaires, and the interviewers used to ask the questions. There are three sources of errors of non-observation; coverage of the population can be inadequate due to a poor sampling frame, the process of random sampling can result in sampling error and non-response can distort the sample when individuals refuse to respond or cannot be contacted (Bickman & Rog, 2009).

In non-experimental studies, it is not possible to be as confident that outcome differences are a result of the independent variable under investigation, as in experimental studies. The researcher needs to consider possible alternative explanations, to jointly analyse several variables, and to present conclusions without making definitive causal statements (Kerlinger & Lee, 1999).

4.2 Sampling design

The researcher approached four mining organisations to participate in the research, however, only two agreed to participate;
- Hernic Ferrochrome, a chrome mining and processing operation, and
- Petra Diamonds, a distributed diamond mining and processing operation.

The executive teams of both organisations agreed to participate in the research and a management brief to that effect was issued, and communicated to all levels of the organisation. In principle, all employees were requested to participate. The sample is therefore all employees, irrespective of their levels of work, employed on a full time basis at these organisations.

The initial sampling design followed a probability sampling approach with a 95% confidence level, but after collecting data at Hernic, it was evident that it will not be possible to follow this method. The researcher did not have access to employees and although employees were requested to participate it was not compulsory to do so. Reviewing the initial sampling design, despite the methodological shortcomings of non-probability sampling, this approach was deemed the most appropriate design for the study. Non-probability sampling methods are often

used in qualitative research, but are also used in quantitative studies when researchers are unable to use probability selection methods (Belli, 2009), which is true for this study. The specific method used was availability sampling also known as a haphazard, accidental, or convenience sampling. In a convenience sampling approach, as the name implies, the sample is identified primarily by convenience. Elements, or in this study, organisations are selected for convenience sampling, because they're available and agree to participate (Williams, S. & Anderson, 2012).

Convenience samples have the advantage of relatively easy sample selection, it produces data based on real-world situations and the possibility to collect large samples, creates breadth of coverage across a large base of subjects (employees in this study). Convenience sampling, similar to survey sampling can produce a large amount of data in a short time at a fairly low cost (Kelley, Clark, Brown & Sitzia, 2003).

The major disadvantage of convenience sampling relates to the fact that it is difficult, if not impossible to evaluate the "goodness" of the sample in terms of its representativeness to the population (Williams et al., 2012). In the case of this study, some control information about sample representativeness at the various levels of work was available. The researcher utilised data from PE Corporate Services South Africa, a well-known management consulting organisation specialising in national remuneration surveys in the South African industry. A sample obtained through the survey sampling method in March 2013 of the national market (n= 563838), created the possibility to relate the sample of this study to a large national population. In Table 4.1 the final research sample for the independent variable, level of work, is compared with the national sample obtained from PE Corporate services. Table 4.2, shows the percentage participation per organisation and Table 4.3 reflects on the total sample of data received.

Table 4.1 - Research Sample Comparison with National Market

Level of Work	Final Sample Size of Study (n)	% of Total Sample	PE Corporate Sample Size (n)	% of national Market
Management Sample	87	5.95	49672	8.81
Skilled Sample	516	35.29	209866	37.22
Semi-Skilled Sample	576	39.40	214865	38.11
Basic-Skilled Sample	283	19.36	89435	15.86
Total n	**1462**		**563838**	

Source National Market data: PE Corporate Service April 2013 General Staff Survey

Table 4.2 - Organisational Participation Figures

Operation	# Active Employees (n)	All Data Received (n)	% Participation
Hernic Ferrochrome	725	360	49.66
Petra Diamonds - Finch Mine	762	620	81.36
Petra Diamonds - Cullinan Mine	1081	796	73.64
Total	**2568**	**1776**	**69.16%**

Table 4.3 - Analysis of Overall Sample - Including Incomplete and Bad Questionnaires

Data Captured	1776
Incomplete or bad questionnaires	183
Total # questionnaires received	**1959**
Rejected data, if more than 25 items of the PVQ scored the same then the questionnaire is rejected according to PVQ processing instructions	314
Final sample size, used for processing	**1462**

It is therefore reasonable to make an assumption about the representativeness of the independent variable, level of work, that it is very similar to the national population. Although the method used to collect data was convenience sampling and not regarded as the best method in quantitative research, attempts were made by the researcher to enable a reasonable comparison of the research sample with a national sample's levels of work.

4.3 Data collection

The Human Resources Executives and their teams facilitated the process by providing instructions for the supervisors, brief them and assisting them where required to ensure that employees complete the questionnaires. Each employee received the PVQ with an instruction sheet; the supervisors explained the instructions and the employees completed the questionnaire in the presence of the supervisor. Supervisors were instructed to attend to questions in relation to the instructions, but under no circumstance provide opinion, comment or guidance about items in the questionnaire. The PVQ was administered as a written questionnaire, in English, to a total sample of n=1959. The survey took less than 30 minutes to complete. Biographical information was collected via single response items and included, the

grade of the position occupied, functional area, gender, age, qualification and race. Employees did not have to identify themselves on the questionnaires, the information received were therefore anonymous for the researcher.

Schwartz utilised the Values Survey (SVS) for analyses in more than 200 samples across 60 nations, this supported the distinctiveness of the 10 values and the circular structure of relations among the values. The Portrait Values Questionnaire (PVQ) was developed after extensive application, when it was identified that about 5% of the samples deviated considerably from the theorised circular pattern. Deviations were most common and extreme in samples from sub-Saharan Africa, India, Malaysia, and rural areas of the developing nations. The PVQ was developed as an alternative to the Schwartz Values Survey (SVS) in order to measure the ten basic values in samples of children (>11 years), of the elderly, and of persons not educated in Western schools that emphasize abstract, context free thinking. The SVS proofed not to be suitable to such samples (Schwartz, 2006, Schwartz et al., 2001).

The PVQ measures the respondents' values indirectly, through judgments of one's similarity with another person. It includes 40 short verbal portraits of different people, each 1 describing a person's goals, aspirations, or wishes that point implicitly to the importance of a value (Vecchione, Casconi & Barbaranelli, 2009). The number of portraits for each of the ten values range from three (stimulation, hedonism, and power) to six (universalism), reflecting the conceptual breadth of the values (Schwartz, 2005a, 2005b, 2006). Respondents indicate for each portrait how similar the person is to himself or herself on a 6 point Likert scale ranging from, (1) very much like me to (6) not like me at all (Vecchione et al., 2009). Comparing others to the self, directs attention only to aspects of the other that are portrayed. In other words, similarity judgment is also likely to focus on value-relevant aspects. The verbal portraits describe each person in terms of what is important to him or her. It therefore captures the person's values without explicitly identifying values as the topic of investigation (Schwartz, 2005a, 2005b, 2006).

All the value items in the PVQ have demonstrated near-equivalence of meaning across cultures in analyses using multi-dimensional scaling (Schwartz, 2005a). Across 14 samples from 7 countries, alpha reliabilities of the ten values averaged .68, ranging from .47 for tradition to .80 for achievement (Schwartz, 2006).

Schwartz et al. (2001) indicated that high internal reliabilities for the values are not be expected. The indexes include few items and many values have conceptually broad definitions, encompassing multiple components. An example will be power values that include both wealth and authority, and universalism values include understanding and tolerance, concern for justice, and nature. The items in each index were selected to cover all components of the broad definition, rather than measuring a narrowly defined construct (Schwartz et al., 2001).

The PVQ indexes were adequate to produce good convergent and discriminant validity in the Multi-trait Multi Method analysis and, as shown below, they exhibit good construct validity (Schwartz et al., 2001). The test-retest reliability of the PVQ was tested with a sample of 67 Israeli university students who completed the instrument twice with an interval of 2 weeks. "The indexes for the importance of the 10 values were based only on the equivalent items. The test-retest reliabilities were moderate to high: power, .84; security, .88; conformity, .86; tradition, .81; benevolence, .82; universalism, .83; self-direction, .66; stimulation, .74; hedonism, .84; achievement, .83. During the 2-week period, the importance attributed by this sample to eight of the 10 values did not change. Conformity values became more important (t (65 df) = 2.34, $p <.05$) and security values less important (t (65 df) = 2.89, $p < .01$)). Although these differences were significant, their effect sizes were both less than .25 standard deviations" (Schwartz et al., 2001, p. 532).

4.4 Data analysis – Descriptive statistics

The first stage of the statistical analysis involved performing descriptive statistics upon the demographic variables included in the survey. Descriptive statistics do not make any inferences, but simply provide a description of the sample data, in the case of this study the means, standard deviations, and skewness were calculated for the 40 items of the PVQ-40 on the whole sample. Collected Biographical information is not used extensively in this study, but provides the possibility for future use. Table 3.3 provides the detail on the samples sizes for each level of work and therefore not discussed again.

The next section of this chapter explains the methods used to analyse the data. In order to assess the various hypothesis of this study, data was analysed applying inferential and multivariate statistical techniques.

4.5   Data analysis - Inferential statistics

The study utilises three different statistical methods, which are focused at measuring reliabilities of the instrument, using Cronbach's alpha and using Pearson's r to measure variable relationships. Because levels of work represent four tiers with different sample sizes, the Kruskall-Wallis non-parametric test is utilised. Below is a definition and purpose of the methods used in this study. In addition to this, data is analysed using a Confirmatory Factor Analysis and lastly, the circular continuum of the levels of work is explored and reflected on using Multi-Dimensional Scaling.

4.5.1 Cronbach's Alpha

Alpha is a property of the scores on a test from a specific sample of participants, in this case the mining industry and levels of work. It is therefore important that researchers don't rely on published alpha estimates only, but should measure alpha each time the test is administered (Tavakol & Dennick, 2011).

Validity and reliability are two fundamental elements in the evaluation of a measurement instrument. Instruments can be conventional knowledge, skill or attitude tests, clinical simulations or survey questionnaires. Instruments can measure concepts, psychomotor skills or affective values. Validity is concerned with the extent to which an instrument measures what it is intended to measure. Reliability is concerned with the ability of an instrument to measure consistently. The reliability of any instrument is closely associated with its validity. An instrument cannot be valid unless it is reliable (Tavakol & Dennick, 2011). However, the reliability of an instrument does not depend on its validity. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and therefore connected to the interrelatedness of the items within the test. Internal consistency should be determined before a test can be employed for research or examination purposes to ensure validity. In addition, reliability estimates show the amount of measurement error in a test. Put simply, this interpretation of reliability is the correlation of test with itself. Squaring this correlation and subtracting from 1.00 produces the index of measurement error. For example, if a test has a reliability of 0.80, there is 0.36 error variance (random error) in the scores (0.80x0.80 = 0.64; 1.00 - 0.64 = 0.36) (Tavakol & Dennick, 2011). If the items in a test are correlated to each other, the value of alpha is increased.

4.5.2 Pearson product moment correlation

Correlation between variables is a measure of how well the variables are related. The most common measure of correlation in statistics is the Pearson Correlation. The Pearson product-moment correlation coefficient measures the strength of a linear association between two variables and is denoted by *r*. A Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, *r*, indicates how far away all these data points are to this line of best fit (how well the data points fit this new model/line of best fit). Pearson's r does not differentiate between the dependent and independent variables, and researchers should be mindful of the variables used.

The Pearson correlation coefficient, *r*, values range between +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association; that is, as the value of one variable increases, so does the value of the other variable. A value less than 0 indicates a negative association; that is, as the value of one variable increases, the value of the other variable decreases. To determine the strength of the relationship Guilford's informal interpretations of *r* can be used and displayed in Table 4.4.

Table 4.4 - Guildford's Informal Interpretation of Magnitude

Value of *r* (+/-)	Informal Interpretation
< 0.2	Slight; almost no relationship
0.2 - 0.4	Low correlation; definite but small relationship
0.4 - 0.7	Moderate correlation; substantial relationship
0.7 - 0.9	High correlation; strong relationship
0.9 - 1.0	Very high correlation; very dependable relationship

4.5.3 Kruskall-Wallis – Non-parametric test.

The independent variable, levels of work, has different sample sizes and the sample's data was skewed, as obtained through the test for normality conducted in Lisrel. A parametric approach to analyse the data was therefore considered inappropriate. In parametric tests of quantitative data, it is assumed that the populations have normal distributions and the same standard deviations. The non-parametric Kruskall-Wallis test is based on the analysis of independent random samples from each of a number of populations. This is therefore a non-parametric approach to perform a one-way analysis of variance, to determine if three or more samples

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originate from the same distribution. This procedure can be used with either ordinal data or quantitative data and does not require the assumption that the populations have normal distributions (Williams et al., 2012). The general form of the null and alternative hypotheses is as follows:

H0: All populations are identical

H1: Not all populations are identical

If H0 is rejected, the researcher can conclude that there is a difference among the populations with one or more populations tending to provide smaller or larger values compared to the other populations (Williams et al., 2012).

4.5.4 Confirmatory Factor Analysis

In structural equation modelling (SEM), a model is said to fit the observed data to the extent that the model's implied covariance matrix is equivalent to the empirical covariance matrix. Once a model has been specified and the empirical covariance matrix is given, a method has to be selected for parameter estimation. Different estimation methods have different distributional assumptions and have different discrepancy functions to be minimised. When the estimation procedure has provided a reasonable solution, the fit of the model should be evaluated. Model fit determines the degree to which the structural equation model fits the sample data (Schermelleh-Engel, Moosbrugger & Müller, 2003). Model fit is not as straightforward as it is in statistical approaches based on variables measured without error, as there is no single statistical significance test that identifies a correct model given the sample data. It is therefore necessary to consider multiple criteria and to evaluate model fit based on various measures simultaneously. It is therefore important to consider a large number of goodness-of-fit indices, to assess whether the model is consistent with the empirical data (Sharma, Mukherjee, Kumar & Dillon, 2005).

Confirmatory Factor Analysis (CFA) is used to provide a confirmatory test of a measurement theory. The measurement theory specifies a series of relationships that suggest how measured variables represent a latent construct that is not measured directly (Hair et al., 2010). Measurement model validity depends on (1) establishing acceptable levels of goodness-of-fit for the measurement model and (2) finding specific evidence of construct validity (Hair et al., 2010).

Goodness-of-fit is indicative of how well a specific model reproduces the observed covariance matrix among the indicator items, for example the similarity of the observed and estimated

(Hair et al., 2010). The most widely respected and reported fit indices are discussed below and their interpretive value in assessing model fit is also examined. According to Hooper, Coughlan and Mullen (2008) the most important indices are the chi-squared test, root mean squire error of approximation (RMSEA), goodness of fit index (GFI), adjusted goodness of fit index (AGFI) and the root mean square residual (RMR). The research data's sample size at the various levels of work differ significantly, therefore the chi-squared test will be enhanced with the Satorra-Bentler scaled chi- square test.

4.5.4.1 *Model chi-square (x^2) and Satorra-Bentler scaled Chi-Square*

The Chi-Square value is the traditional measure for evaluating overall model fit and, assesses the magnitude of discrepancy between the sample and fitted covariance matrices. A good model fit would provide an insignificant result at a 0.05 threshold and is generally known as the lack of fit measure. The chi-squared test retains its popularity as a fit statistic, but there are some limitations in its use (Hooper et al., 2008). With an increasing sample size and a constant number of degrees of freedom, the x^2 value increases. This leads to the problem that acceptable models might be rejected based on a significant x^2 statistic even though the discrepancy between the sample and the model-implied covariance matrix is actually irrelevant. However, when the sample size decreases, the x^2 value decreases as well and the model test may indicate non-significant probability levels even though the discrepancy between the sample and the model-implied covariance matrix is considerable. Therefore, not too much emphasis should be placed on the significance of the x^2 statistic (Schermelleh-Engel et al., 2003).

Because the sample's data was skewed, as determined through the test for normality conducted in Lisrel, robust methods of estimation were used. When the latter is implemented, a corrected chi-square is required. Therefore, the Satorra-Bentler chi-square will be applied as part of the goodness of fit indices in this study.

4.5.4.2 *Root Mean Square Error of Approximation*

RMSEA provides information on how well a model, with unknown, but optimally chosen parameter estimates would fit a specific model's covariance matrix. This is considered to be one of the most informative fit indices, mainly because of its sensitivity to the number of estimated parameters in a model (Hooper et al., 2008). RMSEA is regarded as relatively independent of sample size, and additionally favours parsimonious models A RMSEA value < .05 can be considered as a good fit, values between .05 and .08 as an adequate fit, and values between .08 and .10 as a mediocre fit, whereas values > .10 are not acceptable. Although there

is general agreement that the value of RMSEA for a good model should be less than .05, but .06 is often considered as a cut-off criterion (Schermelleh-Engel et al., 2003).

A major benefit of the RMSEA is that it provides the researcher with the means to calculate a confidence interval around the value. This is possible due to the known distribution values of the statistic and subsequently allows for the null hypothesis (poor fit) to be tested more precisely (Hooper et al., 2008). According to Schermelleh-Engel et al. (2003) a 90% confidence interval (CI) around the point estimate enables an assessment of the precision of the RMSEA estimate. Based on the CI, it is possible to assume a certain level of confidence that the given interval contains the true value of the fit index for a specific theoretical model. The lower boundary (left side) of the confidence interval should contain zero for exact fit and be < .05 for close fit (Schermelleh-Engel et al., 2003).

4.5.4.3 *Comparative fit index*

The comparative fit index (CFI) is a revised form of the normed fit index, which takes into account sample size that performs well even when sample size is small. This statistic assumes that all latent variables are uncorrelated (null/independence model) and compares the sample covariance matrix with this null model. CFI values range between 0.0 and 1.0 with values closer to 1.0 indicating good fit (Hooper et al., 2008). Hu and Bentler (1999) indicated that a > 0.90 CFI cut-off criterion was considered acceptable, but in recent studies a value greater than 0.90 is required to ensure that models that are not well defined are accepted. As a result, a value of CFI > 0.95 is presently recognised as indicative of good fit (Hu & Bentler, 1999). Today this index is included in all SEM programs and is one of the most popularly reported fit indices due to being one of the measures least effected by sample size (Hooper et al., 2008)

4.5.4.4 *Root Mean Square Residual and Standardised Root Mean Square Residual*

The root mean square residual index (RMR) is an overall badness of fit measure that is based on the fitted residuals. The range of the RMR is calculated based upon the scales of each indicator, therefore, if a questionnaire contains items with varying levels (some items may range from 1 - 5 while others range from 1 - 7) the RMR becomes difficult to interpret. The standardised root mean square residual (SRMR) resolves this problem and is therefore much more meaningful to interpret (Schermelleh-Engel et al., 2003). Values of the SRMR range from zero to 1.0 and models with good fit will obtain values less than .05, but values as high as 0.08 are deemed acceptable (Hu & Bentler, 1999). An SRMR of 0 indicates perfect fit but it must

be noted that SRMR will be lower when there is a high number of parameters in the model and with larger sample sizes (Schermelleh-Engel et al., 2003).

4.5.4.5 *Goodness-of Fit and Adjusted Goodness-of-Fit Statistic*

The goodness-of-fit statistic (GFI) is an alternative to the Chi-Square test and calculates the proportion of variance that is accounted for by the estimated population covariance (Hair et al., 2010, Hooper et al., 2008). Studying the variance and covariance of a model, it indicates how it replicates the observed covariance matrix (Hooper et al., 2008). This statistic ranges from 0 to 1 with larger samples increasing its value. In cases with a large number of degrees of freedom in comparison to sample size, the GFI has a downward bias (Sharma et al, 2005). The GFI increases as the number of parameters increases and has an upward bias with large samples. A GFI cut-off value of 0.90 is the most popular and widely employed by researchers to evaluate model fit. The model is considered to have an unacceptable fit if the value of the fit index is less than 0.90 (Sharma et al., 2005). Studies have shown that when factor loadings are low and sample size small, a higher cut-off of 0.95 is more appropriate. Given the sensitivity of this index, it has become less popular in recent years (Hooper et al., 2008).

Related to the GFI is the adjusted goodness of fit index (AGFI), which adjusts the GFI, based upon degrees of freedom, with more saturated models reducing. In addition to this, AGFI tends to increase with sample size. As with the GFI, values for the AGFI also range between 0 and 1 and it is generally accepted that values of 0.90 or greater indicate well-fitting models. Given the often detrimental effect of sample size on these two fit indices they are not relied upon as a standalone index, however given their historical importance they are often reported in covariance structure analyses (Schermelleh-Engel et al., 2003).

4.5.5 Multi-Dimensional Scaling

As discussed in Chapter 2, Schwartz's value theory of ten lower and four higher order values form a circular continuum or circumflex and the most common multi-variate technique used to study this is multi-dimensional scaling (MDS). This technique cannot be performed in isolation and it is therefore important to understand why other techniques should be used in conjunction with MDS to ensure validity of the interpretation and conclusions using this analysis.

While factor analysis has the characteristic of hypothesis creation (exploratory), it also has the characteristic of theory checking (confirmatory) and is suitable in both the early stages and the late stages of an investigation. The critical assumptions underlying factor analysis are more

conceptual than statistical. One of the principal concerns of Researchers are to meet the statistical requirements of the multivariate techniques employed, but in factor analysis the focus is as much on the character and composition of the variables included in an analysis, as on their statistical qualities (Hair et al., 2010).

MDS is concerned with the global or holistic measures of similarity or preference and then empirically infers the dimensions (both character and number) that reflect the best explanation of individual or collective responses. In MDS, the variate used in many other techniques becomes the perceptual dimensions inferred from the analysis. As such, the researcher does not have to be concerned with issues related to specification error, multi-colinearity, or statistical characteristics of the variables. The challenge to the researcher, however, is to interpret the independent variable, without a valid interpretation the primary objectives of MDS are compromised (Hair et al., 2010).

The application of MDS is appropriate when the objective is more oriented toward under-standing overall preferences or perceptions rather than detailed perspectives involving individual attributes (Hair et al., 2010).

4.6   Summary

This chapter explained the rationale for the research methodology employed to develop an appropriate research model to analyse the collected data, and establish the relationship with the information about values and levels of work in the literature review. This information enables the Researcher to reflect on the results in order to reject or accept the hypothesis formulated in Chapter 1.

CHAPTER 5 - DATA ANALYSIS AND DISCUSSION

5   Introduction

In basic research, the aim is to explore the relationships within and between variables. The purpose of this type of research is to understand and explain the research questions of a specific study. Basic research often creates new concepts that would have remained unexplored, but it also provides a deeper understanding of existing concepts, and new and improved rationale for advancements in current practices. Therefore, this research can be viewed as basic research, because it provides insights into value priorities at different levels of work in the South African mining industry. In addition, this research can also be considered as applied research as it can provide immediate assistance for mining organisations in changing the focus of organisational values to establish more integrated business cultures.

Applying a confirmatory deduction approach, the existing values theory of Schwartz was used to study and provide tentative answers of the value priorities found at the various levels of work in the South African mining industry. The results of the study will attempt to identify the core differences in values between the levels of work and explore the reasons for the differences. Ultimately, it might be possible to identify those values that organisations can successfully integrate as part of their core values and overall business culture, to create synergy in work environments with a diverse workforce and skills base. The main contribution of this study is that it provides new insights into the value priorities at various levels of work.

5.1   Basic features of the research data

According to Schwartz's processing instructions, if more than 25 items of the PVQ are scored the same, then the questionnaire should be rejected. The researcher followed this instruction and in addition automatically excluded questionnaires with missing scores on any of the PVQ items.   Means, standard deviations and skewness were calculated for the 40 items of the PVQ, shown in Table 5.1. The means of the six point Likert items ranged from 1.92 ($SD = 0.72$) to 3.6 ($SD = 1.13$). The mean value of skewness for the ten lower order values is .76 and several of the values have scores higher than one. Bulmer (1979) suggested the following informal principles for interpretation of skewness scores:

- If skewness is less than -1 or greater than $+1$, the distribution is highly skewed.
- If skewness is between -1 and $-.5$ or between $+.5$ and $+1$, the distribution is moderately skewed.

- If skewness is between −.5 and +.5 the distribution is approximately symmetric.

Table 5.1 - Descriptive Statistics - Total Sample: All Levels of Work

	Valid N	Mean	Std.Dev.	Skewness	Std.Err.
CO	1462	2.04	.80	1.05	.06
TR	1462	2.64	.84	.47	.06
SE	1462	1.92	.72	1.20	.06
PO	1462	3.60	1.13	-.03	.06
AC	1462	2.53	.89	.62	.06
HE	1462	2.64	1.06	.61	.06
SD	1462	2.16	.78	.94	.06
ST	1462	2.87	.98	.31	.06
BE	1462	2.18	.79	1.09	.06
UN	1462	1.98	.70	1.33	.06

Note: CO = conformity; TR = tradition; SE = security; PO = power; AC = achievement; He = hedonism; SD = self-direction; ST = stimulation; BE = benevolence; UN = universalism

Based on the skewness scores in Table 5.1, graphically displayed in Figures 5.2 to 5.11, it is possible to conclude that except for the lower order values tradition, power and stimulation, the distributions of the other values are moderately to highly skewed.

In Figure 5.1, the mean value of the ten values per level of work is displayed in a spider gram. This information is provided to show the possible value relationships between the ten lower order values at the various levels of work. Relationships indicated by mean values should always be investigated in more detail.
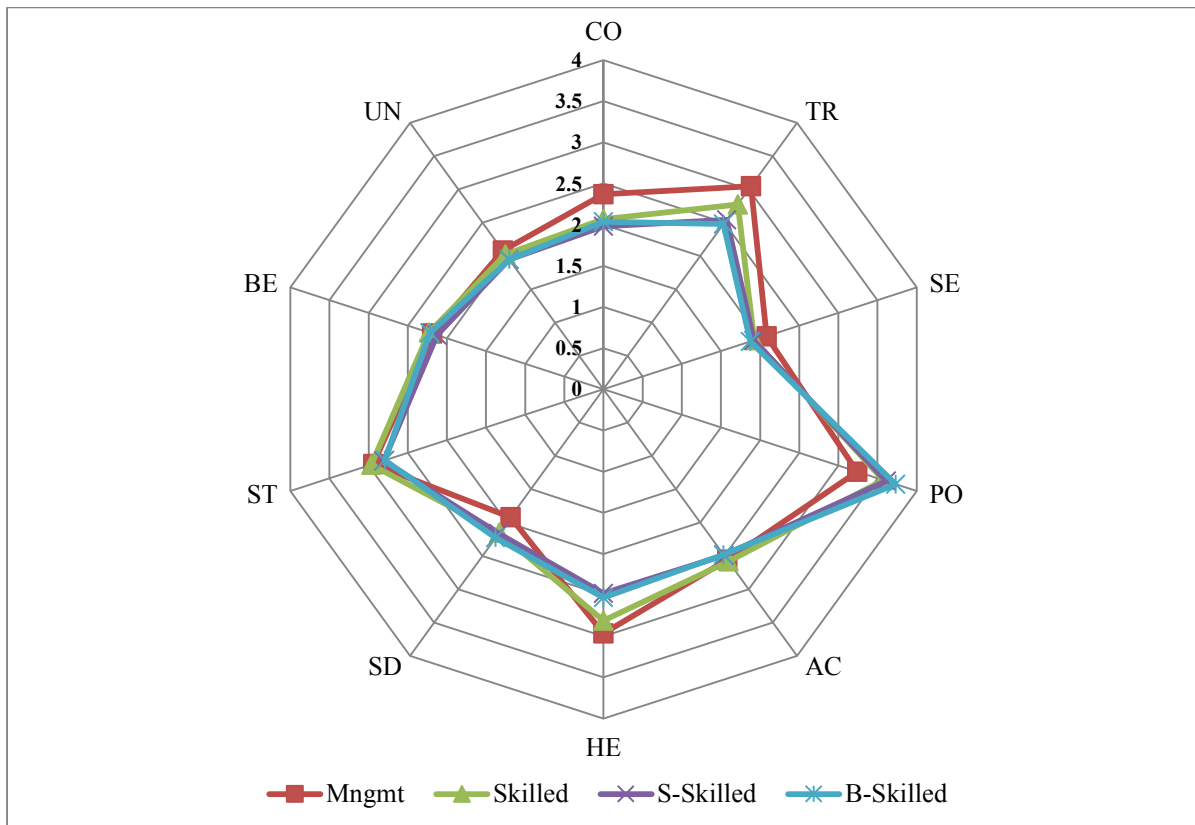
Lower Order Value	All	Mngmt.	Skilled	S-Skilled	B-Skilled
Valid N	*1462*	*87*	*516*	*576*	*283*
CO (Conformity)	2.04	2.37	2.06	1.98	2.04
TR (Tradition	2.64	3.05	2.78	2.54	2.48
SE (Security)	1.92	2.09	1.93	1.92	1.88
PO (Power)	3.60	3.24	3.57	3.61	3.73
AC (Achievement)	2.53	2.56	2.59	2.49	2.48
HE (Hedonism)	2.64	2.97	2.81	2.48	2.53
SD (Self- Direction)	2.16	1.92	2.15	2.17	2.23
ST (Stimulation)	2.87	2.94	2.96	2.81	2.80
BE (Benevolence)	2.18	2.19	2.23	2.13	2.22
UN (Universalism)	1.98	2.08	2.02	1.95	1.95

Figure 5.1. Mean value of the ten values per level of work

Figure 5.1 shows a close relationship between, the skilled, semi-skilled and basic skilled levels of work, for most values, but the management level differs from all three the lower levels of work. The mean scores of the semi-skilled and basic skilled levels of work are as expected, almost identical. These differences will be analysed and discussed in detail in the next sections of this chapter. Note the differences in sample sizes for the different levels of work, also indicated in Chapter 4, Table 4.1.

The skewness scores for each level of work are shown in Table 5.2 below. Bulmer's informal interpretation of the skewness scores was discussed in the last paragraph of Section 5.1 on page 88. Figures 5.2 to 5.11 show the distribution histograms for each of the ten values for the total sample.

Table 5.2 - Skewness Scores for all the Levels of Work

Lower Order Value	All	Management	Skilled	S-Skilled	B-Skilled
Valid N	*1462*	*87*	*516*	*576*	*283*
CO (Conformity)	1.05	0.77	.88	1.23	1.10
TR (Tradition	.47	.25	.38	.62	.56
SE (Security)	1.20	.37	1.01	1.42	1.33
PO (Power)	-.03	-.05	-.06	-.03	-.12
AC (Achievement)	.62	.61	.51	.73	.55
HE (Hedonism)	.61	.29	.50	.75	.69
SD (Self- Direction)	.94	.56	.81	1.06	.84
ST (Stimulation)	.31	.19	.24	.39	.34
BE (Benevolence)	1.09	.04	.87	1.44	.86
UN (Universalism)	1.33	.42	1.34	1.44	1.34
Std error Skewness	**.06**	**.26**	**.11**	**.10**	**.14**

The analyses of skewness per level of work in Table 5.2, confirm the skewness of the total sample as indicated in Figure 5.1. Except for the lower order values tradition, power and stimulation, the distributions for the other values are moderately to highly skew. At the management level of work, security, hedonism and benevolence values are close to normal or symmetrical as well.
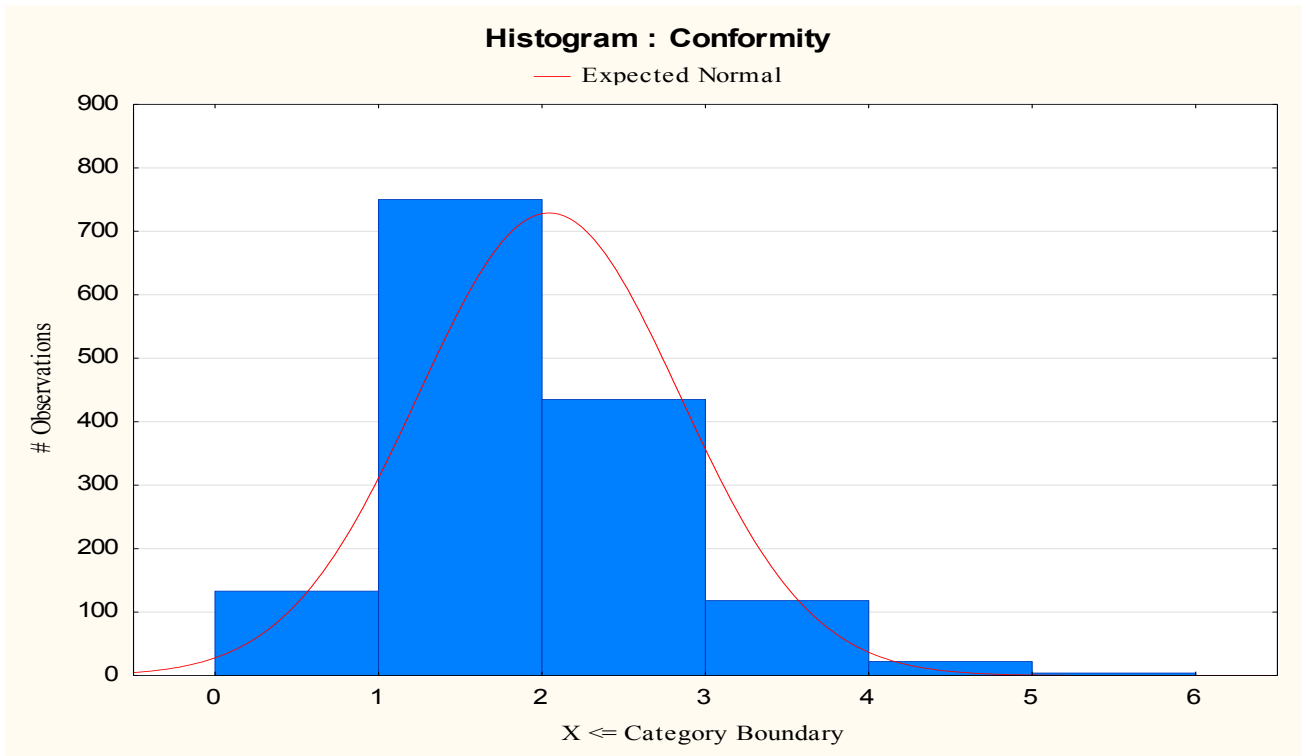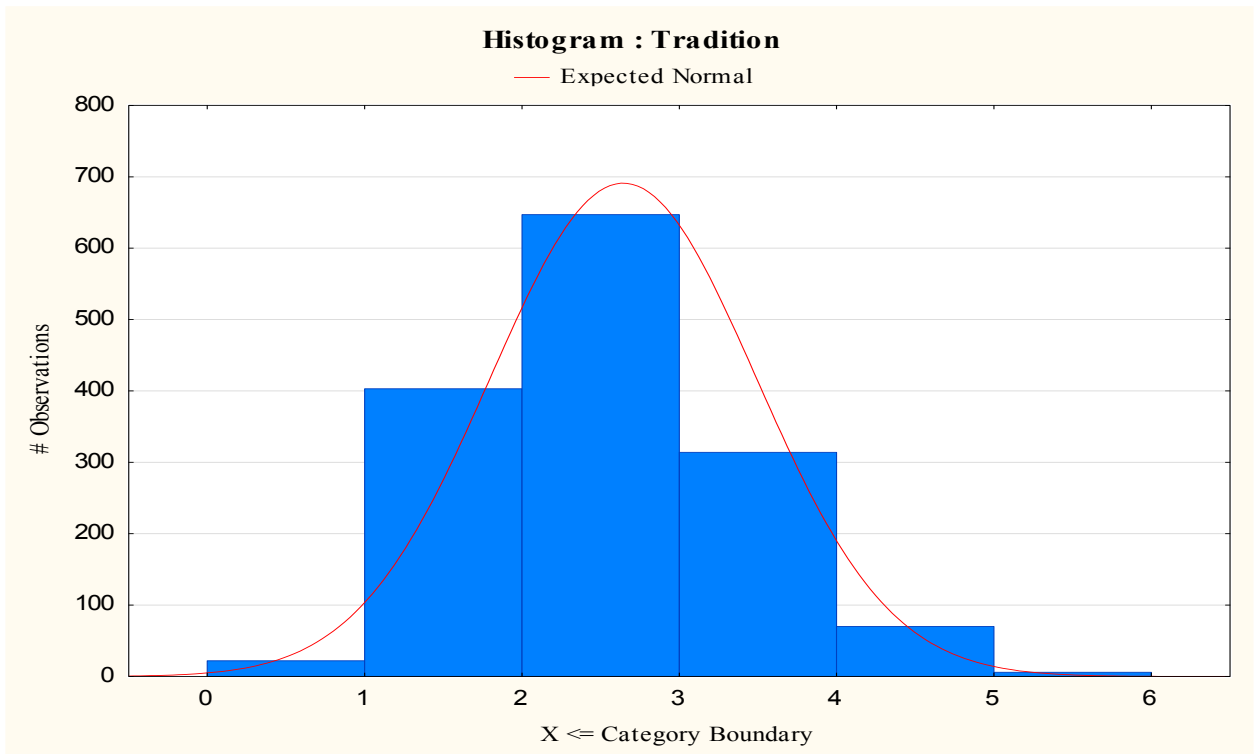
Figure 5.2. Conformity data distribution

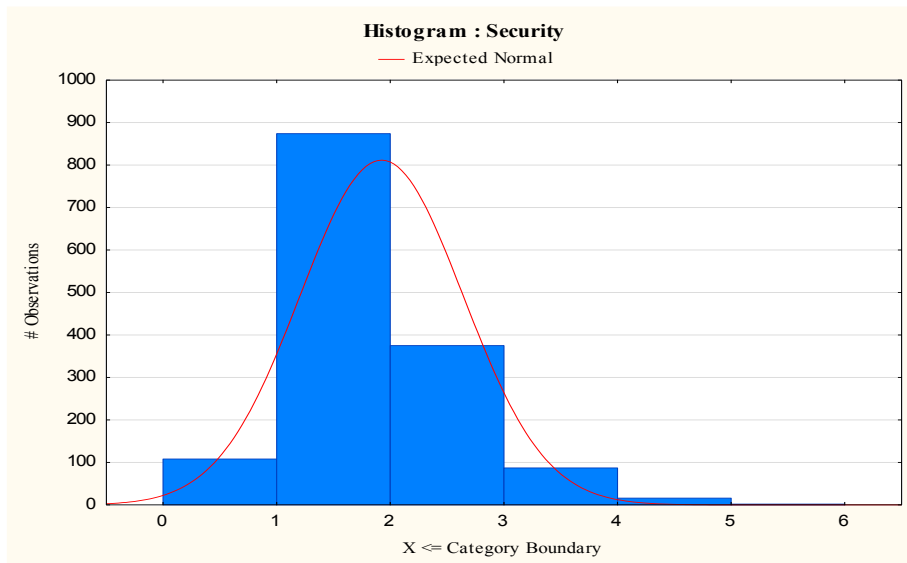*Figure 5.3.* Tradition data distribution

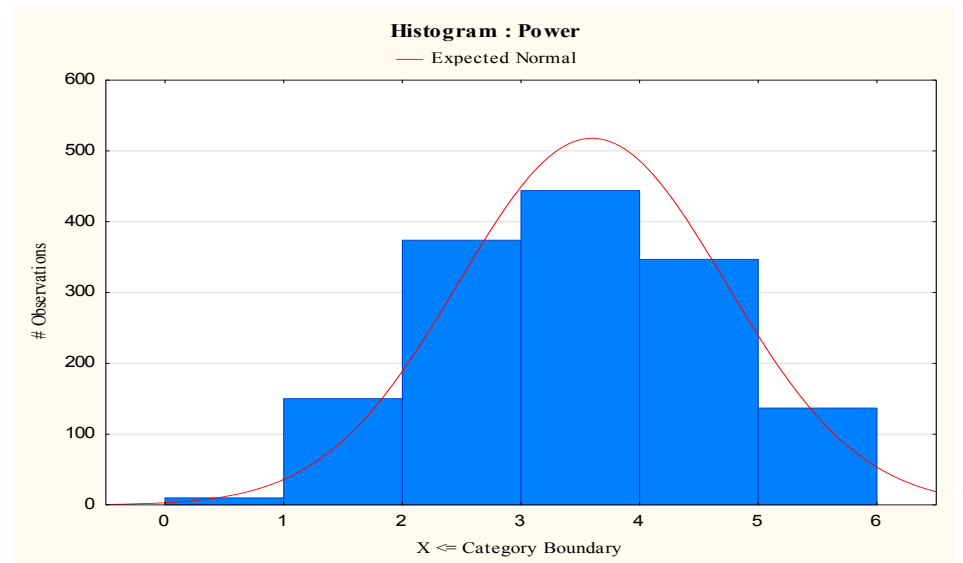*Figure 5.4.* Conformity data distribution
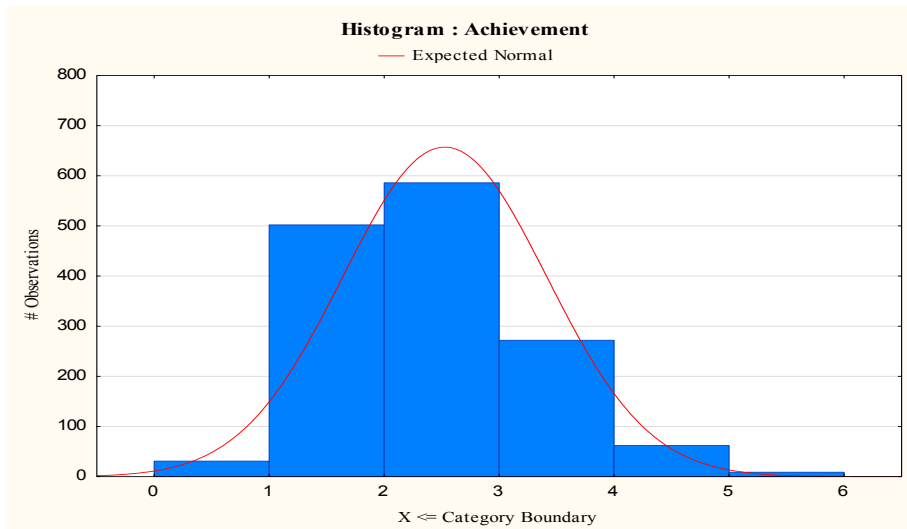

Figure 5.5. Power data distribution

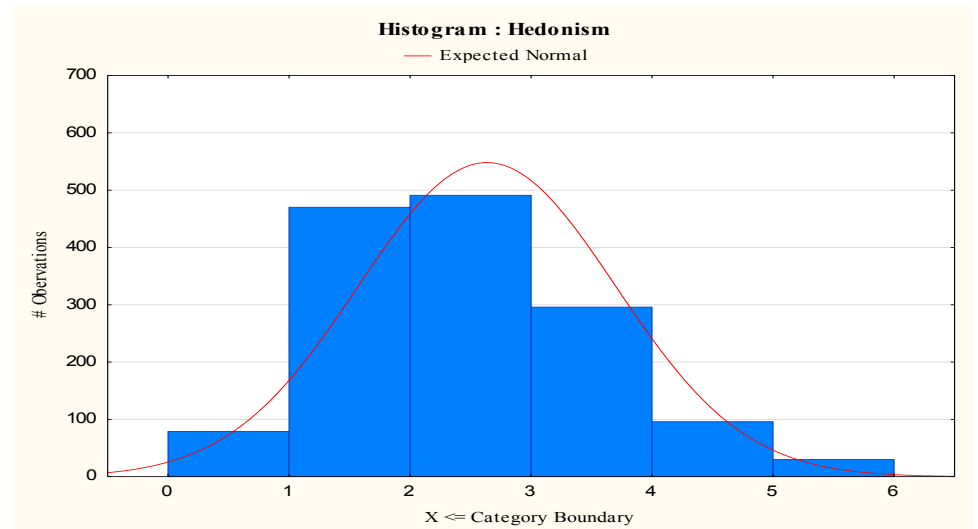*Figure 5.6.* Achievement data distribution

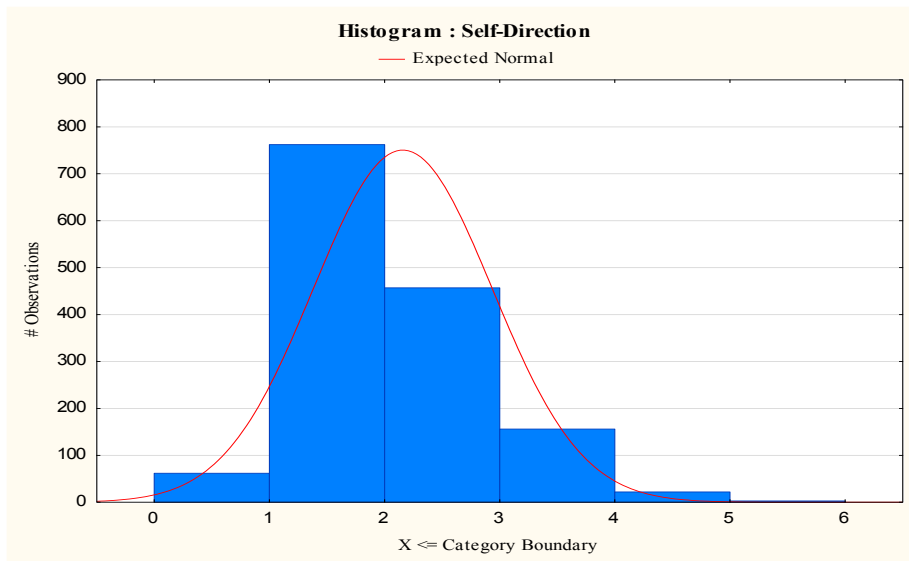*Figure 5.7.* Hedonism data distribution

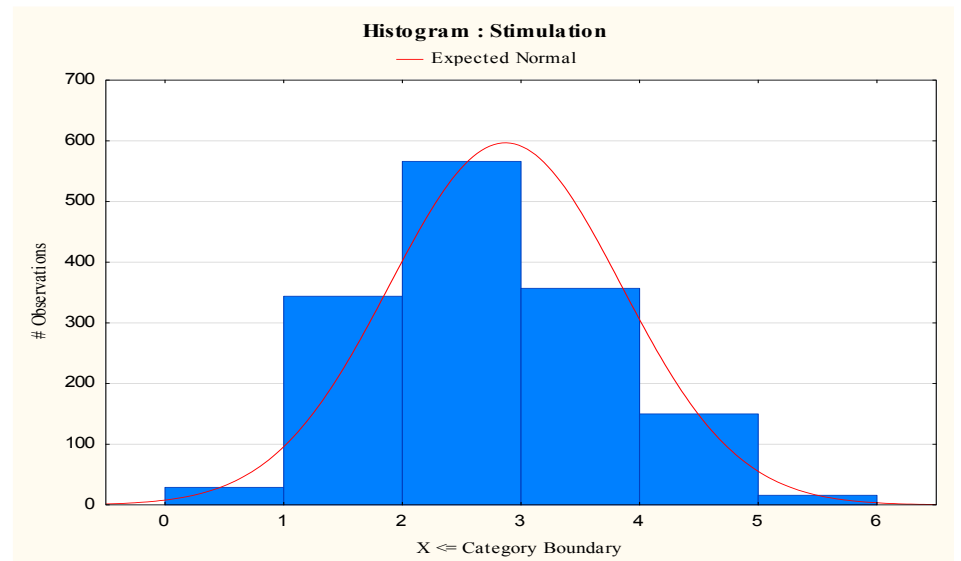*Figure 5.8.* Self-Direction data distribution

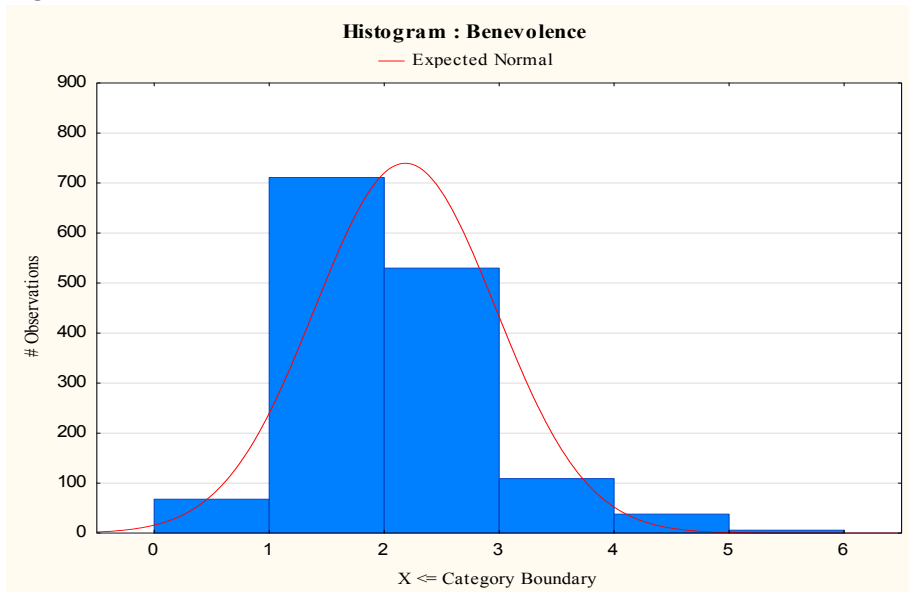*Figure 5.9.* Stimulation data distribution

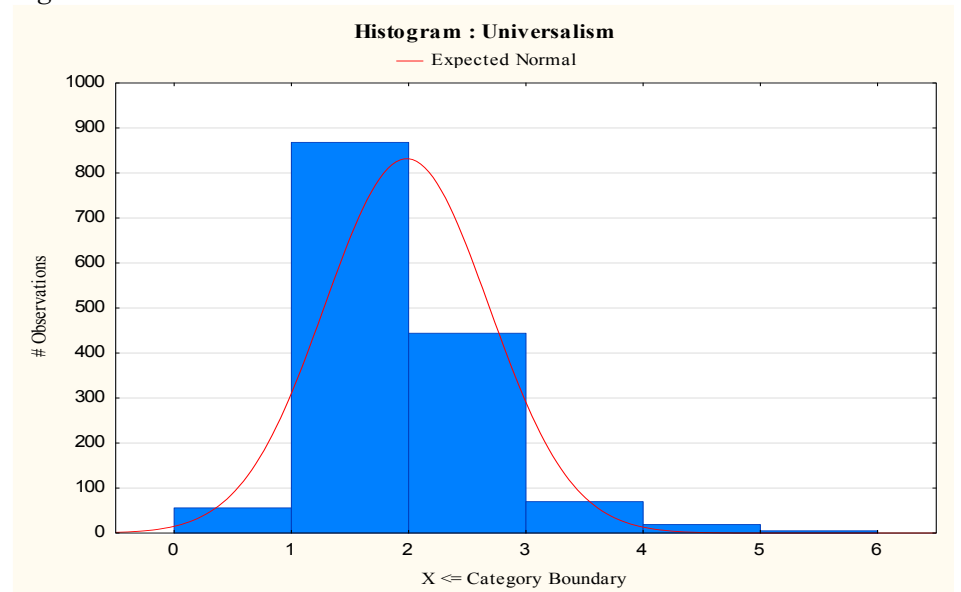*Figure 5.10.* Benevolence data distribution

Figure 5.11. Universalism data distribution

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The skewness of the sample and the variance in the population size of the independent variable, levels of work, will require rigorous analysis in order to assist with the acceptance or rejection of the various hypotheses.

The study utilises three different statistical methods, which focus on measuring reliabilities of the PVQ, Cronbach's alpha and Pearson's *r* to measure variable relationships. The data is analysed using Confirmatory Factor Analysis to determine whether the variables measured by the PVQ, are valid and accurate indicators of the values construct as postulated by Schwartz. Because levels of work represent four tiers with different sample sizes, the Kruskall-Wallis non-parametric test is utilised to identify and explain the differences in values at the various levels of work. In addition to this, multidimensional scaling is used to explore the circular continuum at the various levels of work and to enhance the interpretation of the non-parametric results.

5.2   Assessment of the measurement model fit

Model fit compares the theory to reality, by assessing the similarity of the estimated covariance (the theory) to the reality according to the observed covariance matrix (Hair et al., 2010). Measurement model validity depends on establishing an acceptable level of goodness-of-fit for the measurement model and finding specific evidence of construct validity (Hair et al., 2010). When studying the overall fit of a measurement model the most important indices according to Hooper et al. (2008) are the chi-squared test, root means squire error of approximation (RMSEA), goodness of fit index (GFI), adjusted goodness of fit index (AGFI) and the root mean square residual (RMR). Each of these indices was discussed in detail in Chapter 4 and the focus of this section is on the results of the confirmatory factor analysis. The combination of these indices is indicative of fit and no one index provides proof of fit.

The sample's data was skewed, as determined through the test for normality conducted in Lisrel. It is therefore appropriate that a corrected chi-square is used and the reason for using the Satorra-Bentler scaled chi-square in this study. The Satorra-Bentler chi-square score, corrected for non-normality is 592.54 on 695 degrees of freedom and the probability for the Chi-Square statistic is 0. According to Hooper et al. (2008) good model fit would provide an insignificant result at a .05 threshold, in other words the measurement model lacks fit according to this test.

However most of the other indices shows good model fit with RMSEA = .043 and the 90% confidence interval for RMSEA being (.042; .045), this is a better fit than obtained by Vecchione et al. (2009) when they assessed the circular structure of the PVQ using CFA, with a RMSEA = .06. In addition, the following tests provided evidence of good model fit as well;

- CFI = .95, values of > .90 are considered to be indicative of good fit, although more recently values > .95 is considered to be the cut off for good fit (Hooper et al., 2008).
- SRMR = .047, models with good fit will obtain values < .5. Similar to the RMSEA score it is in line with the findings of Vecchione et al. (2009)
- GFI = .9, and
- AGFI = .88, the current sample of n=1962 is considered as large, therefore a cut of value for good fit is considered to be values > .9. It is important to note that sample size also have an significant impact on these two indices and should also not being relied on as a standalone indices (Schermelleh-Engel et al., 2003).

Based on the values obtained from the most prominent fit indices one may conclude that there is evidence of good model fit between the values measured by the PVQ and the observed values of the sample in this study. This is therefore conclusive evidence that the variables measured by the PVQ, are valid and accurate indicators of the values construct as postulated by Schwartz.

5.3   Internal validity and reliability

Validity is concerned with the extent to which an instrument measures what it is intended to measure. Reliability is indicative of the ability of an instrument to measure consistently. The reliability of an instrument is however closely associated with its validity. An instrument cannot be valid unless it is reliable (Tavakol & Dennick, 2011).

Schwartz (2006) indicated that in studies with the PVQ across 14 samples from 7 countries, the alpha reliabilities of the ten values averaged .68, ranging from .47 for tradition to .80 for achievement. Table 5.3 provides data for the alpha values of the total sample and each level of work. The purpose of Table 5.3 is twofold, to show the alpha values for the total sample and to reflect on the alpha values for each level of work as well. The alpha scores for the different levels of work are important, because of the diversity of the sample and reflecting on the initial reason for developing the PVQ. In extensive studies using the Schwartz Values Survey, about 5% of the samples deviated

considerably from the theorised circular pattern. These deviations were most common and extreme in samples from Sub-Saharan Africa, India, Malaysia, and rural areas of the developing nations. The PVQ was therefore developed as an alternative to the Schwartz Values Survey (SVS) in order to measure the ten basic values in these areas and of persons not educated in Western schools where abstract, context free thinking is emphasized (Schwartz, 2006, Schwartz et al., 2001).

In principle, the total sample's ten lower order values alpha scores (Table 5.3) are slightly lower, but still in line with the Schwartz (2006) findings, with an average of .58 and ranging from .43 to .7. The scores of the four higher order values (Table 5.4) shows a high level of alpha reliability with an average of .74 and ranging from .63 to .8. At the management level of work, alpha scores ranged from .5036 (self-direction) to .8038 (hedonism). The skilled level of work's scores ranged from .3837 (tradition) to .747 (universalism). Alpha scores for the semi-skilled level of work ranged from .3802 (stimulation) to .6770 (universalism). At the basic skilled level of work, the highest alpha score was security with .677 and the lowest stimulation at .3977.

Table 5.3 - Cronbach Alpha - Lower Order Values

Level of work	n	CO	TR	SE	PO	AC	HE	SD	ST	BE	UN
All Groups	1462	.6001	.4304	.6686	.5617	.6115	.6740	.5346	.4671	.5954	.7025
Management	87	.7255	.6008	.6908	.6209	.7231	.8038	.5036	.5252	.5990	.6892
Skilled	516	.6157	.3837	.6839	.6227	.6982	.7164	.5799	.5827	.6156	.747
Semi-Skilled	576	.5974	.422	.6491	.5193	.5758	.6092	.5399	.3802	.6226	.6770
Basic Skilled	283	.5068	.4226	.677	.5751	.4797	.6388	.4417	.3977	.5049	.6752

Note: CO = conformity; TR = tradition; SE = security; PO = power; AC = achievement; He = hedonism; SD = self-direction; ST = stimulation; BE = benevolence; UN = universalism

Table 5.4 - Cronbach Alpha - Higher Order Values

Level of work	n	CONS	SEEN	OPCH	SETR
All Groups	1462	.7891	.742	.6329	.7959
Management	87	.8056	.8009	.6357	.7780
Skilled	516	.7924	.7868	.6849	.8164
Semi-Skilled	576	.7891	.7247	.6111	.797
Basic Skilled	283	.7691	.6822	.5905	.7626

Note: Cons = Conservation; SEEN = Self Enhancement; OPCH = Openness to Change; SETR = Self-Transcendence

The results of this study appears to support the findings of (Schwartz et al., 2001) who obtained alpha scores ranging from .37 (tradition) to .79 (hedonism) with the median value 0.55. As noted in Chapter 4, Schwartz et al. (2001) indicated that in the case of the PVQ, high internal reliabilities for

the values are not be expected, because the indexes include few items and most values have conceptually broad definitions, spanning multiple components. The items in each index were rather selected to cover all aspects of the broad definition, rather than measuring a narrowly defined construct (Schwartz et al., 2001). Based on the results of this study in Tables 5.3 and 5.4, one may conclude that the PVQ's alpha reliabilities are in line with the developers findings and acceptable from a statistical perspective for this study.

Tables 5.5 and 5.6 shows the Pearson *r* correlations for the ten lower order values and the four higher order values respectively. Based on Guildford's informal interpretation of *r,* the ten lower order values show a slight to moderate correlation amongst the values, in other words, almost no to a substantial relationship. In the case of the four higher order values, it ranges from a moderate to high relationships. For example, the correlation between power and conformity $r = .0477$ with a slight correlation or almost no relationship between universalism and benevolence with $r = .6566$, which is indicative of a moderate correlation or a substantial relationship.

Table 5.5 - Pearson *r* All Levels of Work - Lower Order Values

	(CO)	(TR)	(SE)	(PO)	(AC)	(HE)	(SD)	(ST)	(BE)	(UN)
CO	1									
TR	.4691	1								
SE	.5862	.432	1							
PO	.0477	.1134	.1045	1						
AC	.3739	.2954	.4267	.4297	1					
HE	.2362	.3405	.2496	.2741	.3672	1				
SD	.3555	.2889	.4159	.2713	.4609	.3241	1			
ST	.2149	.287	.2905	.3188	.4458	.4302	.3818	1		
BE	.5444	.4785	.5228	.06	.3774	.2459	.391	.3172	1	
UN	.5758	.4785	.6491	.0732	.4038	.2575	.4412	.315	.6566	1

Note: CO = conformity; TR = tradition; SE = security; PO = power; AC = achievement; He = hedonism; SD = self-direction;

ST = stimulation; BE = benevolence; UN = universalism.

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Table 5.6 - Pearson *r* All Levels of Work - Higher Order Values

	CONS	SEEN	OPCH	SETR
CONS	1.0000			
SEEN	.3977	1.0000		
OPCH	.4598	.5969	1.0000	
SETR	.7348	.3473	.4871	1.0000

Note: Cons = Conservation; SEEN = Self Enhancement; OPCH = Openness to Change; SETR = Self-Transcendence

The correlation between values closer in the circle, is greater than for the value pairs hypothesized as being positioned further apart or opposing. See Figure 2.1 in order to refer to the hypothesized position of values in the circular framework as postulated by Schwartz.

5.4   Testing the hypotheses

The analyses performed up to an including Section 5.3, utilised the actual data and processing according to Schwartz's instructions. However, this data does not represent the value priorities of the individual respondents as postulated by Schwartz. In order to test the hypothesis the actual ratings of respondents need to be converted into value priorities using the relative importance scores for each respondent's value ratings. Schwartz (2012, p. 12) explains it as follows; "Respondents differ in the way they use response scales, some rate most portraits very similar to themselves. Others use the middle of the response scales, and still others rate most values unimportant or most portraits dissimilar to themselves. The scale should measure people's value priorities, the relative importance of the different values. This is because what affects behaviour and attitudes is the trade-off among relevant values, not the importance of any one value. Say, two people rate tradition values four. Despite this same rating, tradition obviously has higher priority for a person who rates all other values lower than for one who rates all other values higher. To measure value priorities accurately, we must eliminate individual differences in use of the response scales. We do this by subtracting each person's mean response to all the value items from his or her response to each item. This converts the ratings into relative importance scores for each of the person's values into value priorities". All the analysis performed using non-parametric and multi-variate techniques from this point onward uses the mean centred data, reflecting the value priorities of the respondents.

The independent variable, levels of work, has different sample sizes and the data is skewed or non-parametric. In parametric tests of quantitative data, it is assumed that the populations have normal

distributions and the same standard deviations. It is therefore appropriate in this study to use the non-parametric Kruskall-Wallis test, to test for significant differences between the levels of work. The Kruskall-Wallis test is a non-parametric approach to perform a one-way analysis of variance, to determine if three or more samples originate from the same distribution (Williams et al., 2012).

In Tables 5.7 and 5.8, below, the results of the Kruskall-Wallis analyses are shown for the total sample, each level of work in relation to the other levels of work. The hypotheses are tested for both the ten lower and four higher order values. Significant difference is indicated in red where $p < .05$. In terms of the values theory, the ten lower order values is interrelated to the four higher order value types and the reason why the higher order values are included in Figure 8.

Table 5.7 - Non Parametric Test to Identify the Differences in the ten lower Order Values between the Independent Variable – Levels of Work

Lower Order Values										
Levels of Work Tested	**CO**	**TR**	**SE**	**PO**	**AC**	**HE**	**SD**	**ST**	**BE**	**UN**
Management vs Skilled	.0003	.0153	.1863	.0007	.2476	.2891	.0002	.5522	.3108	.9663
Management vs Semi-skilled	.0007	.0000	.9263	.0000	.2565	.0009	.0000	.7126	.4555	.4810
Management vs Basic Skilled	.0133	.0000	.3622	.0000	.4177	.0037	.0000	.5084	.0353	.8911
Skilled vs Semi-skilled	.8701	.0002	.0144	.0704	.9603	.0000	.0008	.1267	.6976	.1513
Skilled vs Basic-skilled	.1667	.0000	.6048	.0037	.6371	.0021	.0004	.0523	.0623	.9893
Semi-skilled vs Basic-skilled	.2483	.0874	.1364	.1758	.6396	.6822	.4139	.5615	.0211	.2526

Note: CO = conformity; TR = tradition; SE = security; PO = power; AC = achievement; He = hedonism; SD = self-direction; ST = stimulation; BE = benevolence; UN = universalism.

From table 5.7, it is clear that some of the ten lower order values are significantly different at various levels of work.

Table 5.8 - Non Parametric Test to Identify the Differences in the four higher Order Values between the Independent Variable – Levels of Work

Higher Order Values				
Levels of Work Tested	**CONS**	**SEEN**	**OPCH**	**SETR**
Management vs Skilled	.0000	.0747	.0021	.5738
Management vs Semi-skilled	.0000	.2532	.0001	.3930
Management vs Basic Skilled	.0000	.1379	.0004	.2151
Skilled vs Semi-skilled	.9301	.1719	.1517	.5723
Skilled vs Basic-skilled	.1403	.7301	.3064	.2150
Semi-skilled vs Basic-skilled	.1591	.4625	.8550	.4633

Note: Cons = Conservation; SEEN = Self Enhancement; OPCH = Openness to Change; SETR = Self-Transcendence

From the previous table it is clear that there are significant differences between management and the skilled, semi and basic skilled levels of work in the four higher order values, while no significant differences were reported between the three lower levels of work skilled, semi and basic skilled.

The Kruskall Wallis results are discussed in the next sub-sections, according to the hypotheses defined in Chapter 1. These results provide a pure statistical perspective in terms of the differences in value priorities according to Schwartz's values theory. Movements of values in the circular structure at the various levels of work should be considered using techniques like MDS in order to obtain a clear understanding of the differences in value priorities between the levels of work. The researcher is not contradicting the principal that values can move in the circular structure, but the study has multiple independent variables and the movement of values between the four levels of work in the value structure are relevant from a value priorities perspective. To provide insight and greater understanding of the differences in value priorities between the levels of work, the non-parametric results should not be considered in isolation, but rather in conjunction with the various MDS analyses performed in Section 5.5.

The differences in values as indicated in the non-parametric analyses are discussed and enhanced with the MDS analyses in the next sections of this chapter. Please note two other terms will be used intermittently to refer to the change in value priorities, namely change in or order of the value structure. The results of the non-parametric analyses are representative of the value priorities assigned by the participants at the various levels of work and therefore typical of the value structure or order at the various levels of work. These two terms are commonly used to explore and explain the results.

5.4.1 The differences in value priorities at the various level of work

In order to understand the differences in the value structures across the various levels of work it is necessary to explore why values should be more or less desirable at the various levels of work. It is however possible to use the definition of organisational hierarchy to explain why values are more or less different between the various levels of work. The definition of organisational hierarchy as defined in Chapter 3 is as follows;

Organisational hierarchy in most bureaucratic organisations is pyramidal in nature and is defined by (a) the formative context of the society as reflected in the businesses/ organisations of that society (b) where work occurs in lower or higher degrees of complexity, (c) and people communicate, and have access to each other, (d) informed by the business/functional objectives, operational requirements, operating procedures, policies and process flows of the organisation, (e) to perform a pattern of activities related to decisionmaking, delegation, supervision, planning and co-ordination, (f) at different levels of complexity separating these activities into a serious of steps or levels of work, (g) of which the coherent sum represents the achievement of business objectives as defined in the business strategy.

If the above definition of organisational hierarchy is analysed according to its components, the following explanations from the literature is possible to indicate why the differences should exist at the various levels of work. This is not an attempt to explore the full context of the differences in the values at the various levels of work (Table 5.7), but rather to relate the differences to various aspects of organisational hierarchy and the values theory. The investigation of differences is discussed in detail, in the next subsections of Section 5.4.

- Organisational hierarchy is a reflection of the social structure or culture that is reflected in the organisations of that society (Crawford & Mills, 2011). Values and the typical cultures to which employees belong at the various levels of work, should affect the value structures at the various levels of work. Values are socially entrenched, through the teaching of moral absolutes, they are representations of emotions and are often used in support of an individual's affective reactions (Maio & Olson, 1998). The researchers postulation in Chapter 3, supported with argument of Brewer and Chen (2007), that the lower order values, security, conformity, tradition is a reflection of collectivism and self-direction, stimulation and hedonism of individualism, appears to be correct. These lower order values represent the two opposing higher order values, conservation and openness to change respectively. This is true for the four higher-level values, but in the lower order values, it seems questionable given the differences highlighted in Table 5.7. This is probably indicative that the concepts individualism and collectivism are more nation level constructs (Laher, 2013) and that in the mining industry the social structures at the various levels of work are possibly

very different. This difference will be more evident in the further analysis and interpretation of the results.

- Power is an integral part of the management level of work, these positions are responsible to define, direct, communicate and monitor the attainment of business objectives/functional targets. This is a reflection on the varying level of decisionmaking and allocation of resources by the management level of work (Chasi & De Wet, 2008). Power values between management and the other levels of work are significantly different, confirming the postulation in the literature review about power values. Inglehart (1997) indicated that changing the importance of attainable values and downgrading unattainable values are applicable to most, but not to all values. The opposite is true in the case of values concerning material wellbeing and security, when blocked, the importance of these values increases and if attained easily the importance decreases. In the case of individuals who suffer economic hardship and social disorder, they attribute more importance to power and security values than those who live in relative comfort and safety. The non-parametric analysis indicated significant differences between most levels of work for power values.

- Management's position in the organisational hierarchy, in terms of independent decisionmaking and the authority to give instructions, relates to the power that is assigned to this level of work, because of their education and the need to consider an increasing larger number of variables in the decisionmaking process, see Table 3.5.

- Within the organisational hierarchy, work is performed at incoherent levels of complexity and employees at the semi and basic skilled levels of work perform work of a routine, procedurised and controlled nature. The complexity of decisionmaking at the semi and basic skilled levels of work is because management has considered and interpreted a varying number of variables to inform the decisionmaking process, the processes, policies, procedures and objectives. As indicated in Table 3.5, the activities performed at the different levels of work require different skills and knowledge sets (education) and associated with it is an increase in socio economic status and complexity of decisionmaking. Therefore, employees at the management and skilled levels of work should attach more importance to self-direction and stimulation values, but less importance to security, conformity and

tradition values than the two lower levels of work (Kohn & Schooler, 1983). The results in the non-parametric analyses show some agreement in terms of the indicated differences.

- In the definition of organisational hierarchy, employees occupying positions higher and lower in the hierarchy should have different socio economic statuses (see Table 3.5) and in principle different value priorities. Hedonism values, which are self-gratification values, should be more important to the employees in positions with higher socio-economic status (Schwartz, 2006). Management and the skilled levels of work will therefore consider this value more important than the two lower levels of work. The results of the non-parametric analyses confirmed that there is a significant difference between the two higher and lower levels of work.

- As positions move closer to the top of the organisational hierarchy, the activities performed require an increasing cognitive ability to consider a larger number and complexity of variables in order to formulate and direct the business activities. It is possible to accept that achievement values at management level should in principle be more important than for the three lower levels of work (Schwartz, 2006). The results of this study indicate no significant difference in achievement values between the various levels of work. Avallone et al. (2010) indicated that achievement values is about demonstrating individual competence, and pursuing success as judged by the normative standards of an individual's culture (Elliot & McGregor, 2001). The normative standards at the various levels of work could be very different; therefore, no difference in achievement values could be indicative of possible differences in the value structures between the levels of work, and not necessarily value congruence.

The differences and the reasons why the results deviated from the typical value structure as defined by Schwartz's value theory is considered and discussed in the next sections of this study.

5.4.2 Value differences between the Management and Skilled levels of work.

Based on the results of the non-parametric analyses in Table 5.9 four of the ten values are significantly different and six not between these two levels of work as follows;

Table 5.9 - Value Differences between Management and the Skilled level of work

Lower order values	Related Higher Order Values
Conformity, p = .0003	
Tradition, p = .0153	Conservation, p = .0000
Security, p = .1863	
Benevolence, p = .3108	Self-Transcendence, p = .5738
Universalism, p = .9663	
Self-Direction, p = .0002	Openness to Change, p = .0021
Stimulation, p = .5522	
Hedonism, p = .2891	
Achievement, p = .2476	Self-Enhancement, p = .0747
Power, p = .0007	

Note: Hedonism is a shared value between the two higher order values openness to change and self-enhancement.

In Chapter 3 (Table 3.3), the management level of work's education and income is very different from the other levels of work. At this level of work, it is mostly required of incumbents to be professionally qualified and directly associated is the increase in income at the higher Paterson bands, E and F band. Increased education also results in increased self-direction and stimulation values, while conformity and tradition values decrease (Kohn & Schooler, 1983). Higher income promotes the valuing of stimulation, self-direction, hedonism, and achievement values and reduces the importance of security, conformity and tradition values (Schwartz, 2007). This is confirmed between the management and skilled levels of work, and in line with the researcher's postulation in Chapter 3 (Figure 3.2). Also, note the discussion in Section 5.4.5 on conformity values.

Universalism and self-direction are adjacent values and according to the values theory, values at a more basic level form a continuum of related motivations. The link between these two values supports the reliance upon individual judgment and comfort with the diversity of life or existence (Schwartz, 2010). Some congruence between the management and the skilled levels of work, and universalism/self-direction values is expected. But universalism with p = .9663 with no statistically significant difference (assuming a tolerant, understanding appreciative position towards others) and self-direction p = .0002 with a statistically significant difference (open

expression, autonomous thinking, independent thinking and decisionmaking), provides the first indication of possible conflicting value priorities between these two levels of work (Avallone et al., 2010). Bardi et al. (2009) indicated that motivations are considered conflicting when they lead to opposite behaviours or judgement and compatible when they lead to the same behaviour or judgement. The MDS results will explore this further to enable a better understanding of this result.

The assignment of authority or power in organisations relates to the hierarchically nature and increasing complexity of work at the different levels of work. Management need to consider a larger number of variables to control the work being performed by the lower levels of work and normally has more power to act, and greater opportunity for independent thought and decisionmaking (Basini & Hurley, 1994). The difference in power values between management and the skilled levels of work is therefore expected, because the management level of work normally represents the positions with managerial authority, therefore the power of decisionmaking, instruction, etc. Schwartz (1992) indicated that power values also refer to the hierarchical organisation of relations in society. In this study, it relates to hierarchy in an organisational context. Power values are related to an individual's social status and attaining a position of authority (Avallone et al., 2010). The difference between management and the semi and basic skilled levels of work can be explained in the same context, and not repeated.

According to Schwartz (2012, p. 9), security and power values, as adjacent values, have the shared motivational emphasis to avoid or overcome "threats by controlling relationships and resources". The fact that security values are not significantly different between management and the skilled level of work, and the two lower levels of work (semi and basic skilled), is therefore surprising (Table 5.7). The literature review provided that certain values, like security values, are more prone to be affected by changes in society and historical events, for example, economic depression and societal oppressions, like apartheid. Inglehart (1997) also indicated that changing the importance of attainable values and downgrading unattainable values are applicable to most, but not to all values. The opposite is true in the case of values concerning material wellbeing and security, when blocked, the importance of these values increases and if attained easily the importance decreases. In the case of individuals who suffer economic hardship and social disorder, they attribute more importance to power and security values than those who live in relative comfort and safety (Inglehart, 1997). Economic hardship and social disorder can be applicable to all levels

of work, with the first being more applicable to the lower levels of work and the last across the levels of work. The fact that security values are mostly not significantly different between the various levels of work, is not considered as value congruence and investigated in more detail in the MDS analyses.

Similarly, power and achievement values are adjacent values with the shared motivational emphasis to attain social esteem (Schwartz, 2006). Achievement values did not show significant difference between these two levels of work and in principle, the other levels of work as well (semi and basic skilled). A possible answer is in the core definition of the value and its close relationship to power values as stated in the literature review (note the negative side as well). Achievement values motivate individuals to invest in group tasks. They also legitimise self-enhancing behaviour, so long as it contributes to group welfare. On the negative side, these values foster efforts to attain social approval (showing competence according to the normative standards of an individual's culture (Elliot & McGregor, 2001)) may disrupt harmonious social relations and interfere with group goal attainment (Schwartz, 2006). This is another indication that there might be conflicting value priorities between the management and the skilled levels of work.

5.4.3 Value differences between the Management and Semi-skilled levels of work.

Based on the results of the non-parametric analyses in Table 5.7, five of the ten values are significantly different between the management and semi-skilled level of work as follows;

Table 5.10 - Value Differences between Management and the Semi-skilled level of work

Lower order values	Related Higher Order Values
Conformity, $p = .0007$	
Tradition, $p = .0000$	Conservation, $p = .0000$
Security, $p = .9263$	
Benevolence, $p = .4555$	Self-Transcendence, $p = .3930$
Universalism, $p = .4810$	
Self-Direction, $p = .0000$	
Stimulation, $p = .7126$	Openness to Change, $p = .0001$
Hedonism, $p = .0009$	
Achievement, $p = .2565$	Self-Enhancement, $p = .02532$
Power, $p = .0000$	

Note: Hedonism is a shared value between the two higher order values openness to change and self-enhancement.

Conformity, tradition, self-direction and power values were significantly different between the management and semi-skilled levels of work, and corresponds with the value difference between the Management and skilled levels of work in the previous section. The interpretation and argument on these differences are therefore not discussed again. The difference in hedonism values and the fact that security values between the management level and the semi-skilled level of work is not significantly different $p = .9263$, needs further discussion.

The difference in hedonism values between management and the semi-skilled level of work could stem from the collectivist culture to which the researcher postulated most of the semi-skilled participants would belong. Hedonism is about self-gratification, self-centred satisfaction (Schwartz, 2012), or enjoyment of life in general (Schwartz et al., 2012). The socio-economic status of individuals at this level of work will not enable them to enjoy aspects of life that require financial means to do so; instead their focus is on personal, group and family survival (Laher, 2013, Schwartz & Sagie, 2000). Hedonism and achievement are adjacent values, and the related motivations are self-centred satisfaction, but the non-parametric analysis results shows the differences between management and this level of work is significantly different for hedonism, but not significantly different for achievement. The movement of the values in the value structures at some of the levels of work as discussed in the MDS analyses might explain why, for example, achievement and stimulation values are not significantly different as well.

The fact that security values between management and the semi-skilled level of work with $p = .9263$ are not significantly different, is difficult to explain. Self-direction and security values are opposing values in the values structure. In other words, based on the literature that confirms the theory, for example, (Knoppen & Saris, 2009, Schwartz & Boehnke, 2004, Vecchione et al., 2009), when self-direction values are significantly different, then security values should be significantly different as well. This is also confirmed by (Schwartz, 2006) who indicated that there is a trade of between competing values, individuals will balance their opposing values, in this case self-direction and security, by choosing alternatives that promote higher against lower priority values. The most plausible reason for this is that both levels of work experience social disorder and the semi-skilled to a certain extent socio-economic hardship as well (Inglehart, 1997). This is probably indicative of a change in the value structure at the various levels of work and explored further with the MDS analyses.

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5.4.4 Value Differences between the Management and Basic Skilled levels of work.

As expected, the results of the non-parametric analyses in Table 5.7 indicates that six out of the ten lower order values are significantly different between management and the basic skilled level of work, as follows;

Table 5.11- Value differences between Management and the Basic Skilled level of work

Lower order values	Related Higher Order Values
Conformity, $p = .0133$	
Tradition, $p = .0000$	Conservation, $p = .0000$
Security, $p = .3622$	
Benevolence, $p = .0353$	Self-Transcendence, $p = .1379$
Universalism, $p = .8911$	
Self-Direction, $p = .0000$	
Stimulation, $p = .5084$	Openness to Change, $p = .0004$
Hedonism, $p = .0037$	
Achievement, $p = .4177$	Self-Enhancement, $p = .0004$
Power, $p = .0000$	

Note: Hedonism is a shared value between the two higher order values openness to change and self-enhancement.

The previous two sections explored the possible reasons for and the differences between the management level and the lower levels of work for the following values; security, conformity, tradition, self-direction, hedonism and power. This will not be repeated, but the difference in benevolence and hedonism values, between management and this level provides some interesting insights, which is also explored further in the MDS analyses.

In terms of the values theory, benevolence and hedonism values are opposing values in the value circle. As indicated earlier hedonism is a self-gratification value, while benevolence values emphasize voluntary concern for others' welfare (Schwartz, 2012). Socio-economic status and education impacts on the context of self-gratification and the ability to care or be concerned with welfare of others (Laher, 2013). Self-gratification cannot manifest in material gratification, but more physical, for example, sex according to the definition of hedonism. This reason for this is

that meeting the basic needs of individuals at the basic skilled level of work are not possible, creating a situation of continuous struggle to survive. Therefore, their focus is internalised on their own survival and not that of others (Laher, 2013, Schwartz & Sagie, 2000).

This confirm the findings of Bardi et al. (2009) that values on opposite sides of the value circle are not antonyms; because there is no lexical contradiction between them, for example, the value item freedom measures self-direction and the value item obedient measuring conformity are located on opposite sides of the circle, but they are not antonyms. The contradiction is based on their conflicting motivations in individuals. This might also provide a plausible answer to why security values are not different at the various levels of work.

An important finding is the fact that both tradition and benevolence values are significantly different, and according to Schwartz (2012) as adjacent values they motivate devotion to one's own in-group, in this case, the basic skilled level. This shows high in-group solidarity and commitment to the values of the basic skilled level. This result is duplicated in the difference between the skilled and basic skilled levels of work as well. It is therefore unlikely that the group solidarity is significant at the management or skilled levels of work.

5.4.5 Value differences between the Skilled and Semi-skilled levels of work.

Only four of the ten lower order values are significantly different between these two levels of work and at face value implies greater value congruence. The differences are as follows;

Table 5.12 - Value Differences between Skilled and the Semi-skilled levels of work

Lower order values	Related Higher Order Values
Conformity, $p = .8701$	
Tradition, $p = .0002$	Conservation, $p = .9301$
Security, $p = .0144$	
Benevolence, $p = .6976$	
Universalism, $p = .1513$	Self-Transcendence, $p = .1719$
Self-Direction, $p = .0008$	
Stimulation, $p = .1267$	Openness to Change, $p = .1517$
Hedonism, $p = .0000$	
Achievement, $p = .9603$	Self-Enhancement, $p = .5723$
Power, $p = .0704$	

Note: Hedonism is a shared value between the two higher order values openness to change and self-enhancement.

Conformity values with a marginal difference *(p = .8701)* between the skilled, semi and basic skilled levels of work, is probably symbolic of the Paterson (1972b) definition for these levels of work. What needs to be done have been decided by the management level of work, and the lower levels of work need to perform the expected activities, realising those decisions or instructions. In other words, conform to the functional plans and the actions that were decided by those with the authority (power) to decide and provide instructions. This also reflects on the definition of organisational hierarchy as defined in the literature review, work occurs in lower or higher degrees of complexity, to perform a pattern of activities related to decisionmaking, delegation, supervision, planning and co-ordination.

Notable is the difference in security values between these two levels of work, and the only levels of work where it is different. In terms of this study, it is an important finding and is probably indicative of the instability experienced in the mining industry currently, as these two levels of work represent 75% of the total sample in this study. Schwartz (2006) indicated security and conformity values promote harmonious social relationships. Conformity with $p = .8701$ suggests that this two levels of work has to work closely together and as the skilled level of work represents the largest contingent of supervisors. Note the confirmation of this in the next paragraph (discussed in detail in the MDS analyses). The significant differences in tradition and security

values at $p = .0002$ and $p = .0144$ respectively, might be indicative of the movement in the value structure of one of these levels of work and confirms the researcher's interpretation about the possible reason for the instability experienced in the mining industry.

Conformity, tradition and security are adjacent values in the motivational continuum, as discussed in Section 5.4.2, with the following purpose as noted by Schwartz (2012, p. 9); "conformity and tradition - subordination of self in favour of socially imposed expectations; tradition and security - preserving existing social arrangements that give certainty to life; conformity and security - protection of order and harmony in relations". Tradition and conformity values are especially close motivationally; they share the goal of subordinating the self in favour of socially imposed expectations. They differ primarily in the objects to which one subordinates the self. Conformity entails subordination to persons with whom one is in frequent interaction, for example parents, teachers, bosses (Schwartz, 2006). Tradition is more about subordination to the habits and customs, ways of thinking and the commitment to preserve these traditions of a specific group (Avallone et al., 2010). Tradition values contribute significantly to in-group solidarity (Schwartz, 2006).

Security values refer to the importance of preserving order, stability, harmony and security within the physical environment, work-related relationships, and professional activities (Avallone et al., 2010). Security and conformity values also promote harmonious social relations, because it plays a role in avoiding conflict and violations of group norms. As adjacent values, these values are usually acquired in response to demands and sanctions to avoid risks, control forbidden impulses, and restrict the self. This reduces their importance because it conflicts with gratifying self-oriented needs and desires. Moreover, the emphasis of these values is on maintaining the status quo and conflicts with finding innovative ways to solve group tasks (Schwartz, 2006).

Power values with low $p = .0704$ do not differ significantly, but is probably more related to the difference in security values as and adjacent value at $p = .0144$ and the consideration within the motivational continuum to avoid or overcome threats by controlling relationships. Power values and achievement values are adjacent values as discussed in Section 5.4.2, and it is notable that achievement's $p = .9603$, not significantly different, almost the same between these two levels of work. This strengthens the researchers argument about the instability in others words almost

conflicting relations between these two levels of work or the possibility that the value structure of one of these levels of work has moved significantly.

5.4.6 Value differences between the Skilled and Basic Skilled levels of work.

Although only four values differ significantly between these two levels of work, there are meaningful changes in the *p* values providing some interesting insights. The differences are as follows;

Table 5.13 - Value Differences between Skilled and the Basic Skilled levels of work

Lower order values	Related Higher Order Values
Conformity, *p* = .1667	
Tradition, *p* = .0000	Conservation, *p* = .1403
Security, *p* = .6408	
Benevolence, *p* = .0623	Self-Transcendence, *p* = .2150
Universalism, *p* = .9893	
Self-Direction, *p* = .0004	
Stimulation, *p* = .0523	Openness to Change, *p* = .3064
Hedonism, *p* = .0021	
Achievement, *p* = .6371	Self-Enhancement, *p* = .7301
Power, *p* = .0037	

Note: Hedonism is a shared value between the two higher order values openness to change and self-enhancement.

The differences in power, hedonism and self-direction values was discussed earlier, but notable once again, is the fact that benevolence and tradition values differ significantly, confirming the strong in-group solidarity at this level of work. Universalism with p = .989, not significantly different, highlights the true context of this value, the importance of assuming a tolerant, understanding and protective position towards others (Avallone et al., 2010) and is important when in-groups relate to those with whom they do not identify (Schwartz, 2006), for example, the other levels of work. Note the *p* values for universalism, between management and the skilled levels of work at *p* =.9663, management and basic skilled at *p* = .8911 and between the skilled and basic skilled levels of work at *p* = .9893 and is therefore indicative of the strong in-group solidarity. This level of work therefore adopted a tolerant understanding or approach, because

they do not identify with the values of these two levels of work. The high *p* scores between these values of work for universalism values, therefore does not show value congruence, but actually implies conflicting value priorities.

5.4.7 Value differences between the Semi-skilled and Basic Skilled levels of work.

The only value with significant difference between these two levels of work is benevolence at $p = .0211$, but once again note the low *p* score, although not significantly different, for tradition $p = .0874$. This confirms the findings mentioned earlier about strong in-group solidarity at the basic skilled level of work. Based on the literature review, the postulation is that these two levels of work represent a more collectivist value culture, but in this study, it could be indicative of the movement of values in the value structure between these two levels of work.

If the focus is on benevolence values only, Schwartz and Sagie (2000) found in nations with a lower socio-economic status, individuals are focused on their own survival needs and may attribute little importance to the needs of others. This point is confirmed by Laher (2013) which highlights that collectivist cultures will most likely not attend to the needs of all others but rather to those whom they deem to be part of the in-group, for example immediate and extended family members, long-term work, and interest groups.

5.4.8 Higher order values.

Chapter 3 of the literature review provides that an increasing higher level of education is required at the higher levels of work, but linked to the higher level of work and education is the resultant increase in income. As a result individuals occupying positions at higher levels in an organisation, socio-economic status improve as well and in turn facilitate an increase in the importance of independent thought and action, openness to change and the associated decrease in conformity, tradition and security values (Kohn & Schooler, 1983).

The results confirm the postulation in the literature review, that the higher order values openness to change and conservation is rooted in the well-known individualist and collectivist cultures. This study provides evidence that between the management level of work and the three lower levels of work there is significant differences in these two opposing values (openness to change and conservation), but not between the two other higher order values self-transcendence and self-enhancement.

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According to the non-parametric analyses, there is no difference between the skilled, and the semi/basic skilled levels of work for the higher order values. This is true for the semi and basic skilled level of work as well. The MDS analyses might provide a better explanation on the movement of the higher order values between the various levels of work.

5.4.9 General comments

The above interpretations assume a normal value structure according to the values theory, for example, values can move its position around the circular structure, but changes in the order of values around the circle will affect the interpretation of the non-parametric analyses. In other words, if the value structure is considered as a circular motivational continuum (Schwartz, 2012), and self-direction and security values change their positions as opposing values to be adjacent values, it implies a change in the motivational continuum of the value structure. This could therefore result in a change in relationship between adjacent and opposing values. Therefore, rendering some of the interpretations made because of the adjacent and opposing values relationship in the motivational continuum, not completely correct.

This argument stems from the fact that this study has multiple independent variables, represented by the four levels of work. In a normal values study with a single independent variable the above argument will be invalid. As a result and not intended at the commencement of the study, the MDS analyses will form a more important role in the data analyses and the interpretation of the differences in value priorities. The interpretations in the next section require extensive reference to figures in the literature review and it is advisable to ensure easy access to those figures before commencing with the next section.

5.5   Extending the analysis with Multidimensional Scaling

In order to enhance the understanding of the differences in values and value priorities at the various levels of work, it is necessary to study the measures of similarity that determines the dimensions of the value hierarchy and explain the value priorities of the collective responses at the various levels of work. Factor or principal component analysis and multidimensional scaling (MDS) are the most commonly used to test circumplex structures in the social sciences and also that of the values theory (Perrinjaquet, Furrer, Usunier, Cestre & Valette-Florence, 2007). Therefore, it is appropriate to use

multidimensional scaling to study the value priorities assigned by the various levels of work to the values in the value structure. This enabled the researcher to plot the applicable value hierarchies for the various levels of work. MDS results also assist with the identification of value items that are not located in their expected regions. The purpose of these plots is therefore to determine whether the values at the various levels of work adhere to the theorised pattern of the values theory and to provide insight into changes of values that might have moved. In addition, it will assist in enhancing the understanding of the differences as obtained through the Kruskall-Wallis non-parametric tests in Tables 5.7 and 5.8. A variety of MDS analyses is included to provide a better understanding of the movement in the values structures at the four levels of work. It includes the following analyses;

- a 40X40-correlation matrix of the 40 values was used to obtain plots of all values for each level of work, (Figures 5.12 to 5.16).
- a 10x10-correlation matrix was used to obtain plots of all the lower order values for each level of work, (Figures 5.17 to 5.21).
- The ten lower order values represents the two orthogonal dimensions or four higher order values and a 4X4 correlation matrix was used to obtain plots of the lower order values.

The coding of lower and higher order values is the same in all MDS plots as follows;

- **Ten lower order values;** CO = conformity; TR = tradition; SE = security; PO = power; AC = achievement; HE = hedonism; SD = self-direction; ST = stimulation; BE = benevolence; UN = universalism. Where the abbreviation is preceded by an M it indicates that it is the mean centred value, as explained in the first paragraph of Section 5.4. In the 40x40 MDS's the abbreviation is preceded with the number of the value in the PVQ questionnaire.

- **Four Higher order values;** CONS = Conservation; SEEN = Self Enhancement; OPCH = Openness to Change; SETR = Self-transcendence.

In order to investigate the differences with the MDS analyses the researcher followed the reverse funnel effect, starting with 40X40 MDS's and then working down to the 4X4 MDS's. The first parts of this section therefore identifies the move in values and changes in values priorities, but does not necessarily provide interpretation of the reasons for the moves, which follows later in this section.

5.5.1 Making sense of the 40x40 MDS analyses

Based on the literature, values with peripheral locations in the MDS analysis indicate that the correlation of a specific value range from quite positive for nearby values, to negative or much less positive for values in the opposite side of the circle. Values with central locations signify a narrower range of correlations with the other value types, mainly positively (Schwartz, 1992). The closer any two values in either direction around the circle, the more similar their underlying motivations, the more distant, the more antagonistic their motivations. In contrast, the motivational goals of value types in opposing positions around the circle are not easily pursuable simultaneously. For example, the pursuit of achievement values may conflict with the pursuit of benevolence values: Seeking personal success for oneself is likely to obstruct actions aimed at enhancing the welfare of others who need one's help (Schwartz, 1996). Competing values emanate in opposing directions from the centre of the model and complementary types are in close proximity going around the circle (Schwartz, 1996). Therefore, in a normal reflection on the circumflex of values according to Schwartz's value theory (Figure 2.1), it is possible to conclude that tradition values will generally conflict more strongly with hedonism, stimulation, and self-direction values than conformity values. Similarly, power values conflict more significantly with universalism and benevolence values than with achievement values (Schwartz, 1992). Figure 3.4 in the literature review is a typical 40X40 MDS reflecting Schwartz's value structure. It is was postulated in Chapter 3 of the literature review that the Management and the skilled levels of work will have a more Western or individualistic values structure similar to Figure 3.4, while the two lower levels of work would resemble that of a collectivist culture, similar to Figures 3.1 and 3.6. The 40X40 MDS of the lower order values for the total sample in this study is shown in Figure 5.12 below.
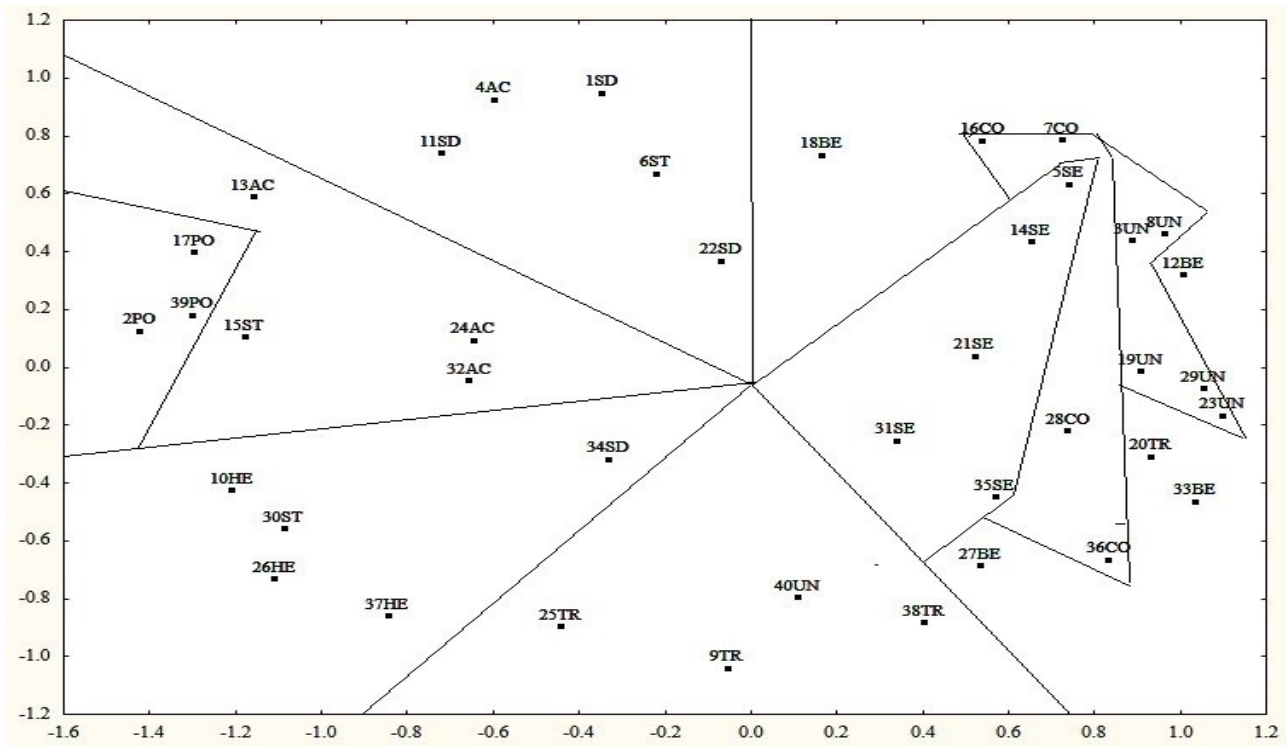
Figure 5.12. 40x40 MDS for the total sample

In Figure 5.12 the lower order values yielded 5 distinct regions for the ten lower order values; self-direction, achievement, hedonism, power and tradition. The values structure of the total sample therefore does not resemble the values structure according to Schwartz's values theory. Benevolence and universalism have become peripheral values clustered together with security and conformity into one layered region and not separate regions on their own. Layered behind benevolence is universalism and universalism behind conformity and conformity behind security. This is a unique finding as Schwartz's value theory postulates that tradition shares a region with conformity and normally the rest of these values are adjacent to each other. Figures 2.1 and 3.4 reflect on the values according to the values theory. Achievement, security and self-direction values are positioned around the middle of the circle, in other words showing a more positive relationship with each other (Schwartz, 1992, 2006, 2012, Schwartz et al., 2012). This is in contradiction to Schwartz's value theory, where self-direction and security values are opposing values. Self-direction values is about openly expressing oneself, innovative thinking and independence of thought (Avallone et al., 2010). Self-direction values are intrinsically motivated (self), facilitates the ability to cope with group challenges in time of crisis and satisfies individual needs without threatening social relations (Schwartz, 2006). Security values support and promote harmonious social relationships and social

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stability, therefore maintaining the status quo is emphasised. This which is in direct conflict with self-direction values like innovation, open expression, independent thought (Schwartz, 2012). In the literature review it was stated that socio-economic status and education increase self-direction values with an associated decrease in security values (Kohn & Schooler, 1983). In other words, the change in the position of these two values is significant.

In addition, it appears as is if security and power values, which are adjacent values have become opposing values in the total sample (Figure 5.12) and for all the levels of work, except for the management level, (Figures 5.12 to 5.16). Power values involves one's social status, the attainment of authoritative position (Avallone et al., 2010) and could harm or exploit others or damage social relationships, but it is of some importance because power values help to motivate individuals to work for group interest (Schwartz, 2006). It is however important to note the position of power values situated at the peripheral behind achievement values, not an uncommon finding. Schwartz (1992) noted that in 26 of 40 samples, power formed a distinct region to the periphery of the circle behind achievement values. This is also a common finding for this study in the 40X40 plots for all the levels of work. Schwartz (1992) explained the reason for the movement of power values as follows; both values types focus on social esteem and the reason why they are adjacent values. In the case of achievement values it is more representative of an individual's strivings to demonstrate competence in everyday interaction (e.g., ambitious). However, power values refer more to the abstract outcomes of action in the form of status in the social structure, for example, wealth. Therefore, achievement values refer to the striving of the individual alone, and power values refer to the hierarchical organisation of relations in society or organisations (Schwartz, 1992). This does however not clarify why security and power values have become opposing values, and security and self-direction values have become adjacent or positively related. The reason for these changes might become more evident as the researcher breaks down the information obtained through the various MDS analyses and attempt to relate it to Schwartz's value theory.

The MDS plots of the various levels of work in the 40X40 MDS's yielded surprising results. The findings differs from the study of Schwartz et al. (2001) in South Africa (Figure 3.1) and that of Koivula and Verkasalo (2006), Finnish student, white collar and manual workers MDS structures (Figures 3.4, 3.5 and 3.6). There is no resemblance to the Finish manual workers study (Figure 3.6), or even the Black South African study (Figure 3.1). Although this study does not differentiate on

race, mainly Africans occupy the semi-skilled and basic skilled levels of work. This is shown in context in Table 5.15.

Only the management and skilled levels of work, (Figures 5.13 and 5.14), showed some resemblance to Schwartz's theorised circular pattern (the reader should use Figures 2.1 and 3.4 as reference to identify the resemblance in Figures 5.13 to 5.14). The semi-skilled and basic skilled levels of work, Figures 5.15 and 5.16 showed limited resemblance to Schwartz's values theory. In general, the values are not clustered together and for most of the values, it is mixed in an almost uninterpretable integration of the 40 values. Given the dynamic nature of values and the fact that 12 years have passed since the development of the PVQ, and South Africa being a country or society in transition (Patel, 2003) could result in the distortion of value relations as obtained in this study (Figures 5.15 and 5.16).
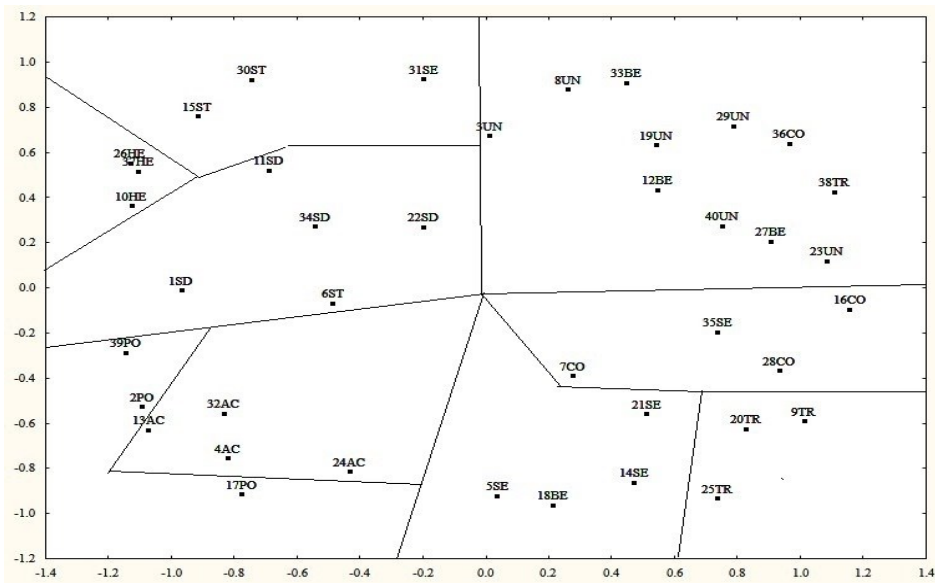
Figure 5.13. 40X40 MDS - Management
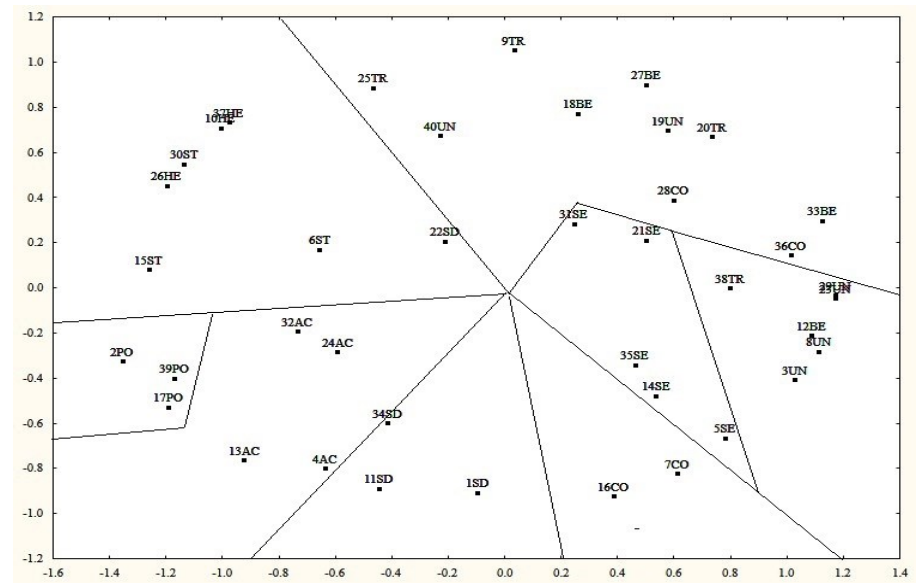
Figure 5.14. 40X40 MDS – Skilled
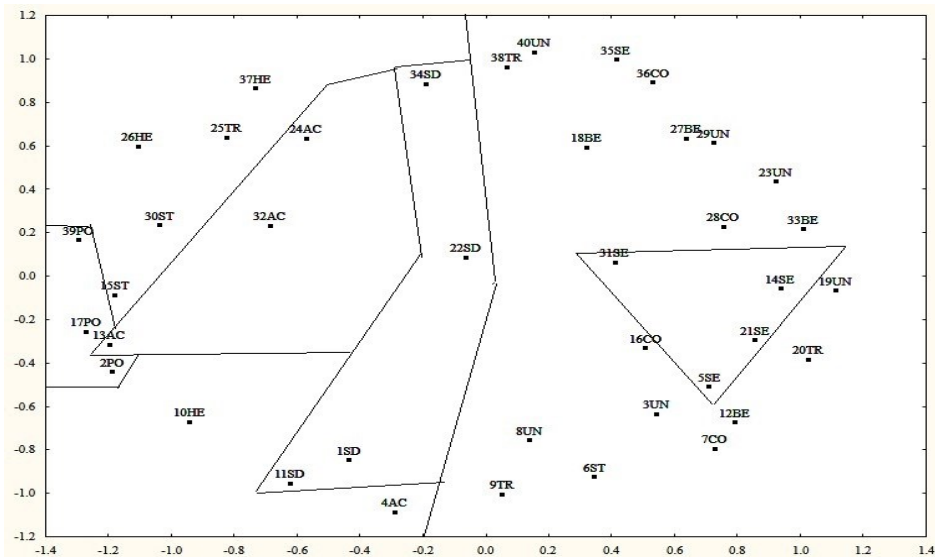
Figure 5.15. 40X40 MDS - Semi-Skilled
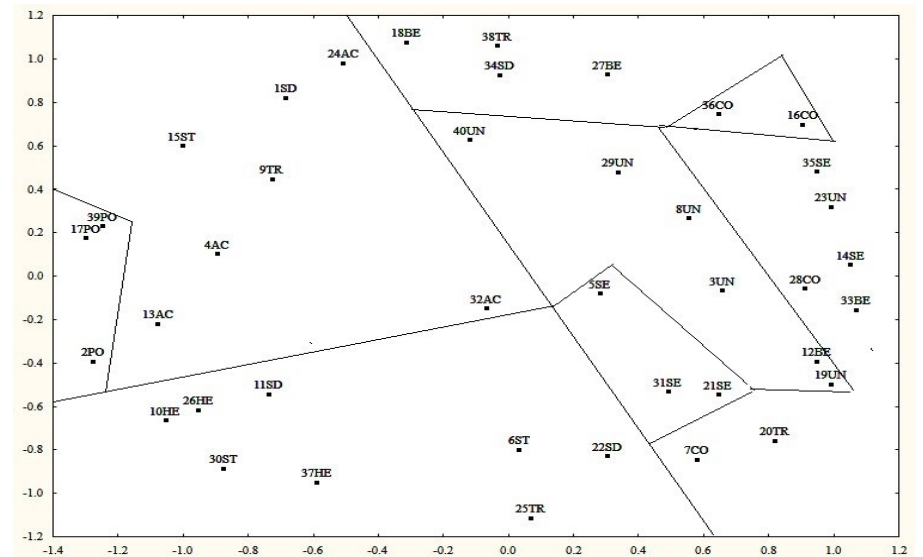
Figure 5.16. 40X40 MDS - Basic Skilled

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5.5.2 Analysing the movement in the value structures for the lower order values

The extent of the values movement is only visible when plotting the lower order values in a 10X10 MDS plot in Figures 5.17 to 5.21, use Figure 2.1 as reference for this section. Figure 5.17 below, represents the MDS of the ten lower order values for the total sample. The order of the circular pattern differs from Schwartz's value theory. The values clearly form a circular pattern with two distinct areas, each with five lower order values, also linking to the four higher order values. In other words, conservation/self-transcendence and openness to change/self-enhancement reflects the context of the lower order values. The order of the adjacent and opposing lower order values has changed, if one considers the values theory.
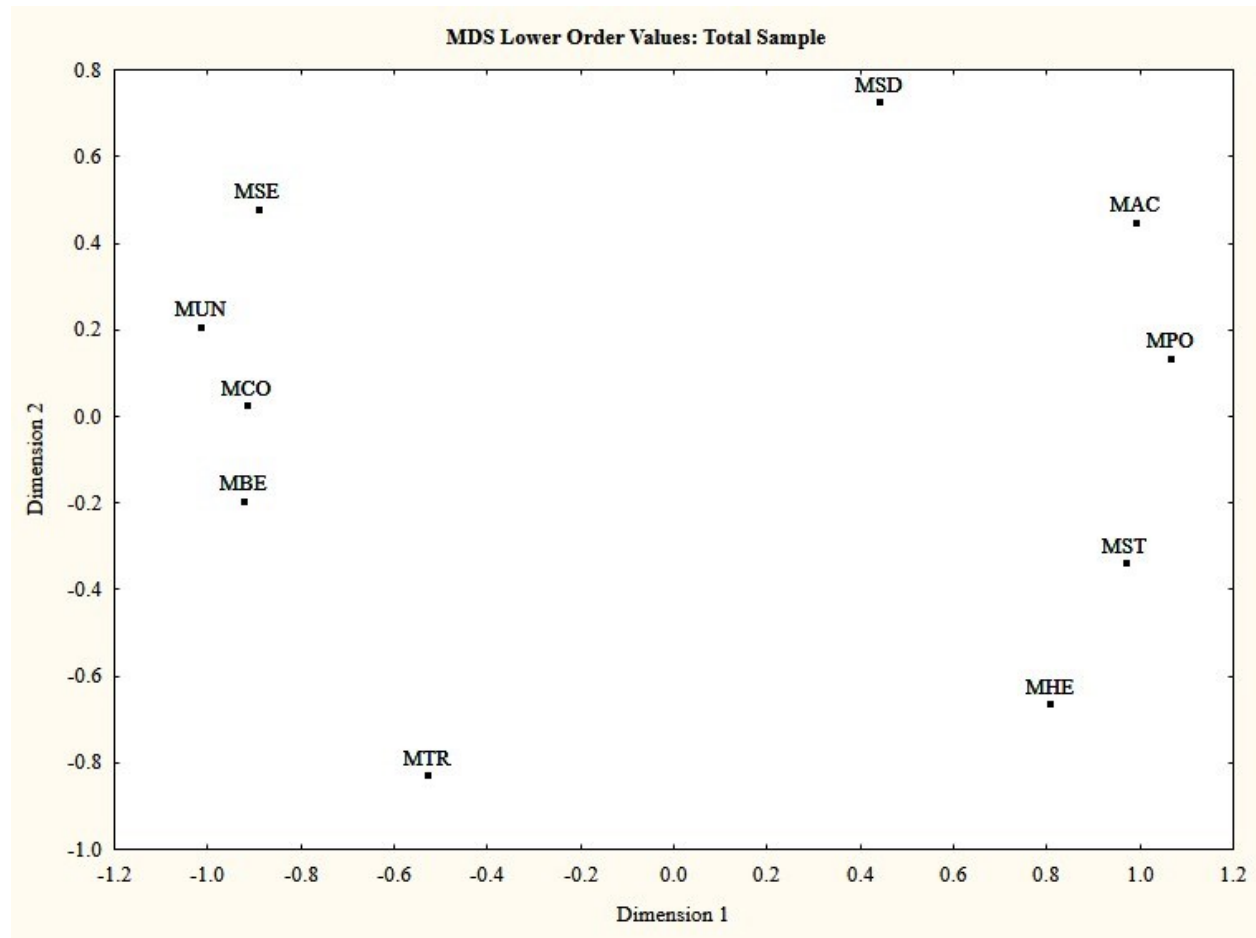
Figure 5.17. MDS Lower Order Values - Total Sample

Rotation of the value circle in the postulated continuum does not affect the meaning of the value structure (Schwartz, 2012). From the literature review it is evident that values could change their

position in relation to adjacent values. For example, power and achievement is in one region in the Finnish white collar and manual worker MDS's (figures 3.5 and 3.6) (Koivula & Verkasalo, 2006), and security values shared a region with conformity and tradition values, in both the white collar and manual worker samples. It is important for the reader to note that unlike in this study where some values changed their physical position, in the Finish study security, conformity and tradition, although not adjacent any longer, still shared the same region.

The dramatic change as shown in Figure 5.17, where two opposing values become adjacent values and vice versa, for example, security and self-direction, and power and security values, needs further investigation. Interestingly, for the white collar workers in the Finnish study of Koivula and Verkasalo (2006), the self-direction values and security values were not at the peripheral, but closer to the centre of the circle, which is indicative of a more positive relationship between these values as well. However, in the aforementioned study the two values remained in two opposing regions, but in this study, although adjacent, still apart from each other. This probably indicates a closer relationship between security and self-direction values and considered as a possible reason why security values are not significantly different between most of the levels of work in the non-parametric analyses (Tables 5.7 and 5.8).

The MDS information for the 10X10 lower order values in Figures 5.18 to 5.21 shows the order of the value structure for each level of work. Except for the Management level of work, security and self-direction values have become adjacent values as indicated earlier. Although these two values have become adjacent values, the distance between these two values remain relatively large in all samples. At this stage, the reason for the move is not clear. Although security and self-direction values have become adjacent values in all the levels of work, the readers should specifically note the position of these values for the skilled level of work in relation to the other levels of work.

Security and universalism values have moved closer for all the levels of work. Schwartz (2012) indicate that security and universalism values are considered as peripheral values, because these two values are concerned with the interest of others, but their goals guide the pursuit of individual interest. Security values represent anxiety based values with a social focus and universalism, anxiety free values with a social focus (Schwartz, 2012).
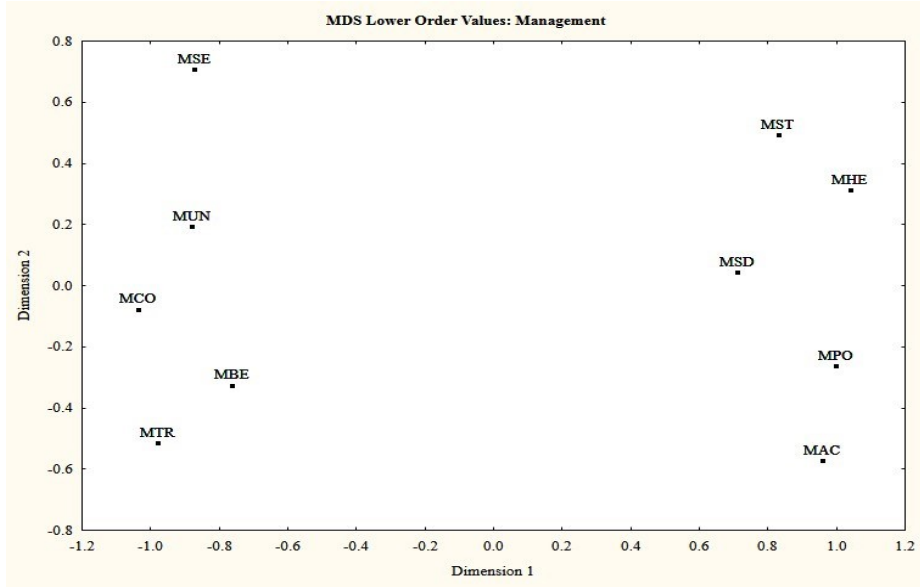
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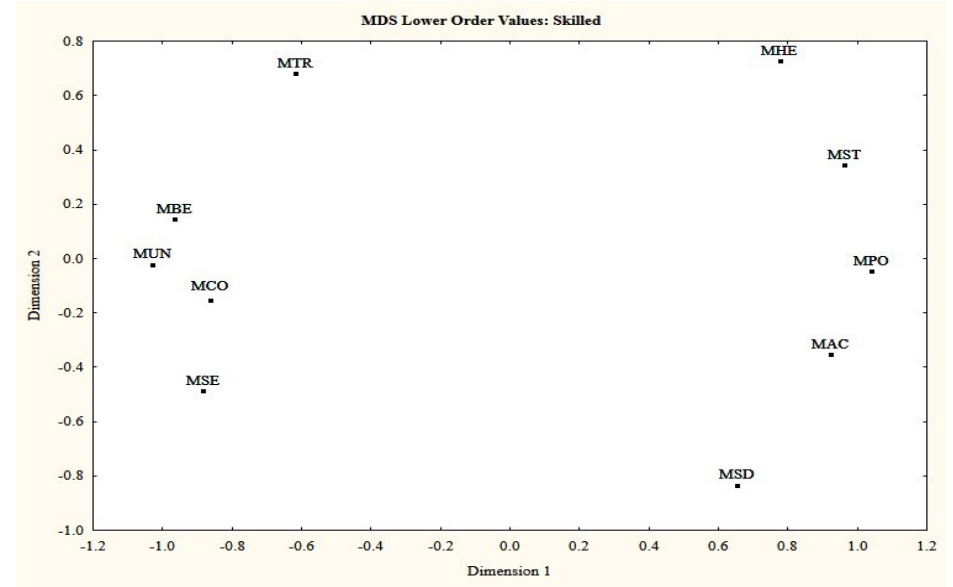*Figure 5.18.* MDS lower Order Values - Management

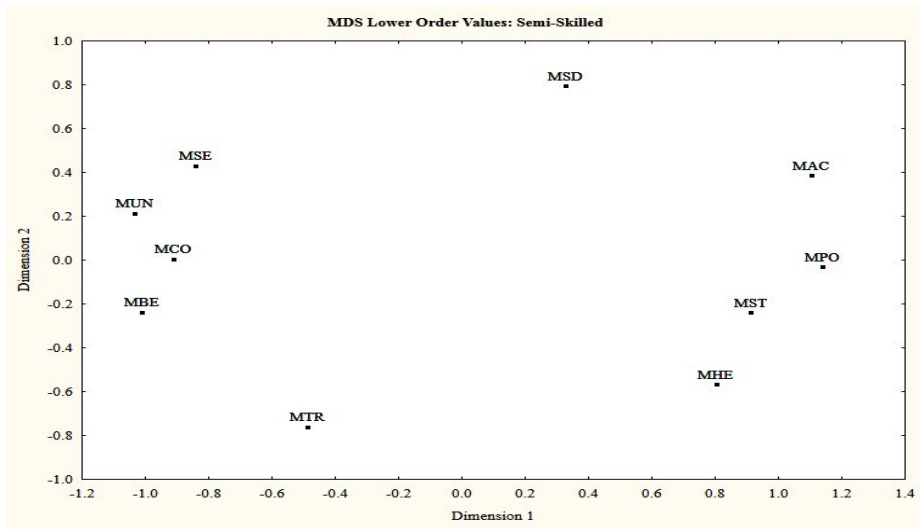*Figure 5.19.* MDS Lower Order Values - Skilled

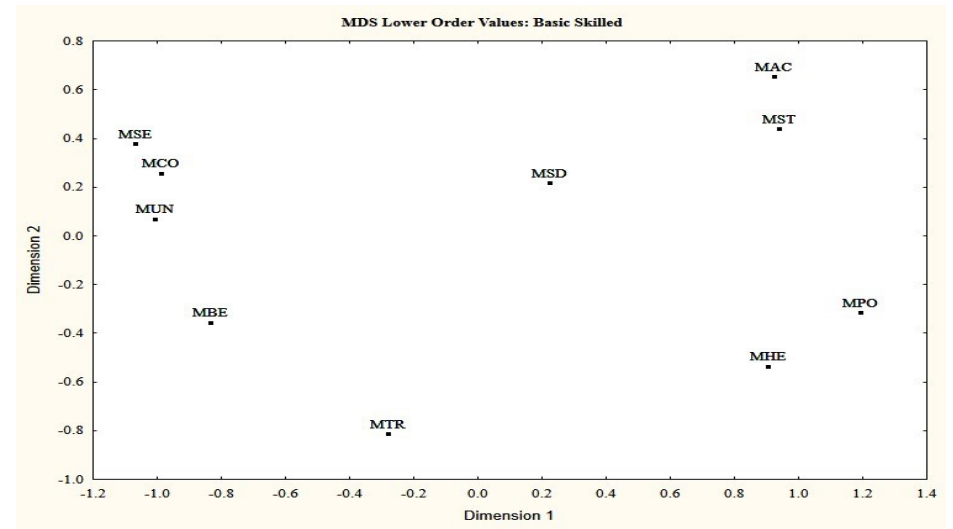*Figure 5.20.* MDS Lower Order Values - Semi-skilled

Figure 5.21. MDS Lower Order Values - Basic Skilled

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5.5.3 Investigating the changes in the value structures of the levels of work

In Table 5.14 below, the MDS information of the 10X10 lower order values (Figures 5.18 to 5.21) is shown in relation to Schwartz's value theory. Security values in this case represent the anchor value and then values in the value structure at each level of work recorded in an anti-clockwise manner. In the case of the skilled level of work, (Figure 5.19), the position of tradition values is in the same region as the security values for the other levels of work and therefore used as the anchor value to reflect on the movement of values in the value structure.

Table 5.14 - Order of Values for all Samples versus Schwartz's Value Theory

Value order according to Schwartz's theory	Management sample's value order	Skilled sample's value order	Semi-Skilled sample's value order	Basic Skilled sample's value order
Security	Security	Tradition	Security	Security
Conformity	Universalism	Benevolence	Universalism	Conformity
Tradition	Conformity	Universalism	Conformity	Universalism
Benevolence	Benevolence	Conformity	Benevolence	Benevolence
Universalism	Tradition	Security	Tradition	Tradition
Self-direction	Achievement	Self-direction	Hedonism	Hedonism
Stimulation	Power	Achievement	Stimulation	Power
Hedonism	Self-direction	Power	Power	Stimulation
Achievement	Hedonism	Stimulation	Achievement	Achievement
Power	Stimulation	Hedonism	Self-direction	Self-direction

The movement in the values structures at the various levels of work in relation to Schwartz's values theory is clear from this comparison. However, studying Table 5.19 carefully, the order of values in the skilled level of work appears to have changed regions, in other words two of the higher order values have changed their positions in the four quadrants of the value structure in relation to the other levels of work, (Figure 2.1). This is more evident in the MDS of the four higher order values for the skilled level of work, (Figure 5.22). The other three levels of work's four higher order value

MDS's are according to Schwartz's values theory in Figure 2.1. The reason for these changes is explained in the next sections of this document.
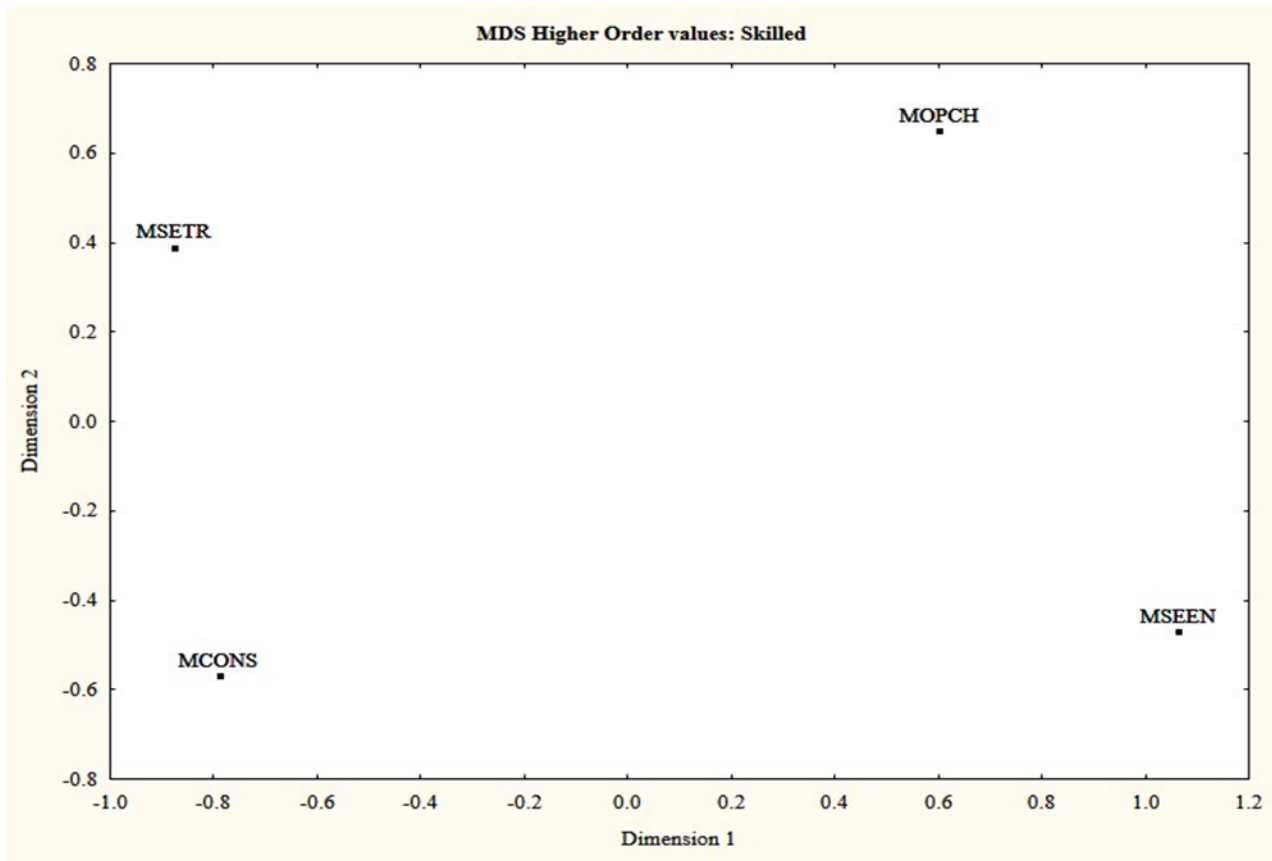

Figure 5.22. MDS Higher Order Values - Skilled Workers

In Figure 5.22, the MDS of the higher order values for the skilled level of work reflects similar positions in the total sample. The MDS's of the higher order values for the management, semi and basic skilled levels of work, is according to Schwartz's values theory in Figure 2.1. The movement of the skilled level of work's value structure should therefore have significant meaning for this study. The reader might immediately think that the researcher is contradicting earlier statements, (i) on the fact that the movement of values in the circular continuum does not affect the meaning of the value structure. (ii) About the purpose of multi-dimensional scaling, the global or holistic measures of similarity or preference, which empirically infers the dimensions (both character and number) that reflect the best explanation of individual or collective responses. First, the literature is silent about the movement in samples with multiple independent variables, like levels of work. In this case, the skilled level of work represents a critical link between the management and the two lower levels of

work in the organisational hierarchy. Secondly, in this study, the skilled level of work's sample size is only 37.22% of the total sample and yet it changed the quadrants for the total sample. It can therefore be argued that in this study the movement in the value structure of the skilled level of work must have significant meaning if values are considered as a motivational continuum. In order to display the information of Table 5.14 graphically and to visualise the movement in the value structures based on the assigned value priorities at the various levels of work, Figure 5.23 superimpose the 10X10 lower order value MDS's for all levels of work according to Figures 5.18 to 5.21.
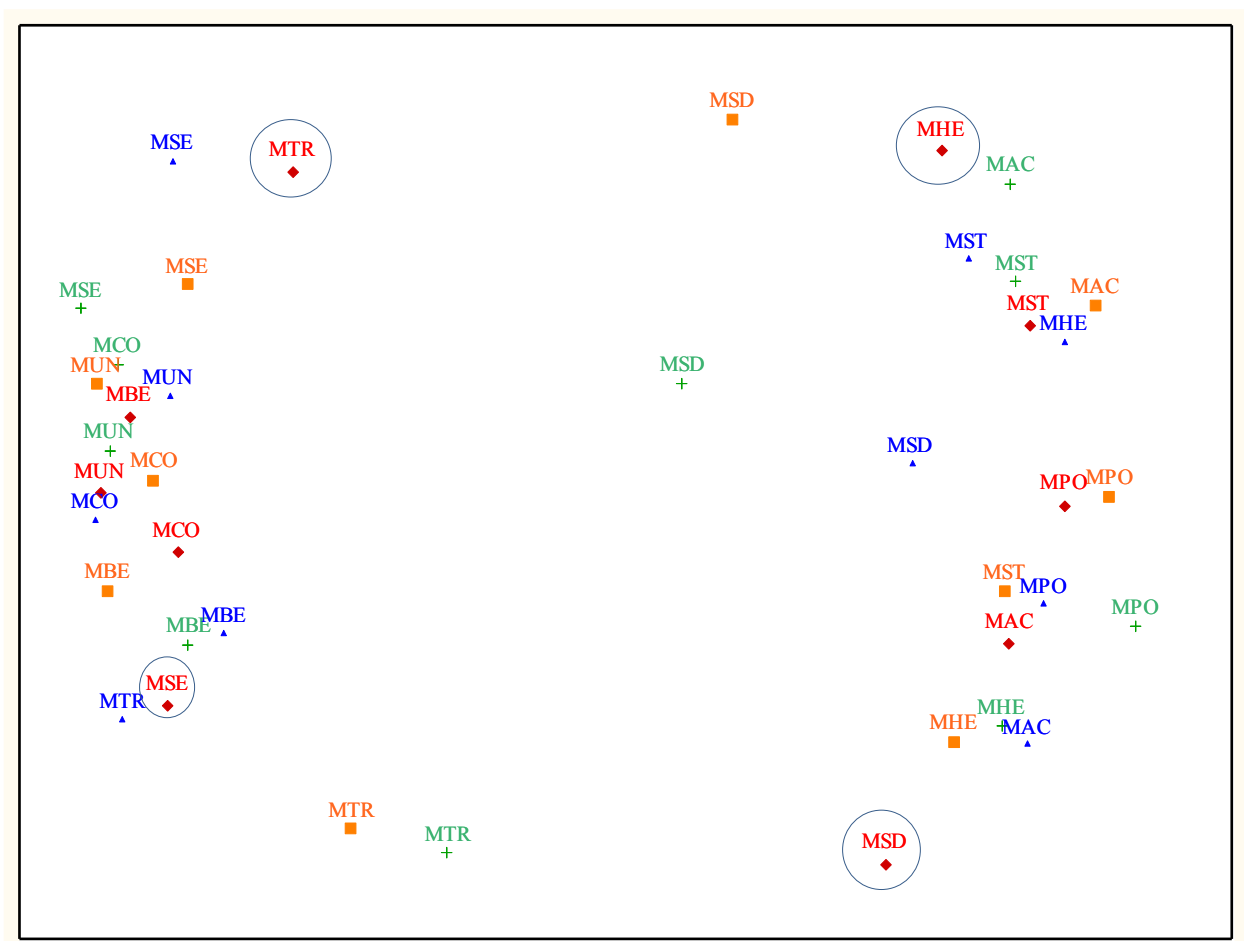
Blue = Management	Orange = Semi-skilled
Red = Skilled	Green = Basic Skilled

Figure 5.23. Integrated MDS reflecting on the lower level values of all levels of work.

In Figure 5.23, the circled values indicate those values that have moved their position in the values structure. Why the values changed their position for the skilled level of work does require some

additional investigation. As noted before, the skilled level of work has a large contingent of fist line supervisors, including informal leaders, for example, Artisans and their Assistants, in which case there is no formal supervisory relationship. In addition, this level of work also has a large contingent of young professionals in training or in some cases representative of professional positions, for example; Accountants, Chemists, Instrument Technicians, Human Resources Officers. In other words although not at management level, these are positions with authority based on the skills they have and their socio-economic status. In most organisations, the skilled level of work has largest cultural diversity and formal skill sets in the mining industry of all the levels of work. In order to confirm these two points with information from this study an analysis of the population group (race) composition and qualifications at the various levels of work is contained in Tables 5.15 and 5.16 respectively.

Table 5.15 - Analyses of Population Group per Level of Work

Level of Work	African	Indian	Coloured	White
Management	33	1	4	48
Skilled	184	2	76	254
Semi- Skilled	475	2	46	54
Basic Skilled	243	0	28	12
Total	**935**	**5**	**154**	**368**

Table 5.16 - Qualifications per Level of Work

Level of Work	No school	<10th Grade	10th or 11th Grade	Grade 12	Trade/other Certificates and Technicon Diplomas	BTech or Degree	Post Graduate Degree
Management	0	0	0	6	29	30	22
Skilled	0	21	36	143	284	24	8
Semi- Skilled	9	97	99	348	23	0	0
Basic Skilled	16	33	75	159	0	0	0
Total	**25**	**151**	**210**	**656**	**336**	**54**	**30**

The information in Tables 5.15 and 5.16 confirm the researcher's statement in the previous paragraph about the skilled level of work containing the most diverse cultural and skilled level of the workforce. The MDS's for the two major population groupings represented in the skilled level of work is shown in Figures 5.24 and 5.25. This confirms the MDS for the skilled level of work in Figure 5.19, in other words the data is not skewed by the numbers of a specific population group and indicate an actual movement in the typical value structure across the major populations (population in this case refer to race) groups at this level. The reason for this argument is vested in the Sagiv and Schwartz (1995) finding, that sampling fluctuation is an common cause of observed structural differences between sample specific configurations in value structures.
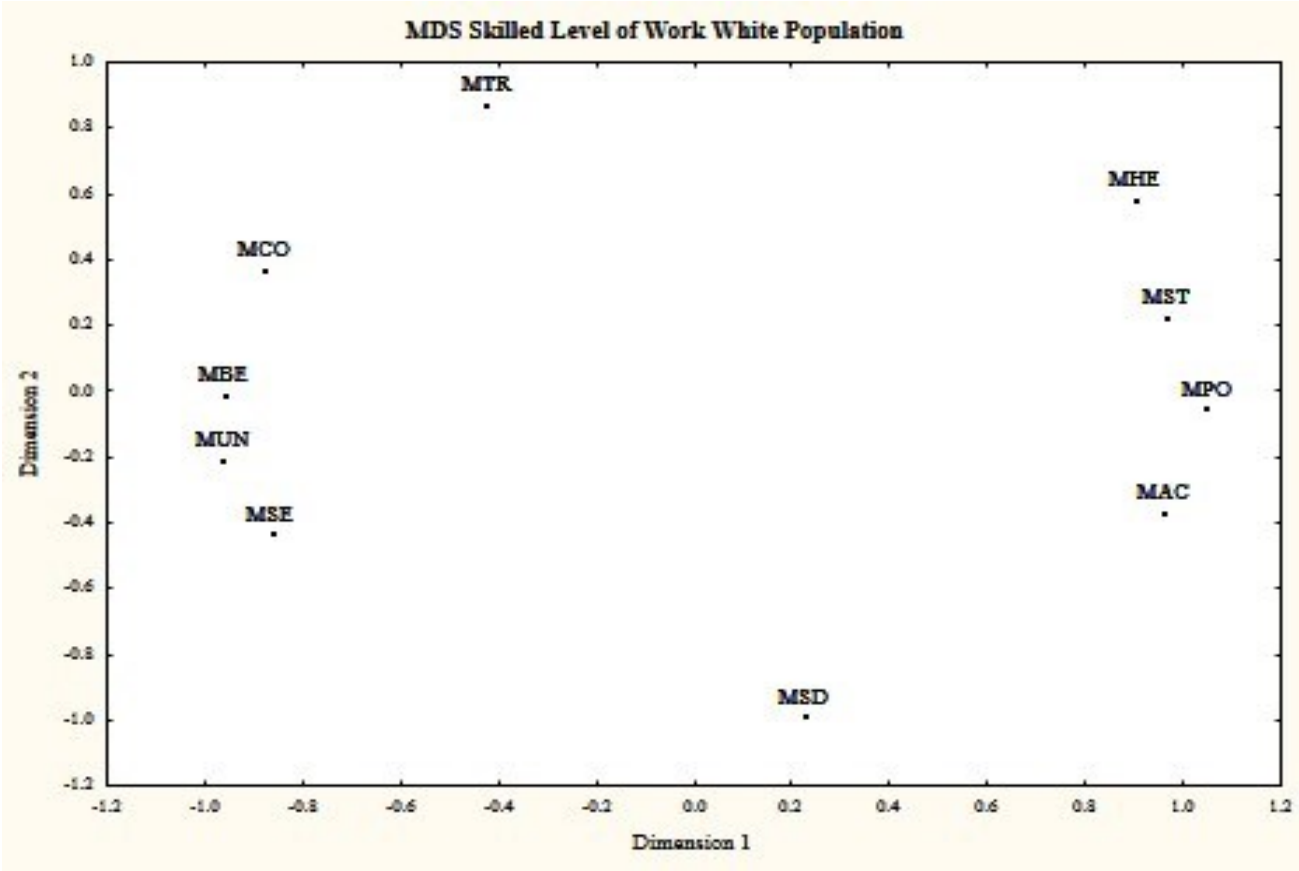
Figure 5.24. MDS Skilled level of work - White population
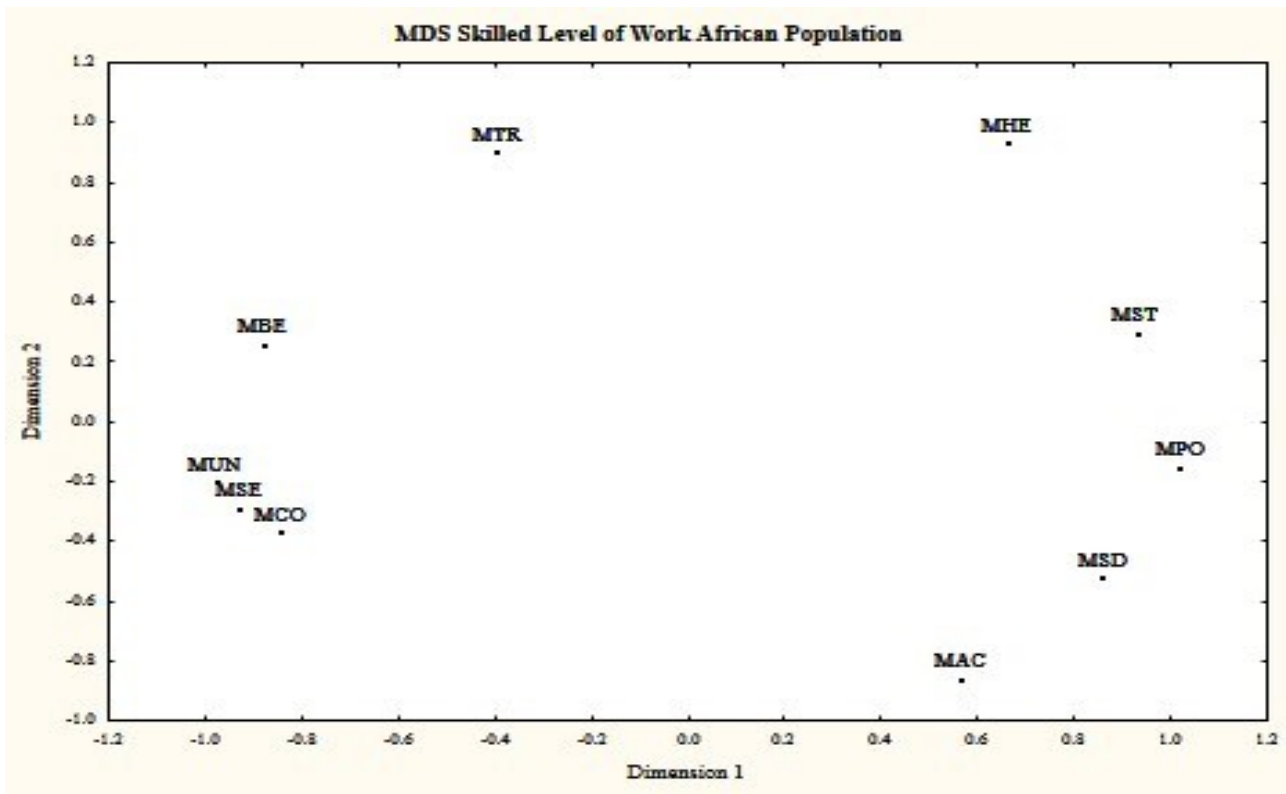
Figure 5.25. MDS Skilled level of work - African population

The MDS in Figure 5.25 provide the possibility to reflect on the MDS of the Schwartz et al. (2001) study as well, (Figure 3.1). Although some values moved in the circle according to the values theory (Figure 2.1), it is possible to identify eight distinct regions of the ten lower order value regions. The reader should note that the Schwartz et al. (2001) sample's MDS represents the national population and the differences might be because of the sample definitions, national versus mining. Notable, in Figure 5.18 and 5.19, is the similarities between the value structure of the two population groups (African and White), except for values that changed their adjacent places, the value structure of the MDS's are very similar, conformity on the left quadrants changed place while self-direction and achievement changed places in the bottom right hand quadrant. This confirm Laher (2013) postulation that race has become an artificial demarcation of South Africans.

5.5.4 Possible explanations for the move in the value structure based on the value priorities at the various levels of work

The answer to why values for the skilled level of work has moved, is probably found in the dynamic foundation of the universal value structure as postulated by Schwartz, (Figure 2.2). The reference to Figure 2.2 is important to ensure an understanding of how Figure 5.27 was adapted to reflect the

revised dynamic foundation of values for this study. In order to adapt Figure 2.2 to reflect the results of this study, Figure 5.26 superimpose the total samples' higher order values on the lower order values as shown in Figure 5.23.
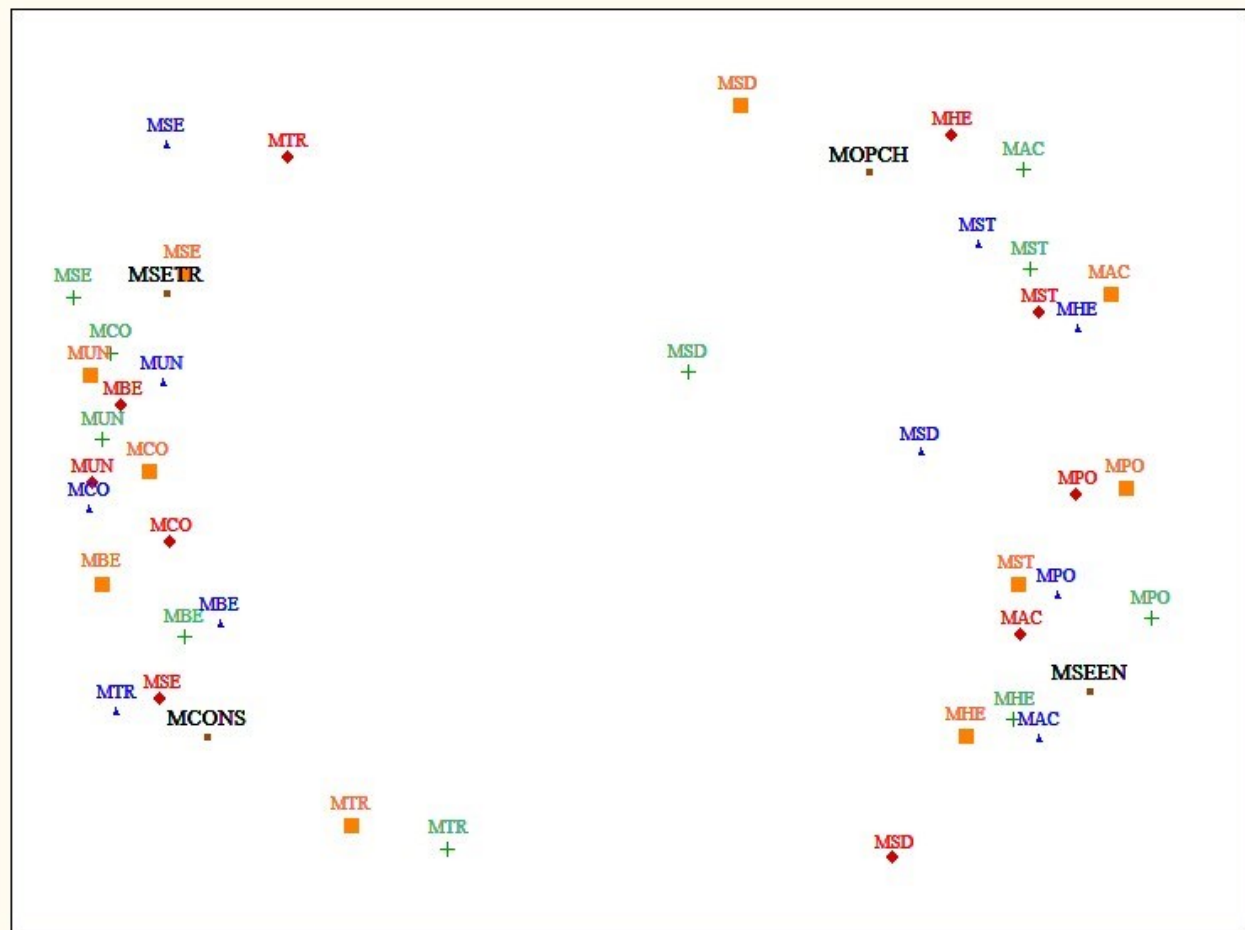
| Blue = Management | Orange = Semi-skilled |
| Red = Skilled | Green = Basic Skilled |

Figure 5.26. Integrated MDS of the lower and higher level values for all levels of work

The higher order values in Figure 5.26 are shown in black and in larger print than the lower order values reflected in colour, the same legend is applicable for the lower order values in Figure 5.23.

In the dynamic foundation of the value structure according to Schwartz's value theory, the pursuit of values on the left two squares in Figure 2.2 serves to deal with anxiety due to uncertainty in the social and physical world, and is considered as self-protective values. Individuals seek to avoid conflict (conformity) and to maintain the current order (tradition, security) or actively control threats

(power). Values in the right squares (hedonism, stimulation, self-direction, universalism, and benevolence) express anxiety free motivations and is considered as growth or self-expansive values (Schwartz, 2012).
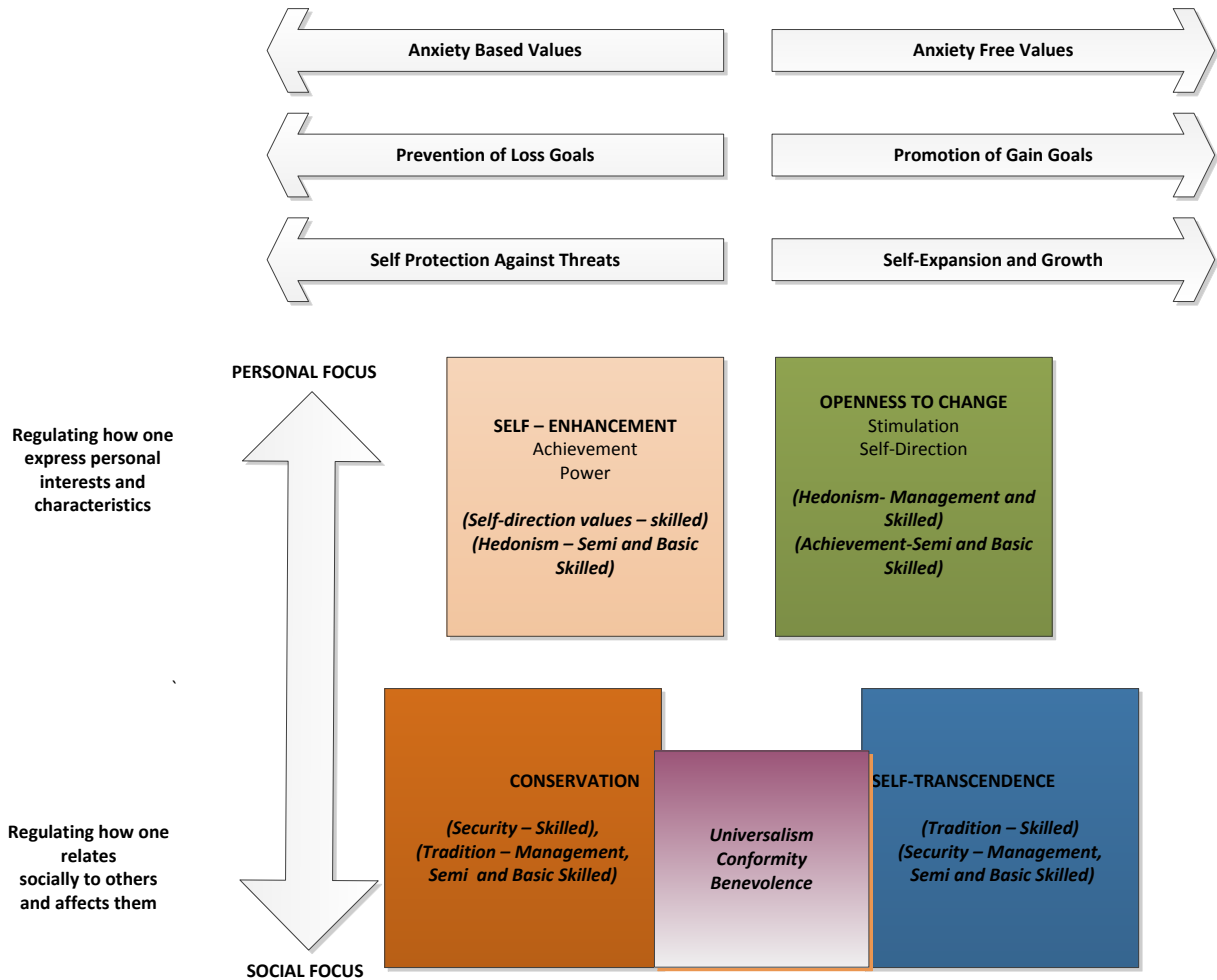
Figure 5.27. Revised dynamic foundation of the value structure for this study as adapted from Schwartz (2012).

In Figure 5.27, values that moved are indicated in bold and italic letters, with the level of work indicated next to it. In the case of this study based on Figure 5.27, the three values, universalism, conformity and benevolence share a region overlapping into both higher order values conservation and self-transcendence for all the levels of work. The importance of this is based on the fact that benevolence and universalism values are ranked first and second in importance amongst the ten values as it derives from the centrality of positive, co-operative social relations in the family, the

basis for initial and continued value acquisition (Schwartz, 2006). Conformity also promote harmonious social relationships (Schwartz, 2012). This is probably indicative of all the levels of work, working towards common goals and objectives as indicated in the definition of organisational hierarchy in Chapter 3.

Self-direction is normally associated with the higher order value openness to change. It is also an anxiety free value promoting the achievement or attainment of goals, to ensure personal growth and development. Self-direction has now moved to the higher value self-enhancement for the skilled level and is an anxiety based value (Figure 5.27 and Figure 2.2), which focus on the prevention of non-goal attainment or achieving (loss of) goals, and to protect the self against threats. The explanation for the movement is vested not only in self-direction values, but also in the general movement of security and self-direction values. In the case of the skilled level of work, security retained its position in the conservation higher order value, while the other three levels of work (management, semi and basic skilled) moved to the self-transcendence higher order value. It is strange, but security values have moved to become an anxiety free value for these levels of work as well, and in the skilled level the same happened with tradition values. It is possible that the management level do not perceive their security as being threatened, because of their education and status, while the semi and basic skilled levels do not feel threatened as their strength is in their in-group solidarity. However, it is once again notable that self-direction and security values have become adjacent values in all levels of work.

The reason why security and self-direction values are opposing values in the values theory, stems from the fact that security supports and focus on the status quo and self-direction fosters creative and independent thinking (Schwartz, 2012). Self-direction and security values are ranked the 3rd and 4th in importance after benevolence and universalism values (Schwartz, 2012). Security supports the first requirement of the three demands of human nature and social functioning, and self-direction the last two. The nature of the relationships between these two values are vested in the three demands of human nature and the requirements of social functioning according to (Schwartz, 2012), (1) values promote and preserve cooperative and supportive relations among primary group members. The critical focus of value transmission is to develop commitment to positive relations, identification with the group, and loyalty to its members. Note the context of the definition of organisational hierarchy as formulated in Chapter 3. (2) Individuals must be motivated to invest time and effort to

perform productive work, to solve problems that arise when working, and to generate new ideas and technical solutions. Also note the resemblance to the definition of values given by Jaques (1996) as described in the literature review. (3) It is socially functional to legitimize gratification of self-oriented needs and desires as long as it does not undermine group goals.

The 3rd most important value in the values structure is Self-direction, which the second and third basic functions of values without undermining the first (Schwartz, 2007, 2012). These values foster creativity, motivate innovation, and promote coping with challenges and it rarely threatens positive social relations. High self-direction values link to education, education was linked to the occupations one can strive for and higher occupations based on the complexity of decisionmaking in the literature review, Table 3.5. Therefore, positions at the management level will require high self-direction values, while work performed at the lower levels of work become more defined, routinized or procedurised will decrease this value in an organisational context at the various levels of work. Self-direction values are less important and conformity values more important in countries where the typical nuclear family is large (seven or more children). The reason for this is in order to maintain order, very large families need to enforce conforming behaviour rather than cultivating each member's unique interests and abilities (Laher, 2013). If the non-parametric data in Table 5.7 is considered together with Table 5.15, the difference in self-direction values between al the levels of work, except for semi and basic skilled levels of work, confirm the pure context of education, socio-economic status and the levels of decisionmaking as an argument in the literature for the observed varying lower self-direction values at the skilled, semi and basic skilled levels of work (Cheng & Furnham, 2012, Kohn & Schooler, 1983, Schwartz, 2007). It might also contribute to the fact that conformity values do not differ significantly between the skilled, semi and basic skilled levels of work, because high self-direction values undermine conformity and tradition values (Kohn & Schooler, 1983).

Security and conformity values are the fourth and fifth most important in the values structure, it promote harmonious social relations and serve the basic functions of values (Schwartz, 2012). These two values help individuals to avoid conflict and violation of group norms, normally acquired in response to demands and sanctions to avoid risks, control forbidden impulses, and restricting the self. The emphasis of these values is on maintaining the status quo conflicts with innovation in finding solutions for group tasks or activities (Schwartz, 2012). Table 5.7 show conformity values

to be significantly different between management and the rest of the levels of work. However, Figure 5.23 shows conformity values positioned closer to each other for all the levels of work. In addition, the only security value that is significantly different was between the skilled and semi-skilled levels of work, but in Figure 5.23, it actually shows that the distance in the MDS between the skilled level of work's security values and the rest of the levels of work are significant.

A closer study of Figures 5.23 and 5.26 reveals that the movement in hedonism values is not for the skilled level of work as observed in Table 5.9, but instead the value moved for the semi and basic skilled levels of work. Hedonism is about self-gratification and the movement of this value to become an anxiety-based value make sense in terms of the literature review. In a collective society (the majority of SA population is African) where all citizens are expected to be either equally poor or equally wealthy the mining industry could become targets of the African PHD (pull him down) syndrome (Shonhiwa, 2006). In other words, individual self-gratification is not socially acceptable, if the group cannot be happy or enjoy life, everybody must be equally happy or unhappy. This is also vested in some of the core aspects of the Ubuntu definition, none of us is greater than all of us, service to others in the spirit of harmony, interdependence, each one of us needs all of us (Mbigi, 2005). The pursuit of hedonism values does not threaten positive social relations, and the differences between the various levels of work as indicated in non-parametric and MDS analyses, might have little impact on the relationships between the various levels of work.

Achievement values are associated with both anxiety based and anxiety free values. Meeting social standards successfully may control anxiety and it may confirm the individual's sense of competence. Achievement values may reflect a compromise among the bases of value importance. On the positive side, these values motivate individuals to invest in-group tasks and legitimize self-enhancing behaviour as long as it contributes to group welfare. On the negative side, these values foster efforts to attain social approval that may disrupt harmonious social relations and interfere with group goal attainment (Schwartz, 2012). Note the position of achievement values in Figure 5.27, specifically for the semi and basic skilled levels of work. This value moved to become a growth value and probably also indicates possible conflicting relationships between the two higher and lower levels of work. The increased opportunities to acquire skills (education) and the associated positions they can strive for at this level have changed dramatically. This provides a possible argument for the change in the position of this value in the motivational continuum for the semi and basic skilled

level of work. In addition this group of employees are mainly African (Table 5.15) and not part of the out-group any longer, but the in-group as argued by Laher (2013), described in the literature review.

Finally, the skilled level of work also has the largest contingent of supervisory positions (Table 5.17). Although it is first line supervision, these positions are viewed by some as the most important leadership positions in the Mining and Manufacturing industry. In an unpublished commissioned research project by Du Plessis and Brits (2005) for De Beers Consolidated Mines, it was found that this level of supervision has the biggest impact on the attainment of direct business results, in the De Beers context, carats produced. The focus of this level is not strategic, but to direct and manage the defined resources at their disposal to attain the core deliverables of the organisation (note the word defined in relation to direct and manage, also in relation to complexity in decisionmaking (Table 3.5)). The largest scope of human resources, money and machines are managed by this level of supervisors. It is therefore argued that the impact of the skilled level of work's values both up and down the hierarchy of work, should have significant influence on the overall values in the organisation (this study and is not a generalisation). This level of work is often referred to in the mining industry as the no nonsense supervisors, because except in circumstances beyond their control, these supervisors must achieve their production or equipment availability targets per shift. This often results in controversial practices in leading sub-ordinates to ensure the attainment of operational targets. The previous statement is not a literature founded statement, but having worked extensively in the mining industry for a period of twelve years and consulting in same for the past eighteen years. It is based on studying the work, re-designing and restructuring of these businesses over that period. In Table 5.17, the sheer number of first line supervisors at the skilled level is shown. The management level is expected to have a high percentage of supervisors, because organisational hierarchies are pyramidal in nature, obviously, there would be smaller numbers and the focus would be similar but increasingly different as employees move up in the management hierarchy as explained in Chapter 3.

Table 5.17 - Supervisory and Non-supervisory Positions per Level of Work.

Level of Work	Management	Skilled	Semi-Skilled	Basic Skilled
# Supervisory positions	79	335	86	0
# Non-Supervisory positions	8	181	489	283
% of Supervisory positions	91	65	15	0
% of Non-Supervisory positions	9	35	85	100

5.6 Interpreting the differences in value priorities between the skilled and other levels of work using the dynamic foundation of the values theory

Value systems can change over time, particularly when situations arise that challenge established norms or result in a re-examination of value structures (Danis et al., 2011). In a number of emerging economies and transitional economies, this is precisely what transpires when previously accepted values and behaviours are challenged through processes of political, economic, and social change (Danis et al., 2011). Institutional transitions encompass a range of interconnected domains (e.g., political, social, economic), which collectively comprise a country's institutional environment (North, 1990). These institutional value transitions, affects about a third of the world's population, and continues to have a profound impact on people's lives and has irreversibly altered the relationship between people and their political, social, and economic institutions (De Melo, Denizer & Gelb, 1996, Peña-López, 2008).

The structural differences in the assigned value priorities between the various levels of work could be because of their social exposure in the different social environments, both in and outside the organisation. Consider the systematic differences between the different levels of work on the person-focused versus social-focused dimension as identified in figure 5.27. Value conflict on this dimension appears to be less intense amongst the management, semi and basic skilled levels of work. This may be due to less frequent and less intense experiences of conflict between values that focus on expressing personal versus social goals in the work environment, in relation to the skilled level

of work and the pressure on this level to achieve the direct controllable operational targets or objectives of the organisation.

Another important aspect of the findings in Figure 5.27 is the difference between the skilled level of work and more the semi and basic skilled than management level of work on the protection versus the growth dimension. The normal shift in the context of work from routine (lower skilled, semi and basic skilled) to non-routine work (higher-level skilled positions and management) between the various levels of work are especially relevant to the experience of conflict between protection and growth values, see Figure 5.27. The nature of work at the higher levels of work encourage creative and challenging thought to produce continuous improvement and change, to ensure the attainment of various objectives (values in the openness to change dimension). Therefore the higher levels of work encourage pursuit of growth values, but Maslow (1959) and Higgins (1997) indicated that avoiding threat and maintaining security is one of the primary goals of humans and the core purpose of protection values. The importance of this value means that employees at the higher levels of work focus on growth values, but they are therefore also more likely to weigh growth values against the potential threat to protection values. Therefore, employees at the management and skilled level of work will experience higher frequencies of conflict between growth and protection values. This provides a plausible explanation why self-direction values for the skilled level of work have become a protection value.

In addition, the fact that security and power values have become opposing values is of some concern. The movement of security values is away from power values, because as indicated earlier the position of power values behind achievement values is not abnormal. The movement of security values to a growth, anxiety free value for the management level is however not normal. Security values are related to social stability and usually acquired in response to demands and sanctions to avoid risks with social stability (Schwartz, 2012). The position of security values at the management level of work in the value structure appears to be incorrect, as the instability in society and in the work place currently, should actually cause this value to be an anxiety based value. Another plausible explanation, based on the argument made in the previous paragraph, could be that increased socio economic status and position in the organisational hierarchy, creates a perception of irrevocable power and that social instability is irrelevant or not that important, almost complacency to deal with the reality of social instability in the workplace and societies the businesses function.

However, the shift in security values in relation to power values is probably more related to other factors that might have had an influence on the structural deviations amongst the independent samples of the total sample, discussed in Section 5.6.2.

The reason for the movement of security in relation to power values at the semi and basic skilled level of work is also not clear. The following arguments maybe considered as possible reasons:

- The move in achievement values from threat, anxiety based value to a growth, anxiety free value, has probably more to do with the movement of the security values and perceived social stability by these two levels of work, because;

- Pressure from powerful unions on mining organisations might have established a feeling of power, which is further enhanced by the fact that the government supports the unions almost vigorously as part of their tri-partheid alliance. This perception of increased power and a similar complacency that the government and unions will deal with problems in relation to social instability or inequality, might explain why security values became non-anxiety based values.

- Pursuing power values may harm or exploit others and damage social relations. Still, they have some importance because power values help to motivate individuals to work for group interests (Schwartz, 2012). In this case, the semi and basic skilled levels or work are perceived as in-groups and the in-groups interest might not be work focussed, but in this case it could be to create forced improvement in socio-economic status and position. This is probably the most plausible interpretation considering the movement of power values in relation to the movement in achievement values, discussed earlier in this chapter.

In general, the MDS's, especially Figure 5.23, indicates distance differences in the value priorities between the skilled and management level is not as big as that between the semi and basic skilled levels of work. The skilled level of work's value priority differences specifically in terms of security and self-direction values probably stems from the following;

- This level of work has to ensure that work is performed in time, and on target. Employees at this level do this through the effective management of large groups of subordinates and as a result the acculturation of values between the two majority population groups have already taken place to a large extent at this level. Although changes in culture typically occur incrementally over centuries, it is possible that value systems may change within a generation due to sudden, extreme changes in life or work circumstances (Danis et al., 2011). Before 1994, Africans probably occupied fewer positions at this level, and moving into this layer required the rapid adoption of the dominant majority's institutional values in order to manage effectively. This acculturation could not come from one group only, but the fact that it is very similar for the majority population groups is probably indicative of mutual acculturation, that is if Figure 2.1 is considered together with Figures 5.24 and 5.25.

The context and the speed at which this level's employees needed to acculturate are illustrated in the following examples. In an unpublished qualitative study for the National Parks Board in the northern regions of the Kruger National Park where a Camp Manager of the coloured population group was appointed, the researcher was requested to investigate a major reduction in quality of service and continuous insubordination. In principle, the finding was that the Manager's authority was not accepted because he was not part of the majority culture, African. The authority of the African group stemmed from social position in the ethnic grouping or group of that area, and the manager being coloured was neither white nor black and did not ascribe to the majority's values. A white manager was more acceptable for the majority of employees at that stage, because they knew that a white person would be different, but was not sure how the values the coloured manager differed from theirs.

In another unpublished qualitative study by the researcher in 1990 at Palabora Mining Company, some of the African supervisors at the skilled level of where victimised and could not use their supervisory authority, because they did not represent any position in the African society in Phalaborwa at the time. They often feared for their life when they acted against non-performing employees or when not attaining their production targets. The threat was very specific and real "you take action, we (the group being supervised and the larger group

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of employees at the lower levels, the in-group) will burn your house tonight" this automatically disempowered those supervisors at the skilled level of work at that time. This has often put them in a conflicting position between management and the semi and basic skilled levels of work.

These two examples are probably indicative of extreme life and work circumstances that forced employees at this level of work to adopt certain values quicker than others and could be an confirmation of Danis et al. (2011) findings mentioned above.

- The most important finding of this study is that security and self-direction values have become adjacent values for all levels of work, with very specific differences between the skilled and other levels of work. Self-direction has move to become an anxiety-based value for the skilled level of work, together with security, which is normally an anxiety-based value. In the case of the management, semi and basic skilled levels, security has moved to self-direction values, becoming an anxiety free value. It is important to remember that anxiety based values serves to deal with anxiety due to uncertainty in the social and physical world, and is considered as self-protective values (Schwartz, 2012).

This movement is probably the result of the fact that both management and the semi and basic skilled levels have accepted that the skilled level of work must take responsibility to act with the lower levels of work, and deal with the demands of management. In other words this level of work has become the buffer between management and the lower levels of work, forcing self-direction values to become an anxiety based value. This is confirmed by the move of achievement values of the semi-skilled level to an anxiety free value. This could be indicative of the possible friction between management and the lower levels of work, as achievement values foster efforts to attain social approval that may disrupt harmonious social relations and interfere with group goal attainment (Schwartz, 2012).

In other words, the skilled level of work has to deal with demands of management and the friction between management and the lower levels of work, thus self-direction has become an anxiety-based value for the skilled level of work. Employees at this level of work cannot afford to change anything as it creates tension that they need to deal with. Tension impacts

directly on production results and threatens the stability this level of work has to nurture. The impact on long-term continuous business improvement and change programs, and internal relationships could be severely affected because of this. Raising the question whether the mining industry in South Africa will be able to whether the storms coming their way.

- A further answer lies in the fact that security values serve the first principle of relationships and self-direction the last two (Schwartz, 2006), as mentioned earlier in this chapter. The position of these values are very differently positioned in the values circumplex, including the movement of anxiety based and anxiety free values, which could hold serious consequences for the mining industry. Because of this, it could destabilise one of the core purposes of values, which is the promotion and preservation of supportive relations among members of groups. It is certainly possible that it can destabilise aspects related to the definition of organisational hierarchy where people work together towards a common goal or objective. It could also create a misalignment between what the Management level has adopted as organisational values, the business strategy and what they have decided need to be done in order to achieve the organisational objectives, versus what the two lower levels of work actually does.

The analyses of data provided that there are indeed significant differences in the value structures between the various levels of work, but even when values appear to be congruent according to the non-parametric analysis, due to the changes in the order of the value priorities, it indicated possible conflicting value priorities for some values between the various levels of work.

The value structure of the skilled level of work might represent a fully acculturated context of African and Western values, and could be a hypothesized future value structure of a fully acculturated South Africa or Mining Industry. The differences in value priorities at the various levels of work are probably a reflection of the social differences amongst the typical layers of   society (classes) in South Africa, and that it is indeed a country in transition.

The group solidarity at the lowest level in business and society possibly threatens business and social stability if the socio-economic status of this group is not addressed in a goal directed approach in the medium to long term.

5.6.1 Practical implications and possible use in the mining industry

The study set out to identify differences in value priorities between the various levels of work, with the intention to recognise the values that these mining organisations can successfully integrate as part of their core values and overall business culture. This study highlighted several important aspects related to the values theory and value priorities at the various levels of work;

- The principles of the values theory, might not fully explain the differences in the value priorities where there was a significant change in the order of values in the value structure in a study with multiple independent variables, like levels of work in this study. Where differences in values between the levels of work were not significantly different, according to the non-parametric analyses, and did not necessarily reflect on actual value congruence, it raised concern whether the analyses is valid in isolation. In other words, the opposing and adjacent values principles as formulated by the values theory (Sagiv & Schwartz, 1995, Schwartz, 1992, 1994, 2006, 2012) might not provide a full explanation for the move and change in value priorities across the levels of work. However in this study, the full context of the values theory as considered within the dynamic foundation of the value structure was used to explain most of the moves in the value priorities between the various levels of work. Schwartz et al. (2012) highlighted this approach, using the central assumption of the original theory, that values form a circular motivational continuum is mostly ignored by researchers using Schwartz's values theory.

- The skilled level of work's values structure is probably representative of an almost completely acculturated Western and African value structure in the mining industry. The statement of Laher (2013) in the literature review comes to mind, research is indicating that separating South Africans according to race is an artificial demarcation, almost as artificial as assuming that all individuals from African descent are collectivist in orientation. It is

postulated that this value structure represents a more ideal value structure for the business to create an inclusive values base. Therefore, the values of the management, semi and basic skilled levels of work should be aligned with certain values of this level of work, to adopt a possible fully integrated Western and African values system. Obviously, not without considering the context of the meaning of values in the values structure.

- According to Nohria et al. (2008), the need to bond has the greatest effect on employee commitment. Schwartz (2006) linked the need to bond to benevolence, universalism and conformity values. In the case of this study according to the results presented in Figures 5.26 and 5.27, the three values, universalism, conformity and benevolence share a region overlapping into both higher order values conservation and self-transcendence for all the levels of work. The importance of this is because benevolence and universalism values are ranked first and second in importance amongst the ten values as it derives from the centrality of positive, co-operative social relations in the family, the basis for initial and continued value acquisition (Schwartz, 2006). Conformity together with benevolence and universalism as adjacent values also promotes harmonious social relationships (Schwartz, 2012). This is probably indicative of all the levels of work, working towards common goals and objectives as indicated in the definition of organisational hierarchy in Chapter 3. These three values might be regarded as the values representing the glue that holds together the fragile relationships between the various levels of work (Schein, 2010). Programs to enhance these values over time can unfortunately not be considered without considering the context of the dynamic structure of the values theory. In other words, improving socio-economic status and the level of education will strengthen a number of values, which may result in these three values strengthening over time. The timeframe of changing these values, as indicated in the literature review, might only be visible in the next generation of workers in South Africa.

The results of the study illustrated the complexities of working and managing in an organisation with a cultural diverse workforce in a developing country. The change in the value structures at the various levels of work raised the following possible concerns/threats for the future of the mining industry;

- The pressure on the skilled level of work, currently possibly acting as "mediators" between the management, and the semi and basic skilled levels of work, beside their normal focus of doing and ensuring that work is done, holds the threat of creating intolerable pressure at this level of work. This could lead to major conflict within these organisations as the skilled level of work aligns work teams with the business objectives within these mining organisations.

- The skilled level of work has to deal with demands of management and the friction between management and the lower levels of work, thus self-direction has become an anxiety-based value for the skilled level of work. Employees at this level of work cannot afford to change anything, as it creates tension that they need to deal with, else it will directly influence the production output/results that they need to attain according to management's objectives. Long-term continuous business improvement and change programs can dramatically affected because of the risk that change hold for this level of work. The Executive Committee of Petra diamonds confirmed that the skilled level of work represents a major barrier for the organisations change and improvement programs.

- The strong in-group solidarity at the semi and basic skilled levels of work do pose a threat to these organisations. The large gap in socio-economic status between these levels and the management group, is not supportive of mutual value congruence and inter-group relationships where people have to work together to achieve common organisational objectives. This was highlighted in the results as follows; Pursuing power values may harm or exploit others and damage social relations. Still, they have some importance because power values help to motivate individuals to work for group interests (Schwartz, 2012). The semi and basic skilled levels of work are perceived as in-groups and the in-groups interest might not be work focussed, but in this case, it could be to create forced improvement in socio-economic status and position.

Addressing these possible threats will require a change in the opportunities available for the development of employees and the associated change in business processes, and the application of technology. This creates a dilemma for these organisations, as changes in technology normally require more developed workforces, but smaller numbers of employees. However, this remains one

of the more plausible ways to uplift the socio-economic status of employees through training and the associated movement in the organisational hierarchy (Cheng & Furnham, 2012). The impact of socio-economic status and education on values has been highlighted throughout the various chapters of this study and there is no need to highlight it again.

The development programmes of Managers should ensure a better understanding of the needs, values and the nature of cultural diversity at the various levels of work and in South Africa. In addition, all employees should be made aware of values and the differences in values, not only between cultures, but also between the levels of work and business values. If employees understand the organisational values and the diversity of values within the workforce, it could create greater tolerance and value congruence between the levels of work, groups, ethnic groupings, etc. This point is highlighted by (Fischer & Schwartz, 2011) when they indicate that cultural differences give rise to misunderstanding and conflict, because many intercultural conflicts or misunderstandings involve situations where either (i) the same or similar values map onto different attitudes and behaviours or (ii) particular attitudes and behaviours are mapped onto different values. What is individually perceived as acceptable depends on the societal and cultural context of that individual (Fischer & Schwartz, 2011). Intergroup conflict may arise and be fuelled both by societal differences in the institutional practices and policies that express latent cultural value orientations and by the behavioural expressions of basic individual values (Fischer & Schwartz, 2011).

The focus and scope of training should be very different for frontline Supervisors at the skilled level of work, because their roles require specialised management skills according to this study. These positions are true leadership positions, and should be recognised and developed in that context. The focus of leadership and management development is and has always been at the Management level of work. If assigned the correct authority and training, incumbents in these roles will be empowered to deal with both managing the large workforces under their control, and the delivery expectations of management. This was highlighted by the unpublished qualitative research performed by Du Plessis and Brits (2005) for De Beers Consolidated Mines on the role of frontline supervisors. The study of Meglino et al. (1989) also comes to mind, finding that individual employees were more satisfied and committed to the organisation when their values were congruent with that of their supervisors. Congruence effects for job satisfaction and organisational commitment were very evident at the supervisory level; that is, satisfaction and commitment were higher when production

workers' values were closer to those of their supervisors. Because of congruence, highly satisfied and committed workers will apart from any interpersonal effects, hold value rankings closer to those of their supervisors. If the supervisors did hold such a similar rank ordering, the value responses of highly satisfied workers would normally be closer to this average supervisory response than would the value responses of workers low in satisfaction (Meglino et al., 1989). This would also be true for workers high and low in organisational commitment.

The performance of managers should not only be measured on the bottom line, but also to what extent there is value congruence between the core values of the business and that of the employees in that business. This also goes in hand with the fact that value led business are more successful than none value led businesses, as indicated in the literature review (Sullivan et al., 2002).

The communication of organisational values, continuous referencing and the living of organistional values will create an awareness and systematic acculturation to some of the business values over time. Nohria et al. (2008) indicated that meeting the drive to comprehend is closely linked with employee engagement. While Schwartz (2006) indicated that values transform drives into desirable goals that are used in conscious planning and decisionmaking, and Schwartz linked the need to comprehend to universalism, self-direction, stimulation and hedonism values. Communication problems in organisations with diverse workforces are common and often create the potential for increased organisational conflict, and a high degree of value differences (Hopkins & Sterkel-Powell, 1994). The reason why it is important to communicate values is clear from the literature, individuals form part of multiple social dimensions and over time construct life stories that both shape and reflect the social structures of which they are part or have been part of during their life course (Kohn, 1989). One of the major influences of an organisation's culture is the organisation's system of values. If widely held throughout the organisation, values will eventually affect the way customers are perceived and treated, the way employees, and their contributions are viewed and rewarded, and the way in which the future is anticipated and managed (Boxx et al., 1991). Rokeach (1979) indicated that the extent of involvement an individual has with an organisation, their perceptions of that organisation, and the acceptance of the individual into the organisation, will influence the way in which they will identify with the values of that organisation. The system of values plays a critical role in the successes of an organisation (Boxx et al., 1991).

Most Human Resources Managers will indicate that the above is not necessarily new thinking and that progressive organisations have tried to implement some of these recommendations without great success. Qualifying a motivation to invest money in any program is with scientific proof or numbers showing return on investment, soft issues is seldom convertible to pure rands and cents. Agreement to implement "Human Resources" related programs, like values systems, are therefore often reluctant, with leaders not being convinced and fully committed. As a result, these programs often fail before they are implemented. Maybe the results of this study will enable Human Resources Managers to motivate the need for extensive work on values in organisations to establish an all-inclusive values system and culture.

5.6.2 Limitations of the study

Sagiv and Schwartz (1995) claim that sampling fluctuation is often an important cause of observed structural differences between sample specific configurations in value structures. The Management and skilled samples, according to the literature should represent a higher level of development opposed to the semi and basic skilled level of work, the aforementioned deviated less from the overall values structure as postulated by Schwartz. Methodological factors or limitations might have contributed to some of the deviations recorded in the value structures at the various levels of work. The following possible shortcomings in this study are considered as possible contributing factors to these deviations;

- Although the independent sample of each level of work represents a heterogeneous context of employees, employees of a specific population group, or qualification, etc. could be overrepresented. It is therefore possible that some of these variables will have influenced the overall configuration of the value structure for some levels of work.

- The meaning of particular value items in the PVQ differs across groups (Sagiv & Schwartz, 1995). Although the PVQ was specifically designed to replace the abstract terms used in the SVS (Schwartz et al., 2001), it remains possible that the precise understanding of items can differ to some extent given the cultural diversity of the South African population.

- The instrument was only available in the English language and small shifts in the meaning of items due to language differences are possible. In a personal communication with Prof

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Shalom Schwartz, this was emphasised and common knowledge in the design and application of Psychometric assessments.

- The exposure of some participants to numeric rating scales might be limited. It is therefore possible that some scored their value priorities less accurately.

- The cultural context to which employees at the higher levels of work have been exposed or belong, for example education and socio-economic status, may promote more fully articulated representations of the values domain in relation to those employees who have not.

- The various levels of work represent very different social groupings, which may actually differ somewhat in the underlying conflicts and congruencies characterising their value systems.

- The number of management participants, required the researcher to change the initial research design in the formulation of the levels of work. The fact that the Paterson D, E and F band grades have been clustered together as the management level resulted in the inclusion of positions from junior middle management to the directors of these organisations. Considering the large differences in the type of decisions, scope of skills and knowledge, and socio-economic status, it is possible that it influenced the overall values structure of this level of work.

Considering the above, it is reasonable to assume that some difference in the organisation of values could have contributed to the observed deviations in the value structures at the various levels of work.

5.6.3 Concluding thoughts and recommendations for future research.

Unlike other studies, this study focussed extensively on Schwartz's value structure as a motivational continuum in order to explain the differences in value priorities between the four levels of work. According to Schwartz et al. (2012) the central assumption of the original theory, that values form

a circular motivational continuum is largely ignored by most research performed using Schwartz's values theory.

The mining industry have a unique set of shared and opposing values at the various levels of work in relation to Schwartz's value theory as postulated in Chapter 3. The purpose of this study was not to study the universal nature of the values theory, but the findings do raise concerns about the application and the nature of the theory in the developing and third world countries. The interrelationship between values at the various levels of work may form part of a future research project. As anticipated and indicated in the literature review, values and levels of work are complex integrated constructs, complex and almost fluid in its interrelationship. This study has achieved its objective, through the non-parametric analyses it was possible to conclude that significant differences in the value priorities do exist between the various levels of work, therefore rejecting the null hypothesis and confirming the six alternative hypotheses. The investigation of the differences in the value priorities amongst the ten lower order values and levels of work with the non-parametric analyses, highlighted that some values with no significant difference, for example achievement, was not necessarily indicative of value congruence amongst the levels of work. This and the fact that this study has multiple independent variables required an extension of the non-parametric analyses to investigate the movement in the values structures of the various levels work. These analyses also assisted to confirm the hypotheses, but also provided understanding of why the value structures changed for the various levels of work. This study provides a foundation for more detailed research into the interrelationships between the value structures of the various levels of work. Understanding the reason for the differences in the values structures across the various levels of work in more detail will only be possible when a more complete picture of the motivational dynamics that underlie and organise the circle of values in the South African Mining Industry is established.

This understanding might be only be possible when using Schwartz's refined values theory to answer the questions raised or hypothesised as reasons for differences in the value structures across the various levels of work. The publication of the refined theory was unfortunately after data collection commenced and not considered during the initial research design. Schwartz et al. (2012) expanded the initial theory of ten values into a set of 19 meaningful conceptually distinct values, intended to provide greater precision of prediction and explanation for a diverse set of attitudes and beliefs than the original theory (Schwartz et al., 2012). The revised theory revealed a stable ordering of the 19

values around the circular continuum, which is consistent with the motivational order of the original theory. This provides supporting evidence for the circular motivational continuum and implies that various ways of partitioning the circle are legitimate (Schwartz et al., 2012). In future research, when the basis of the theory is considered (like in this study), that values form a continuum, researchers will be able to choose the number and sets of values into which to partition the continuum according to the aims of their research. The revised theory supports the MDS partitioning into 19, or 10, or four, or even two (e.g., growth vs. self-protection) regions, creating the possibility to distinguish between various levels of abstraction within a motivational hierarchy. Researchers will be able to test hypotheses with variable degrees of precision on the different levels of motivational orientation that the theory provides. In general, the revised theory provides for a more detailed partitioning of values that are likely to produce a more precise understanding and prediction of the relations between values and other variables (Schwartz et al., 2012). It might therefore be possible to use the refined theory in a similar study to provide more detail than with the original theory, as used in this study, about the motivational dynamics that underlie and organise the circle of values in the South African Mining Industry.

It is clear from this study that there is opportunity to expand the theory to provide a theoretical base to understand the complicated interrelationships between the value structures at the various levels of work in organisations, especially in developing countries. In addition, research with the revised PVQ might provide a better understanding of the universal application of the values theory across nations, countries, societies and groups.

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APPENDIX 1. BIOGRAPHICAL INFORMATION

Name of Petra operation where you are employed?

_____

What is your current job grade?

_____

For the following questions please tick/mark the appropriate field.

1. I supervise other employees?

☐ Yes

☐ No

2. In which discipline or functional area do you work?

☐ Mining Production

☐ Engineering

☐ Ore Processing/Production after the mining process

☐ Financial

☐ Human Resources

☐ Communications/Marketing

☐ Other Services Function not listed

☐ Other Technical Functions not listed

3. Formal schooling information:

☐ I did not attend school

☐ 9th grade or less

☐ 10 or 11th grade

☐ Completed grade 12

☐ Some college or university, but did not complete studies

☐ Trade Certificate, other Certificates or Diplomas

☐ Bachelor's degree (BTech or University degree)

☐ Post-graduate degree

4. Please, indicate your age on the applicable age category.

☐ 16-24

☐ 25-29

☐ 30-34

☐ 35-39

☐ 40-44

☐ 45-49

☐ 50-54

☐ 55-59

☐ 60-65

☐ Older than 65

5. Please, indicate the population group you belong to, this reflects Statistics South Africa's population groupings.

☐ African

☐ Coloured

☐ Indian/Asian

☐ White

APPENDIX 2. PORTRAITS VALUE QUESTIONNAIRE – MALE VERSION

Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Put an X in the box to the right that shows how much the person in the description is like you.

HOW MUCH LIKE YOU IS THIS PERSON?

	Very much like me	like me	some-what like me	a little like me	not like me	not like me at all
1. Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.	☐	☐	☐	☐	☐	☐
2. It is important to him to be rich. He wants to have a lot of money and expensive things.	☐	☐	☐	☐	☐	☐
3. He thinks it is important that every person in the world be treated equally. He believes everyone should have equal opportunities in life.	☐	☐	☐	☐	☐	☐
4. It's very important to him to show his abilities. He wants people to admire what he does.	☐	☐	☐	☐	☐	☐
5. It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.	☐	☐	☐	☐	☐	☐
6. He thinks it is important to do lots of different things in life. He always looks for new things to try.	☐	☐	☐	☐	☐	☐
7. He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching.	☐	☐	☐	☐	☐	☐
8. It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them.	☐	☐	☐	☐	☐	☐
9. He thinks it's important **not** to ask for more than what you have. He believes that people should be satisfied with what they have.	☐	☐	☐	☐	☐	☐
10. He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	☐	☐	☐	☐	☐	☐
11. It is important to him to make his own decisions about what he does. He likes to be free to plan and to choose his activities for himself.	☐	☐	☐	☐	☐	☐
12. It's very important to him to help the people around him. He wants to care for their well-being.	☐	☐	☐	☐	☐	☐

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	Very much like me	like me	some-what like me	a little like me	not like me	not like me at all
13. Being very successful is important to him. He likes to impress other people.	☐	☐	☐	☐	☐	☐
14. It is very important to him that his country be safe. He thinks the state must be on watch against threats from within and without.	☐	☐	☐	☐	☐	☐
15. He likes to take risks. He is always looking for adventures.	☐	☐	☐	☐	☐	☐
16. It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.	☐	☐	☐	☐	☐	☐
17. It is important to him to be in charge and tell others what to do. He wants people to do what he says.	☐	☐	☐	☐	☐	☐
18. It is important to him to be loyal to his friends. He wants to devote himself to people close to him.	☐	☐	☐	☐	☐	☐
19. He strongly believes that people should care for nature. Looking after the environment is important to him.	☐	☐	☐	☐	☐	☐
20. Religious belief is important to him. He tries hard to do what his religion requires.	☐	☐	☐	☐	☐	☐
21. It is important to him that things be organized and clean. He really does **not** like things to be a mess.	☐	☐	☐	☐	☐	☐
22. He thinks it's important to be interested in things. He likes to be curious and to try to understand all sorts of things.	☐	☐	☐	☐	☐	☐
23. He believes all the worlds' people should live in harmony. Promoting peace among all groups in the world is important to him.	☐	☐	☐	☐	☐	☐
24. He thinks it is important to be ambitious. He wants to show how capable he is.	☐	☐	☐	☐	☐	☐
25. He thinks it is best to do things in traditional ways. It is important to him to keep up the customs he has learned.	☐	☐	☐	☐	☐	☐
26. Enjoying life's pleasures is important to him. He likes to 'spoil' himself.	☐	☐	☐	☐	☐	☐

	Very much like me	like me	some-what like me	a little like me	not like me	not like me at all
27. It is important to him to respond to the needs of others. He tries to support those he knows.	☐	☐	☐	☐	☐	☐
28. He believes he should always show respect to his parents and to older people. It is important to him to be obedient.	☐	☐	☐	☐	☐	☐
29. He wants everyone to be treated justly, even people he doesn't know. It is important to him to protect the weak in society.	☐	☐	☐	☐	☐	☐
30. He likes surprises. It is important to him to have an exciting life.	☐	☐	☐	☐	☐	☐
31. He tries hard to avoid getting sick. Staying healthy is very important to him.	☐	☐	☐	☐	☐	☐
32. Getting ahead in life is important to him. He strives to do better than others.	☐	☐	☐	☐	☐	☐
33. Forgiving people who have hurt him is important to him. He tries to see what is good in them and not to hold a grudge.	☐	☐	☐	☐	☐	☐
34. It is important to him to be independent. He likes to rely on himself.	☐	☐	☐	☐	☐	☐
35. Having a stable government is important to him. He is concerned that the social order be protected.	☐	☐	☐	☐	☐	☐
36. It is important to him to be polite to other people all the time. He tries never to disturb or irritate others.	☐	☐	☐	☐	☐	☐
37. He really wants to enjoy life. Having a good time is very important to him.	☐	☐	☐	☐	☐	☐
38. It is important to him to be humble and modest. He tries not to draw attention to himself.	☐	☐	☐	☐	☐	☐
39. He always wants to be the one who makes the decisions. He likes to be the leader.	☐	☐	☐	☐	☐	☐
40. It is important to him to adapt to nature and to fit into it. He believes that people should not change nature.	☐	☐	☐	☐	☐	☐

ABSTRACT

Keywords: *values, values priorities, value structure, Schwartz's values theory, values continuum, levels of work, decisionmaking, organisational hierarchy, non-parametric analysis, multi-dimensional scaling.*

Social and business culture are integrated constructs that determine how organisations function as a subsystem of the larger society in which it provides outputs or services (Katz & Kahn, 1978). In South Africa most organisations, including Mining organisations, are still conceptualised and structured in a Western/Eurocentric mould (Van der Wal & Ramotsehoa, 2001). The culture of organisations is dominated by these values (Du Plessis, 2012) and the fact that the largest proportion of the population/workforce is neither European nor American, but African, is largely ignored (Xiaoxing et al., 2008). In practice many employees cannot relate to these values and little congruence exists between organisational values and goals, and those of the general workforce (Du Plessis, 2012).

Values are at the heart of culture and influence most, if not all motivated behaviour (Schwartz, 2006). Individuals function across multiple domains and over time to construct life stories that both shape and reflect the social structures of which they are part or have been part of during their life course (Kohn, 1989). The context of an individual's life course facilitates values acquisition, which enables individuals to function in organisations where work occurs in lower or higher degrees of complexity, people communicate, and have access to each other, informed by the business/functional objectives of the organisation to perform a pattern of activities at incoherent levels of complexity, separated into a serious of steps or levels of work called organisational hierarchy.

Using a non-experimental design and a convenience sampling approach to collect data, the data was analysed employing a broad scope of descriptive and inferential statistics, including Confirmatory Factor Analysis and Multi-dimensional Scaling. The existing theory on values as formulated by Schwartz was utilised to study value priorities at the various levels of work in the South African Mining Industry. The non-parametric analyses provided clear indication that significant differences in value priorities do exist between the various levels of work. Multiple independent variables, levels of work, required an extension of the non-parametric analyses to investigate the movement in the

values priorities of the levels of work. These analyses assisted to confirm the hypotheses, but also provided an understanding of why the value priorities changed for the various levels of work.

OPSOMMING

Sosiale en besigheids kultuur is geïntegreerde konstrukte wat bepaal hoe organisasies funksioneer as 'n substelsel van die groter gemeenskap waarin dit funksioneer (Katz et al., 1978). In Suid Afrika is die meeste organisasies, insluitend Mynbou organisasies, nog steeds geskoei op 'n Westerse / Europese besigheids model (Van der Wal et al., 2001). Die kultuur van organisasies word oorheers deur hierdie waardes (Du Plessis, 2012) en die feit dat die grootste deel van die arbeidsmag nie Europees of Amerikaans is nie, maar wel Afrikane, word grootliks geïgnoreer (Xiaoxing et al., 2008). In praktyk kan baie mense hulle nie vereenselwig met hierdie waardes nie en min ooreenstemming bestaan tussen organisasie waardes en dié van die algemene arbeidsmag (Du Plessis, 2012).

Waardes word beskou as die hart van kultuur en beïnvloed die meeste, indien nie alle gemotiveerde gedrag (Schwartz, 2006). Individue funksioneer in tyd oor verskeie vlakke van die samelewing en ontwikkel lewens stories met verloop van tyd wat die sosiale strukture reflekteer waarvan hulle deel is of was gedurende hulle lewe (Kohn, 1989). Die konteks van 'n individu se lewenstorie fasiliteer waarde verkryging en dit stel individue in staat om in organisasies te funksioneer waar werk gedoen word in laer of hoër vlakke van kompleksiteit, mense met mekaar kommunikeer, en toegang het tot mekaar, gerig deur die besigheids of funksionele doelwitte van die organisasie, om werk op verskillende vlakke van kompleksiteit of vlakke van werk te verrig.

Deur gebruik te maak van 'n nie eksperimentele navorsings ontwerp en 'n gerieflikheidsteekproef benadering is data ingesamel in die mynbou industrie. Hierdie data is geanaliseer met behulp van 'n verskeidenheid beskrywende en inferensiële statistiese tegnieke, insluitend bevestigende faktorontleding en multidimensionele modellering. Die bestaande teorie op waardes, soos geformuleer deur Schwartz is gebruik om waarde prioriteite te bestudeer op die verskillende vlakke van werk in die Suid-Afrikaanse mynbedryf. Die nie-parametriese ontleding het aangedui dat beduidende verskille wel bestaan in die waarde prioriteite op die verskillende vlakke van werk. Omdat die vier vlakke van werk meervoudige onafhanklike veranderlikes verteenwoordig, was dit nodig om die analises uit te brei met multidimensionele modellering om sodoende die beweging in waarde prioriteite op die verskillende vlakke van werk verder te ondersoek. Hierdie ontledings het ook die hipoteses bevestig, maar ook gehelp om te verstaan hoekom die waarde prioriteite verander het op die verskillende vlakke van werk.