THESIS

Ubuntu: development and validation of a scale to measure African humanism

BY

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Abstract

Ubuntu is an African humanist philosophy described by the Nguni aphorism "*umuntu ngumuntu ngabantu*" which translates as a person is a person through other people. While Ubuntu has been a domain of extensive scholarly research, to date almost all of this work has been philosophical or conceptual; by contrast, there is a dearth of empirical research examining the nature of Ubuntu. Scholars provide indicator values, namely descriptive abstract nouns, of Ubuntu with no consistency in how the indicator values were derived because the concept lacks a clear definition. The challenges arising from the lack of a clear definition of Ubuntu can be attributed to the fact that there is no empirical research that has been conducted to develop a reliable and valid measure of Ubuntu.

This research operationalised Ubuntu by developing a psychometrically reliable and valid scale for measuring Ubuntu. The research established the underlying dimensions of Ubuntu. This thesis develops and validates a scale to measure Ubuntu using a mixed-methods, multiple study approach. First, a literature review identifies 82 indicator values of Ubuntu. Next, using focus groups, depth interviews, and q-sorting, three nascent components of Ubuntu emerge: humanness, interconnectedness, and compassion. Finally, across three quantitative studies, the scale is purified to seventeen items which exhibit a three-factor structure that is psychometrically reliable and valid. The Ubuntu scale has discriminant validity relative to a collectivism scale and demonstrates predictive validity in terms of charitable and altruistic behaviours.

This study contributes towards the development of theory through conceptualisation of Ubuntu. The current study utilised large sample sizes to replicate the factor structure, reliability, and construct validity of the measure including nomological validity assessment and measurement invariance.

Key Words: Ubuntu, scale development, humanness, interconnectedness, compassion.

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List of abbreviations/acronyms/definitions

AIC	Average Interitem Correlation
ADF	Asymptomatically Distribution Free
AGFI	Adjusted Goodness of Fit Index
AVE	Average Variance Extracted
CATI	Computer Assisted Telephonic Interviews
CI	Confidence Interval
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Composite Reliability
CN	Critical N
ECVI	Expected Cross-Validation Index
EFA	Exploratory Factor Analysis
GFI	Goodness of Fit Index
HTMT	Heterotrait-Monotrait
ICR	Interitem correlation range
KMO	Kaiser-Meyer-Olkin (index)
ML	Maximum Likelihood
MSV	Maximum Shared Variance
NFI	Normed Fit Index
NNFI	Non-Normed Fit Index
PLS	Partial Least Squares
RMR	Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SRMR	Standardised Root Mean Square Residual
SV	Shared Variance
TLI	Tucker Lewis Index

1 Introduction, research problem and overview of the study

1.1 Introduction

The main objective of this research was to develop a psychometrically reliable and valid scale for measuring Ubuntu. This chapter discusses the purpose of the study and provides an overview of the thesis. A detailed outline of how the thesis is structured is provided. This chapter outlines the background of the research study, followed by the conceptual framework of the study. The problem statement, purpose statement and the research questions are also discussed. A brief description of the research methodology is also provided as well as a brief explanation of the process of scale development followed. The chapter also discusses the importance and benefits of the proposed study and definition of key terms. In conclusion the chapter discusses how the six chapters are organised.

1.2 Background

The term Ubuntu is an African philosophy which refers to how people live and interact within their communities. The term was derived from a Nguni proverb, "*umuntu ngumuntu ngabantu*" which is translated as "A person is a person through other persons". The inherent philosophy in this statement is that a person's whole existence is dependent on others. Ubuntu is regarded as a moral philosophy associated with the way of life in African society (Mangaliso, 2001; Matolino & Kwindingwi, 2013; Poovan et al., 2006). It is a way in which communities and people interact together (Taylor, 2014) and it unites communities and brings people together irrespective of their wealth and circumstances (Sithole, 2001; Taylor, 2014). The moral value systems of African society stem from the Ubuntu philosophy (Metz, 2007a).

The concept of Ubuntu has extensive variations in terms of interpretations and many authors have linked it to different indicator values. There is no consistency in how these indicator values of Ubuntu are established. Taylor (2014) expressed that the philosophy of Ubuntu is based on several aspects namely: mutual support and respect, collective work and responsibility, unity, interdependence and servant leadership. Kamwangamalu (1999) asserts that the indicator values of Ubuntu are respect, human dignity, sharedness, solidarity, caring, humility, obedience, hospitality, interdependence and communalism. Mangaliso (2001) defined Ubuntu as "humaneness, a pervasive spirit of caring and community, harmony and hospitality, respect and responsiveness that individuals or groups display for another".

There are multiple indicator values for Ubuntu without a clear indication of how they were established. Scholars have come up with different indicator values of Ubuntu with no clear ground rules on how they established the indicator values of Ubuntu. The indicator values across the different scholars are very different creating challenges in applying the concept. The Ubuntu concept lacks consistency in how it is applied (West, 2014). The debate on what are the indicator values of Ubuntu can be empirically advanced only if the concept is operationalised and measured, but there is no existing scale for its measurement. This research therefore aims at providing a starting point for advancing knowledge on this subject by developing and validating a scale to measure Ubuntu.

1.3 Conceptual framework

The main objective of the study was to establish the attributes that make up the Ubuntu Construct. The researcher identified three dimensions of Ubuntu from literature, focus group and in-depth interviews, which reflected the concept of Ubuntu. The three dimensions of the concept were conceptualised as: Humanness, Interconnectedness and Compassion.

Once the three dimensions were established a panel of experts was consulted which led to some changes on the preliminary set of items for each dimension. The study one instrument had a total of three dimensions and 87 generated items from literature and qualitative research. Figure 1 shows three dimensions of Ubuntu from literature, focus groups and In-depth interviews:

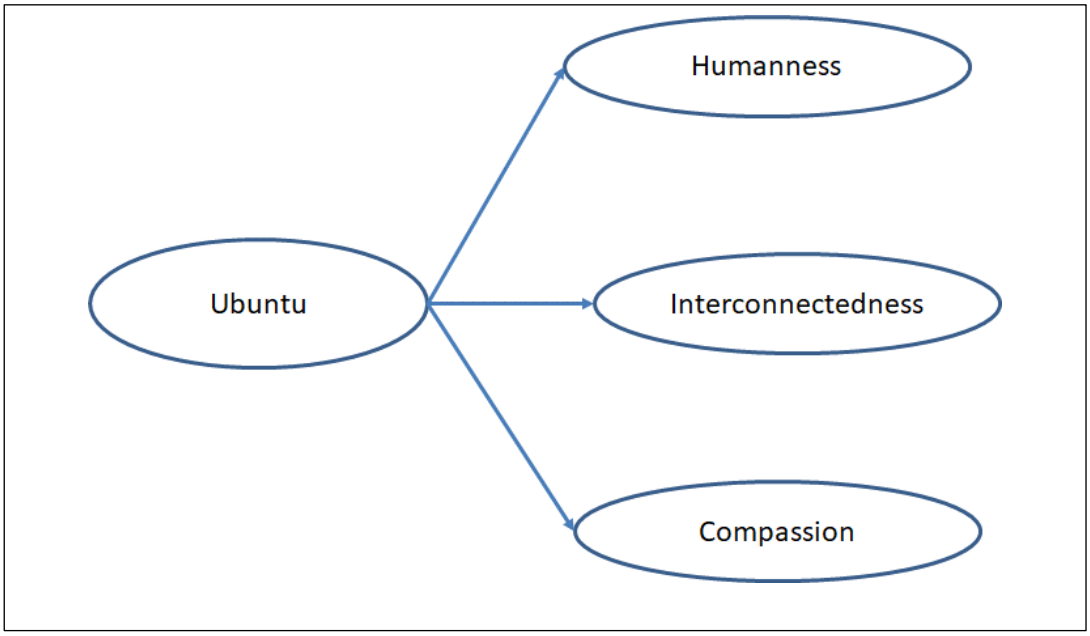

Figure 1: Proposed Dimensions of Ubuntu (Study 1 Instrument)

The researcher established definitions of the three constructs of Ubuntu based on the indicator values of Ubuntu grouped under each dimension and the provided names of each dimension from the qualitative research. Ubuntu is defined by the researcher as an African philosophy reflecting the belief that a person's humanity is expressed in relationship to other people. The operational definitions of the dimensions derived by the researcher are provided below.

1.3.1 Humanness

The belief that all people possess the innate characteristic of being human, which is to say being aware of self and of other people.

1.3.2 Interconnectedness

The belief that all people are bound together by virtue of their shared humanity

1.3.3 Compassion

The belief that other people should be treated with concern due to a common humanity.

1.4 Problem statement

The concept of Ubuntu is applied in many disciplines including management and leadership. Ubuntu is also applied in communication, advertising as well as economics disciplines. Professor Lovemore Mbigi (Mbigi, 1997) applied the Ubuntu concept in management and also in the field of computer science, Linux developed an open software named Ubuntu. Different authors have argued that Ubuntu is a critical element for enhanced productivity and success in organisations (Karsten & Illa, 2005; Mangaliso, 2001; Mbigi, 1997; Msila, 2015; Poovan et al., 2006) while others have argued that it can damage the success of an organisation (Msila, 2015; Lutz ,2009). Ubuntu has also been discussed as a management aspect which is important in the African society philosophy (Broodryk, 2005; Mbigi, 1997). The concept of Ubuntu is also applied in social, religion and politics disciplines. Archbishop Desmond Tutu (Tutu, 2000) applied the concept of Ubuntu in theology, while Nelson Mandela (Mandela, 2006) applied the concept in politics. Other influential leaders in Africa have argued for the value of Ubuntu in the society (Mandela, 2006; Samkange, 1980; Tutu, 1999; Tutu, 2004). According to Mugumbate & Nyanguru (2013), Africa's largest contribution to the world is the social ethic of Ubuntu concept.

While the concept of Ubuntu has been argued to be an important concept in a number of disciplines, it has been identified to have numerous different indicator values from different scholars and influential African leaders. The differences in how different scholars establish different characteristics of Ubuntu is a clear indication that Ubuntu lacks consistency in how it is defined. While most of the characteristics are the same across the different authors there is still clear disagreement between some of the identified characteristics of Ubuntu by the different scholars. It is evident that the debate amongst scholars and practitioners on the relative effects of the philosophical concept of Ubuntu can only be resolved if the concept can be measured, but no widely accepted measures are currently available for the concept. It is therefore critical to derive acceptable measures that will guide further studies of the concept of Ubuntu in order for it to make more solid future contributions to the literature.

The vagueness of the Ubuntu concept has been acknowledged by a number of authors (Lutz, 2009; Taylor, 2014; West, 2014). Taylor (2014) points out that the explanation of the Ubuntu concept has extensive discrepancies and is likely not to have an individual conception. Furthermore, Taylor (2014) concludes that Ubuntu cannot be defined as a rule or even a principle and that the effort to establish an accurate internalised definition of Ubuntu is futile. The features of Ubuntu are vague and this undermines its significant contribution to global business ethics. West (2014) reviewed numerous studies which showed several inconsistencies in the results and the scholar concluded that Ubuntu philosophy is surrounded by ambiguities which makes it difficult to apply. It is important to note that the lack of a clear definition of Ubuntu is also due to epistemological and related differences.

The challenges arising from inconsistencies of the Ubuntu concept can be attributed to the fact that there is no empirical research that has been conducted to develop a measure for Ubuntu. It is therefore important to have a measure of Ubuntu to advance our understanding of it and to establish its relative merits and demerits in the different disciplines. The research that has been conducted on this topic has been qualitative in nature (Karsten & Illa, 2005; Mangaliso, 2001; Poovan et al., 2006) with some being merely in the form of reviews of existing literature (Lutz, 2009). Moreover, such research has tended to focus on conceptual and theoretical aspects of Ubuntu leadership and management. Ubuntu could so far not be empirically measured with a valid and reliable scale and the research has not been linked to suitable antecedents and outcomes in developing a conceptual model. This research is therefore concerned with developing a valid and reliable measure for Ubuntu which will advance our understanding of the concept and enhance its contribution to the literature.

1.5 Purpose statement and research questions

The purpose of the study is:

i. To develop a psychometrically reliable and valid scale for measuring Ubuntu;
ii. To establish if Ubuntu is a multidimensional construct and thereby establish the dimensions of Ubuntu;
iii. To establish the interrelationships between the dimensions of Ubuntu.
iv. To delineate how Ubuntu is different from Collectivism.

The study aimed to answer the following research questions:

- Is Ubuntu a multidimensional construct?
- What are the dimensions of Ubuntu, if it is multidimensional?
- How are the dimensions interrelated to measure Ubuntu?
- What is the relationship that exists between Ubuntu and Collectivism?
- Does Ubuntu predict charitable behaviour?
- Does Ubuntu predict Self-Report Altruism?

1.6 Importance and benefits of the proposed study

Deriving a conceptualisation of Ubuntu using a robust scale development method is an opportunity to contribute to the field of philosophy, management, human resource and leadership. The **primary theoretical contribution** of this research is the development of the dimensions and scale for measuring Ubuntu. Various authors have described different indicator values of Ubuntu without stating any consistent ground rules used to determine these characteristics (Taylor, 2014). To date, there has not been an extensive examination of the dimensions of Ubuntu. This research is the first to evaluate these empirically in order to develop a scale for the Ubuntu construct which will allow the advancement of knowledge in this field. The developed scale will allow measurement of Ubuntu across diverse cultural backgrounds in order to facilitate comparisons. The development of an Ubuntu scale will also advance debate on key conceptual and theoretical aspects of Ubuntu by providing empirical evidence on which scholarly arguments can be grounded. The research will also be able to establish the theoretical relationship between Ubuntu and Collectivism.

The study will enrich and reinforce the existing knowledge of Ubuntu by using a **quantitative methodology** in developing a conceptualisation of the dimensions and scale for measuring Ubuntu. Mainly qualitative research has been conducted on Ubuntu as well as some literature review with little quantitative research (Sigger, Polak & Pennink, 2010) being conducted on this construct. This research will pave a way for further quantitative research to be conducted. While there has been

some scales developed for Ubuntu (Molose, Goldman, & Thomas, 2018; Molose, Thomas, & Goldman, 2019; Muller, Smith & Lillah, 2019; Sigger et al., 2010), these scales did not follow recommended robust scale development procedures.

This research conducted a thorough assessment of construct validity (including convergent validity, discriminant validity and nomological validity) of Ubuntu scale taking advantage of Structural Equation Modelling over the traditional methods of scale development (Terblanche & Boshoff, 2008). The research also assessed measurement invariance which has not been done with previous studies. This has therefore added to the rigour of the study in developing the scale.

The scale can be utilised by managers and academic practitioners to measure the extent to which people have Ubuntu. Ubuntu has been argued to positively or negatively influence organisational performance and it will be of importance for human resource practitioners to be able to measure Ubuntu among employees and further establish if the concept is good or bad for organisational success. The research will allow organisations to be able to create strategies to help cultivate the concept among employees for organisational success if research has established its value to organisations. The concept has also been argued to play a significant role in economics, politics, health care, production, society as well as education. Deriving a scale for Ubuntu will help practitioners in these fields to develop strategies that will help cultivate the concept among people in the society and improve the way of life for people in the society.

1.7 Definitions of key terms

1.7.1 Scale

"A scale is a collection of items combined into a composite score and intended to reveal levels of theoretical variables not readily observable by direct means", DeVellis (2003, p.9*)*. A scale consists of a number of items of a variable which have a logical structure (e.g. Likert scale) (Babbie, 2010).

1.7.2 Criterion Validity

Criterion validity is a measurement of the relationship between scales that measure one construct and the other type of measure of the same construct (Pedhazur & Schmelkin, 1991).

1.7.3 Construct Validity

“Construct validity is the extent to which a measure “behaves” the way that the construct it purports to measure should behave with regards to established measures of other constructs”, (DeVellis, 2003, p.53).

1.7.4 Content Validity

Content validity is a measurement examining if a scale is a true reflection of the meaning and the original facets of the construct (DeVellis, 1991; Netemeyer et al., 2003).

1.7.5 Convergent Validity

Convergent validity is the extent to which the measure is highly associated with other constructs developed to measure the same construct and should be theoretically similar (Churchill, 1979; Netemeyer et al., 2003).

1.7.6 Discriminant Validity

Discriminant validity is the extent to which a construct is discriminant from other theoretically related constructs and is not simply a reflection of some other variable (Churchill, 1979; Netemeyer et al., 2003).

1.7.7 Nomological Validity

Nomological validity is an assessment of the relationship between constructs. It is the extent to which, a construct behaves among other related constructs known as nomological set. Nomological validity is an extension of predictive validity (Rossiter, 2002).

1.7.8 Reliability

Reliability is an assessment of internal consistency and unidimensionality of measures (DeVellis, 1991; Netemeyer et al., 2003). Reliability can be defined as the degree to which items measure the same unidimensional construct.

1.7.9 Unidimensionality

Unidimensionality is the existence of a single construct underlying a set of measures (Hattie, 1985).

1.7.10 Indicator values of Ubuntu

Indicator values of Ubuntu are abstract nouns used to describe the qualities of Ubuntu.

1.8 Research design and methodology

1.8.1 Research Methods

The research used mixed methods with both qualitative and quantitative components. The main part of the research was quantitative to validate the measure. For the qualitative research two focus groups and four in-depth interviews were conducted while for the quantitative telephonic and online surveys were conducted. Three questionnaires were used over three waves of datum collection for the quantitative research.

1.8.2 Datum sources

Datum was collected using both primary and secondary datum sources.

1.8.2.1 Secondary datum sources

Literature review

The dimensions of Ubuntu and associated items for each dimension were established through a comprehensive literature review. The research reviewed the different definitions of Ubuntu and indicator values in different studies.

1.8.2.2 Primary datum sources

Focus group

Two focus groups were conducted to explore the Ubuntu concept. A semi-structured guide was used to facilitate the discussions by trained moderators.

In-depth Interview

A total of four in-depth interviews were conducted to explore the specific aspects and issues that relate to the concept of Ubuntu. Similar to the focus groups datum was generated using semi-structured guide facilitated by trained moderators.

Panel of experts

Academics and senior practitioners formed part of the panel of experts that were used to evaluate the derived items and the dimensions of the first draft questionnaire. The initial instrument was designed based on literature review, focus groups and in-depth interviews. The first draft questionnaire was refined based on the panel of experts input.

Surveys

A structured questionnaire was developed to collect datum for each wave of datum collection. Each questionnaire was a result of the refinement, purification and statistical analysis conducted in each wave. Telephonic interviews were captured on the computer during the interview while the online survey was recorded on a website. All datum was stored on the server and later downloaded for analysis. The research consultants phoned potential respondents and interviewed them telephonically while for the online survey the potential respondents received a link to the online questionnaire by email.

1.9 Population and sampling

The research was administered among the adult population (18 years and above) in South Africa using telephonic and online surveys. The datum was collected using a datumbase which was sourced by the researcher and used to conduct the telephonic as well as online surveys. The researcher sourced a list of the adult population datumbase from an existing Panel of respondents at Plus 94 Research which then was used to collect the datum. The research did not require a representative adult population of South Africa as the results were not generalised to the South African adult population, hence panel respondents were used.

1.10 Scale development process

A series of steps were followed to develop the scale which are discussed in detail in Chapter four. Three waves of datum were collected and analysed to refine and purify the measure. Numerous statistical analysis tools were utilised to evaluate the construct validity of the measure, which included reliability, unidimensionality, convergent validity, discriminant validity as well as nomological

validity. Measurement invariance and model fit were also assessed. The researcher took cognisance of scale development procedures suggested by DeVellis (1991, 2003). This section provides a summary of the steps conducted to develop the scale following DeVellis (2003).

Step one: Establish what needs to be measured

According to DeVellis (1991, 2003) the construct needs to be formulated with well-grounded substantive theories. Through literature review and qualitative research, the researcher provided a sound conceptual foundation of the construct by clearly defining the construct. Attributes of abstract constructs are clearly defined. Qualitative research in the form of in-depth interviews and focus groups were used to establish what constitute Ubuntu.

Step two: Generation of a pool of items

The researcher drew scale items from the literature and qualitative research for each of the indicator values of ubuntu. This process generated a pool of items designed to measure the indicator values of ubuntu. Once a pool of the items that reflected each of the indicator values of Ubuntu was established the researcher designed the measure (DeVellis, 2003).

Step three: Determine the format of the measure

The questionnaire was developed taking into account all the items generated in step two. A Likert scale was used (DeVellis, 2003). The measure included the demographic information of the respondents.

Step four: Have experts review the initial item pool

Once a pool of the items that reflected each of the indicator values of Ubuntu was established through literature review and qualitative research the researcher appointed four judges that reviewed the items. The researcher identified knowledgeable experts that assessed the quality of the items (DeVellis, 2003).

Step five: Consider inclusion of validation items

Including additional items in the scale can help to determine the validity of the final scale (DeVellis, 2003). Assessment of discriminant and convergent validity is important at this stage, so the scale

included items for Collectivism as well as charitable behaviour (Winterich & Zhang, 2014) and Self-Report Altruism scale (Wilhelm & Bekkers, 2010).

Step six: Administer items to a development sample

Once the measure was developed it was programmed on the datum collection software for the questionnaire to be administered among a large sample (DeVellis, 2003). Research consultants called and made appointments to interview the respondents for the telephonic study. For the online survey the researcher emailed the link to complete the questionnaire to respondents.

Step seven: Evaluate the items

A quantitative datum set is required for evaluation of the items. Once the items were generated and content validity evaluated, datum were collected. Three wave datum collections were conducted for purifying and refining the measure. Once the datum was collected it went through a process of validation which included a number of statistical techniques (DeVellis, 2003). The following section discusses the different statistical techniques that were conducted.

Exploratory factor analysis (EFA)

Once the datum was collected it went through an EFA process. This phase mainly reduced the generated items and derived an initial structure for the measure as well as assessment of internal consistency.

Reliability

Internal consistency was assessed using the Coefficient Alpha. Coefficient alpha values ranges from zero to one however according to Nunnally (1978), a coefficient alpha of 0.7 and above is large and acceptable by many researchers as the minimum standard for internal consistency.

Confirmatory factor analysis (CFA)

The purpose of CFA is to confirm the model derived from the EFA and to test its validity. The datum was subjected to confirmatory factor analysis to test the model (Bearden et al., 1989; Lastovicka et al., 1999).

Construct validity, Model fit and Composite Reliability (CFA)

The construct validity of the measurement model was evaluated using CFA. CFA was designed to evaluate the goodness of fit of the model. The CFA was conducted using the item variance-covariance matrix (Harvey, Billings & Nilan, 1985). The chi-square statistic was used to assess the

goodness of fit of the model. The model is a better fit if the chi-square statistic is smaller (Hinkin, Tracey & Enz, 1997). Goodness of fit of the model is tested using adjusted goodness of fit indices (Hinkin et al., 1997; Richins & Dawson, 1992) to control the impact of sample sizes.

Other methods used to assess goodness of fit were Goodness of Fit Indices (GFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Tucker Lewis Index (TLI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), p-values, Root Mean Square Residual (RMR) and Standardised Root Mean Square Residual (SRMR). The composite reliability of the measure was assessed and the cut-off of 0.7 for composite reliability was used to assess reliability of CFA Model.

Convergent validity & Discriminant validity

Convergent validity measures the extent to which the designed measure is highly correlated to other methods which are designed to measure the same construct while discriminant validity is a measure of the extent to which the scale is unique and does not reflect another variable (Churchill, 1979). Convergent validity was tested by assessing factor loadings, variance extracted, and reliability. The average variance extracted (AVE) for each dimension was used to assess convergent validity. The AVE should be above 0.5 as the recommended threshold.

Discriminant validity is assessed using the shared variance test. Requirements for discriminant validity are that the variance extracted estimates must be more than the square of the correlation between the constructs (Bearden et al., 1989). Discriminant validity was also assessed using the heterotrait-monotrait (HTMT) ratio. The recommended cut off is 0.85. The measure for Ubuntu should have both convergent validity and discriminant validity to be a good measure for the scale.

Nomological validity

Nomological validity is also tested at this stage. According to Cronbach & Meehl (1955), nomological validity is demonstrated when a scale empirically validates the research findings to be consistent with hypothetical expectations. Nomological validity is assessed using two scales. A new scale for measuring Self-Report Altruism scale and charitable behaviour were introduced and used to measure predictive validity.

Invariance

The researcher evaluated evidence of invariance across two samples (Bagozzi, 1994). If there is invariance across two groups, the results suggest that the measures are interpreted to be the same in more than one group. Measurement Invariance testing measures whether the measurement parameters of the proposed model are different across two groups. The five types of invariance tests discussed in chapter three are assessed between the sample obtained online (wave two datum) and

the telephonic sample (wave three). Establishment of measurement invariance is identified as a logical prerequisite when conducting substantive cross-group comparisons (Vandenberg & Lance 2000).

Step 8: Optimise scale length

A procedure for deleting or retaining items was set to optimise the length of the scale. It is also important to optimise length of the scale by trading-off between length and reliability (DeVellis, 2003).

1.11 Document Structure

The document has six chapters which are briefly discussed below:

Chapter one which discussed the purpose and overview of the thesis. The chapter outlines the background of the research study, followed by the conceptual framework of the study. Furthermore, the chapter discusses the problem statement, purpose statement and the research questions. The chapter concludes with a discussion of the importance and benefits of the proposed study. Chapter one also highlighted how the thesis is structured as well as the definition of key terms.

Chapter two provides a definition and an in-depth conceptualisation of the Ubuntu concept. The chapter also offers the background on the concept of Ubuntu including history of Ubuntu. Chapter two also conduct a literature review of the concept of Ubuntu. Further, chapter two provides a list of emerging themes for defining, conceptualising, or referring to Ubuntu. More importantly, chapter two also discusses constructs and concepts that are related to, but distinct from, Ubuntu.

Chapter three discusses the literature on scale development including traditional and modern scale development. The chapter discusses the development of modern multiple-item measures with more emphasis on construct validity (reliability, convergent validity, discriminant validity and nomological validity), model fit and measurement invariance. The reasons for choosing modern scale development over traditional methods are also discussed in this chapter.

Chapter four outlines the methodology that was used to develop the scale for measuring Ubuntu. The methodology section provides explanation of the research paradigm and approach as well as the datum collection techniques and procedures that were utilised. This section also discusses the population as well as the sampling methodology that was used and the sample size achieved for each wave of datum collection. The analyses that was conducted to refine, purify and replicate the

measure is discussed in Chapter four. The statistical analyses that were performed to ensure construct validity (reliability, convergent validity, discriminant validity and nomological validity), model fit and measurement invariance are also discussed.

Chapter five presents the empirical findings of the study. The chapter outlines the results for all the three waves of datum collection. The results of all the statistical analysis conducted to ensure construct validity (reliability, convergent validity, discriminant validity and nomological validity), model fit and measurement invariance are also discussed for all the three waves of datum collection.

Chapter six provides a discussion of the results and conclusions of the study after the development of the Ubuntu measure. The chapter also discusses the implications of the research findings as well as recommendations.

1.12 Summary and conclusions

Chapter one provided an overview of the research as well as the purpose of the study. The chapter discussed the background of the research problem and the conceptual framework of the study. The problem statement, purpose statement, research questions, definitions of key terms were also clearly outlined in this chapter. The chapter also highlighted the contribution of the study and concludes with a discussion of how the thesis is structured.

Next Chapter two reviews the literature on Ubuntu. The definition and an in-depth conceptualisation of the Ubuntu concept is provided. How Ubuntu is defined by different scholars and the indicator values of Ubuntu from different articles and books are provided. The chapter looked at several articles and provided 82 indicator values of Ubuntu from literature. The background on the concept of Ubuntu including the definition and conceptualisation of the concept is provided in detail. The chapter discusses concepts that are similar to Ubuntu and concludes with a discussion of previous research conducted in developing a scale for Ubuntu.

2 Literature review

2.1 Introduction

Chapter two reviews the relevant literature and provides the theoretical framework. The first section begins by defining Ubuntu as well as an analysis of the indicator values of Ubuntu, while in the third section, literature on some of the recognised African leader's views and explanation of the concept of Ubuntu is discussed. The fifth section explores the concept of Ubuntu in other cultural backgrounds followed by a discussion of the Collectivism construct. Lastly the chapter discusses previous research on Ubuntu scale development.

2.2 Ubuntu

Ubuntu was derived from the Xhosa language words; "ubu" which mean "being" and "ntu" which mean "human" (Ramose, 1999). According to Ramose (2002, p. 230), *"It is best to approach Ubuntu as an hyphenated word namely, ubu-ntu. Ubuntu is actually two words in one. It consists of the prefix ubu- and the stem ntu-. Ubu evokes the idea of being in general".* The prefix ubu- is used to denote the "state of being." This prefix belongs to the seventh class of nouns in isiXhosa (Pahl & Ntusi, 1974). The root ''ntu" is the name of a person regarded as the originator of the human race who possessed the qualities of an ideal person. According to sociolinguist Mfenyana (1986), Ubuntu means the state of being like Ntu or society, which include qualities such as sharing, charitableness and cooperation. Ubu-ntu is therefore a fundamental ontological and epistemological category in the African thought of the Bantu-speaking people (Mabovula, 2011).

Ubuntu is a Nguni term which is an African (Southern Africa) kind of humanism. The Nguni languages are mainly spoken in Southern Africa and hence the concept is sometimes regarded as a Southern Africa concept. Four of these Nguni languages are spoken in South Africa namely; Xhosa, Zulu, Ndebele and Swati. While there are different vocabularies and phrases to describe the Ubuntu concept in Africa, the vocabularies and phrases have the same meaning. Ubuntu is described differently by different African communities. Among the Swahili speakers in East Africa Ubuntu is known as Utu. Among the Shona of Zimbabwe it is known as Unhu. Among the Kikuyu people of Kenya the term is known as Umundu while Umuntu is used by the Kimeru people. The term Ubuntu in Botswana is Botho, Tanzania it is Bumuntu, Congo it is Bomoto, Angola it is Gimuntu, Malawi it is Umunthu, Mozambigue it is Vumuntu and Uganda it is Umuntu (Mugumbate & Nyanguru, 2013). Among the different languages in Africa the term has different words used. The term therefore has many other names which are not mentioned in this thesis.

Ubuntu is defined by a Nguni proverb, "*umuntu ngumuntu ngabantu*" which is translated as "A person is a person through other persons" (Kastern & Illa, 2005; Lutz, 2009; Mangaliso, 2001; Mbigi, 1997; Metz & Gaie, 2010; Poovan et al., 2006; Taylor, 2014). In Kikuyu the idiom, *Mundu ni mundu ni undu wa andu*, translated as "a human being is a person because of the other people" is used to describe the Nguni proverb. The same can be said in Sotho as follows: *Motho ke motho ka batho ba bang* with a similar translation to those of other African communities. This idiom is also the same, as: *munhu nekuda kwevanhu*, in Shona a language spoken in Zimbabwe. The proverbs used to define Ubuntu show the emphasis on the collective human value within a community and the understanding that community is a binding and robust network of relationships (Mutwarasibo, 2019). According to Mangaliso (2001) the idiom conveys the notion that a person becomes a person only through their relationship with and recognition by others which has far reaching implications such that if your mother has an older and a younger sister, then you are regarded as having three mothers: a mother, an older mother, and a younger mother (p.25).

The different African cultures have developed different conceptualisation of Ubuntu with different names although the term still has the same meaning. While the term has many expressions in different parts of Africa, it was more popularised in South Africa. The term Ubuntu gained popularity in South Africa when it was used as a unifying idea from transition from the apartheid system (Gade, 2011). Ubuntu was adopted as the basis of transforming and reviving values which were lost during apartheid and colonialism (Matolino & Kwindingwi, 2013).

Ubuntu is a term used to express the African sense of community (Gathogo, 2008). Ubuntu is a way of life conceptualised in Africa. In this research Ubuntu is defined as an African philosophy reflecting the belief that a person's humanity is expressed in relationship to other people. Ubuntu is a term which describes the human existence in thought and experience as lived in the community (Shepherd & Mhlanga, 2014). Furthermore, Taringa (2007. p.190) states that, "An African is never regarded as a loose entity to be dealt with strictly individually". With Ubuntu affirmation of our humanity is through the recognition of the humanity of other people therefore we are not able to isolate our humanity from that of other people around us. Mbiti (1969, p 108) explains Ubuntu as, "I am, because we are; and since we are, therefore I am". This implies that a person can only be complete in a community through the relationship with others. According to Shutte (2001), one can only be fully human to the extent that they are included in relationship with others within the community. Gathogo (2008) defines Ubuntu as both a philosophical and a religious concept which expresses an individual's relationships with others. According to Nussbaum (2003) Africans who write about Ubuntu argue that non-Africans could also have Ubuntu since the quality of Ubuntu can be developed over time. While Ubuntu is uniquely African it is a concept that can however be found in other cultures. The concept consists of all the three dimensions Humanness, interconnectedness

and compassion which are not necessarily in the other cultural backgrounds. The combination of values makes Ubuntu unique.

Over the years Ubuntu has been used with little consistency in how it is defined. The concept of Ubuntu has extensive variations in terms of interpretations and many authors have linked it to different indicator values. Ubuntu has been argued to be difficult to apply as a result of its ambiguities (West, 2014). Ubuntu/hunhuism defies a single definition or characterisation (Taringa, 2007). According to Mabovula (2011), Ubuntu is difficult to define and different scholars emphasise different elements of the concept.

According to Battle (1997, p. 65) Ubuntu is a reflection of strong interdependence of human beings: "*We say a person is a person through other persons. We don't come fully formed into the world. We learn how to think, how to walk, how to speak, how to behave, indeed how to be human from other human beings. We need other human beings in order to be human. We are made for togetherness, we are made for family, for fellowship, to exist in a tender network of interdependence*."

Mangaliso (2001) defined Ubuntu as “humaneness, a pervasive spirit of caring and community, harmony and hospitality, respect and responsiveness that individuals or groups display for another”. According to Mangaliso (2001), the main consideration with Ubuntu is having compassion for others, high levels of harmony and communality. Furthermore, the author expressed that Ubuntu is an African way which describes people’s thinking and behaviour towards each other as well as how everyone experiences each other.

Taylor (2014) defines Ubuntu as a way in which communities and people interact together and more specifically meaning “a collection of people” or “humanness”. Taylor (2014) further expressed that the philosophy of Ubuntu is based on several aspects namely: mutual support and respect, collective work and responsibility, unity, interdependence and servant leadership.

The term Ubuntu is defined as a Nguni term which means “personhood” or “humanness” (Kamwangamalu, 1999). Furthermore, Kamwangamalu (1999) asserts that the indicator values of Ubuntu are respect, human dignity, sharedness, solidarity, caring, humility, obedience, hospitality, interdependence and communalism. The societies on the African continent are governed by an Ubuntu value system which are believed to be transmitted through generations in oral genres (Kamwangamalu, 1999).

“Ubuntu is rooted in the search for identity and human dignity,” (Matolino & Kwindingwi, 2017. p. 198). Ubuntu was adopted as the basis of transforming and reviving values which were lost during

apartheid and colonialism (Matolino & Kwindingwi, 2017). The indicator values of Ubuntu are humaneness, compassion, respect, sharing and caring (Matolino & Kwindingwi, 2017). Kwindingwi and Matolino (2013) viewed Ubuntu as a process by which "orderedness of being" is attested and that this process is realised through associations characterised by various values which includes respect, solidarity, justice, empathy, interdependence and care.

Ubuntu is "humanness" (Broodryk, 2006; Mangaliso, 2001; Metz & Gaie, 2010; Taylor, 2014). This notion of equating Ubuntu to humanness is viewed by several authors. Taringa (2007) opines that Ubuntu/hunhuism is more than just humanness. Sithole (2001) views Ubuntu to be a uniting factor that bring people together irrespective of their circumstances or wealth. Various authors agree that Ubuntu philosophy places emphasis on relationships with others and humanness rather than wealth or circumstances of people (Mbigi, 2005; Shonhiwa, 2006; Shutte, 2001; Taylor, 2014).

Samkange & Samkange (1980) highlight three principles of the Ubuntu philosophy namely: (1) *Affirmation of one's humanity by recognizing the humanity of others through respectful human relations with them. (2) Choosing preservation of life over acquisition of wealth and (3) A recognition that a leaders' power and status is bestowed by the will of the people s/he leads.* Samkange & Samkange (1980) suggest that hospitality and generosity extended to visitors is a reflection of the Ubuntu principle of sharing.

The multiple indicator values of Ubuntu is an indication that the concept is difficult to apply or advance knowledge. In order to develop a psychometric scale for Ubuntu it was critical to establish the different indicator values of Ubuntu from literature to help in developing the items of ubuntu. Various authors provide different indicator values of Ubuntu, and they do not use any ground rules to determine these characteristics of Ubuntu. The differences in how different authors establish different characteristics of Ubuntu is a clear indication that Ubuntu is not clearly defined and lacks consistency in how it is defined. While most of the characteristics are the same across the different authors there is still clear differentiation between some of the identified characteristics by the different scholars.

The researcher looked at a total of 56 articles and books and identified all the indicator values of Ubuntu. In each of the articles and books the researcher identified the indicator values of Ubuntu. Table 1 shows the various indicator values of Ubuntu based on different scholars as well as few African leaders and influential people.

Table 1: Indicator Values of Ubuntu

Reference	Indicator values of Ubuntu
Achema & Ncama (2015)	Caring, hospitality, help, relationship with other people, collective
Agyeno (2019)	Tolerance, forgiveness, kindness, sympathy, dialogue, trust, peace, love, cooperation, humanity, personhood, collective, solidarity, cohesion, hospitality, interconnectedness, justice, compassion, dignity, respect, caring, sharing, empathy, equality, morality, harmony, unity, reconciliation, understanding
Akwasi (2016)	Humanity, respect, sharing, connected, compassion, caring, love, dignity, sacrifice, relationship with others, recognition, generosity, hospitable, honest, trust
Asamoah & Yeboah-Assiamah (2019)	Kind, generosity, harmony, friendly, modest, helpful, humble, happy, respect, peace, humanity, brotherhood, humanness, survival, compassion, respect and dignity, spirituality, caring
Banda & Mwaanga (2014)	Participation, connectedness, relationship with others, compassion, sharing, mutual support, respect
Blankenberg (1999)	Participation, Freedom of expression, Unity, Freedom of decent, Humanism, Relationship with others, Respect, Servant leadership, Solidarity, Collective identity
Broodryk (2002)	Humanness, Sharing, Caring, Respect, Compassion
Broodryk (2006)	Humanness, Sharing, Caring, Respect, Compassion
Chasi & Omarjee (2014)	Recognition, Dignity, Respect, Communication, Freedom of choice, Reckoning with individual experience, Empathy, Community, Collectivist, Personhood.
Chitumba (2013)	Humanness, personhood, kindness, consideration, friendliness, participation, equality, identity, interconnectedness, interdependence
Ndumiso (2017)	Humanness, humane, respect, polite, relationship to others, recognition, interconnected, equality, humanity, understanding, freedom
Dumisa & Amao (2015)	Solidarity, respect, unity, community, equality, reciprocity, understanding, communication, transparency
Fagunwa (2019)	Tolerance, unity, togetherness, humanity, interconnectedness, survival, solidarity, brotherhood/sisterhood, cooperation, humanness, understanding, respect, communality, sharing, compassion
Gade (2011)	Human quality, African dignity, Harmony, humanity/humanness/African humanism, Respect, Interdependence, Love, Intense caring, Sharing, Compassion
Gathogo (2008)	Personhood, humanness, hospitality, respect, compassion, community, communality, solidarity, dignity, relationship with others
Gianan (2011)	Humanity, cooperation, participation, respect, dignity, caring, recognition, peace, humanness, benevolence
Kastern & Illa (2005)	Humaneness, caring, community, Harmony, hospitality, Respect, responsiveness, Relationships, Unity, Interconnectedness, Collective solidarity, Sharing, Seeking consensus and interdependent helpfulness

Reference	Indicator values of Ubuntu
Khomba & Kangaude-Ulaya (2013)	Solidarity, personhood/ brotherhood/sisterhood, cooperation, caring, sharing, respect, love, humanness, sympathy, kindness, sharing, friendly, compassion, communalism, collectivism, teamwork, harmony, humanity, dignity, consensus
Khomba, Bakuwa & Kangaude-Ulaya (2013)	Interdependence, humanness, caring, sharing, cooperation, participation, respect
Konyana (2013)	Unity, oneness, solidarity, generosity, compassion, courtesy, kinship bond, hospitality, sharing, harmony
Lutz (2009)	Patience, Sympathy, Empathy, Optimism, Interpersonal relationships, Harmony, Community, Collectivism, Respect, Humanity
Mabuvola (2011)	Tolerance, Humanity, Respect, Caring, Humble, Thoughtful, Considerate, Understanding, Wise, Generous, Hospitable, Social mature, socially sensitive, Virtuous, Blessed, Sharing, Brotherhood, Relationships, Trust, Dignity, African humanism
Mabvurira (2020)	Humanness, caring, sharing, respect, compassion, justice/fairness, love, community, least harm to humanity, empathy, understanding
Makuvaza & Gatsi (2014)	Humility, kindness, courtesy, warmth, empathy, understanding, respect, responsible, friendliness, consideration
Mangaliso (2001)	Compassion, Communality, Caring, Respect, Humanness, Caring, Community, Harmony, Hospitable, Responsiveness, Relationship with others, Brotherhood, Collectivism, Solidarity, Empathy, Communication, Commitment, Dignity, Self-expression, Interdependence, Kindness, Humility, Compliance
Mangena (2019)	Sharing, identity, togetherness, collective, community, humanity, respect, caring, generosity, kindness, empathy, compassion, sympathy
Matolino & Kwindingwi (2013)	Identity, Human dignity, Humanness, Relationships, Interdependence, Justice, Solidarity, Empathy, Caring, Compassion, Hospitality, Honesty and Respect
Mayer (1980)	Kindness, Gentleness, Humility, Respect, Love
Motyl (unpublished)	Shared human bond (common humanity), Interconnection, Shared gains, Shared loss
Metz & Gaie (2010)	Interdependence, Personhood, identity, humanness, Harmony, Solidarity, Familial relationships, Respect, Community, Sharing and Caring
Metz (2007a)	Humanness, Communitarianism, Generosity, Compassion, Forgiveness, Empathy, Respect, Dignity, Equality, Brotherhood, Humanism, Spirit of oneness, Unity, Harmony, Relationship between individuals, Identity
Metz (2007b)	Respect, Harmony, Communitarianism, Personhood, Humanity, Relationship with others, Solidarity, Brotherhood, Collective unity, Shared Identity, Good-will, Survival, Caring, Dignity, Sacrifice, Consensus seeking.

Reference	Indicator values of Ubuntu
Mnyaka & Motlhabi (2009)	Humanism/common humanity, Humanness, Respect, Community, Personhood, Morality, Recognition, Valuing others, Accepting others, Dignity, Equality, Integrity, Relationship with others, Oneness, Identity, Interdependence, Collective, Solidarity, Compassion, Tolerance, Forgiveness, Sacrifice, Kindness, Caring, Benevolence, Hospitality, Friendliness, Trust, Generosity and Sharing
Muchiri (2011)	Compassion, Dignity, Respect, Humanism, Building relationships, Personal interaction, Community, Harmony, Caring, Hospitality, Responsiveness, Self-expression
Murray (2013)	Respect, generosity, trust, sharing, help, friendliness, participation, togetherness, good will
Museka & Madondo (2012)	Collective, solidarity, love, caring, tolerance, respect, empathy, understanding, responsibility, justice, compassion, unity, compromise, interdependence, virtuous, humanity
Mutwarasibo (2019)	Interconnectedness, respect, collective, community, compassion, reciprocity, dignity, humanness, peace, sharing, identity, togetherness, humanity, caring, generosity, empathy, sympathy, solidarity, survival, interdependence, connectedness, communication, consensus, harmony, kindness, friendliness, helpfulness, humility, cooperation, reconciliation, teamwork, participation, trust, shared goal,
Msila (2008)	Interconnectedness, Humanness, Interdependence, Solidarity, Collective, Mutual trust, Respect, Caring, Creative cooperation, Empathetic communication, Teamwork, Equal treatment, Sharing, Compassion, Communalism, Shared vision
Msila (2015)	Respect, Interdependence, Dignity, Humanness, Caring, Community, Compassion, Relationship between individuals, Solidarity, Survival, Sacrifice, Protecting others, Interconnectedness, Teamwork, Collective vision, Honesty, Commitment, Collaboration, Communication
Netshitangani (2019)	Sisterhood, solidarity, interconnected, collective, unity, collaborative, teamwork,
Nsengiyumva, Muhenda, Njuguna & Nyabul (2019)	Harmony, love, care, respect, communitarian, dignity, relationships with others, generous, hospitable, friendly, compassionate, sharing, oneness, humanity, communality, collectivism, unity
Nussbaum (2003)	Compassion, Reciprocity, Dignity, Harmony, Humanity, Interconnectedness, Interdependence, Personhood, Love, Community, Connectedness
Ncube (2010)	Harmony, continuity, connected, relationship with others, humanness, equality, respect, consensus, interconnectedness, interdependent, trust, collaboration, reciprocity, empowerment, collectivism, solidarity, shared vision, teamwork
Omodan & Tsotetsi (2019)	Compassion, caring, humanity, respect and love, collaborative, communication, interconnectedness, participation, recognition,
Phori & Nkoane (2019)	Justice, humanity, equality, collaborative, participation, respect, humanness, caring, harmony, sharing, compassion, community, dignity, solidarity, sacrifices, interdependence, connect

Reference	Indicator values of Ubuntu
Poovan et al, (2006)	Collectivism, Collaboration, Caring, Dignity, Respect, Equality, Humanity, Identity, Solidarity, Interdependence, Survival, Compassion, Shared vision, Mutual trust
Prinsloo (2001)	Respect, caring, dignity, harmony, sharing, considerate, kind, patient, sympathy, empathy, interaction, cooperation, communication, understanding, brotherhood
Samkange & Samkange (1980)	Kindness, Courtesy, Consideration, Friendliness, Peace, Harmony, Stability, Identity
Shepherd & Mhlanga (2014)	Humanness, communitarian, interdependence, sharing, empathy, tolerance, harmony, respect
Taringa (2007)	Humanity, personhood, kindness, courtesy, respect, consideration, friendliness, community, hospitality, relationship with others, belonging, solidarity, sympathy, compassion, patience, cooperation, sharing, humanness, communalism, empathy, humility, dignity, unity
Tutu (1999)	Generous, Hospitable, Friendly, Caring, Compassion, Humanity, Sharing, Harmony, Community, Reciprocity, Dignity
Waghid (2014)	Interdependence, humanness, communitarianism, respect, caring, sharing, humanity, dignity, compassion, hospitable, forgiving
Waghid (2020)	Interdependence, humanness, humanity, sharing, belonging, participation, togetherness, interconnectedness, generosity, hospitality, caring, compassion, community, dignity, respect, civility, responsible, justice
West (2014)	Compassion, Tolerance, Harmony, Respect, Polite, Interpersonal Relationships, Caring, Humanness, Collective, Inclusiveness
Worthington (2011)	Community, interconnections, collective, harmony, communitarian

The process of listing the different indicator values of Ubuntu from the 56 articles was done to show the differences that exist in how scholars identify the indicator values of Ubuntu. The results from Table 1 is a clear indication that there is no grounding rules used by the authors in identifying the indicator values of Ubuntu. Each of the 56 articles show different indicator values of Ubuntu. This is one of the reason why the concept is identified as ambiguous and vague. The challenges in using this concept is also as a result of these inconsistencies. From the results from Table 1 it can be concluded that it is critical to therefore derive an acceptable measure for Ubuntu.

2.3 Analysis of the indicator values of Ubuntu

A total of 82 indicator values of Ubuntu were established from the different 56 articles in table 1. A process of coding all the indicator values of Ubuntu within each article was conducted. This process was to establish the frequency of each indicator value of Ubuntu and determine how many articles mentioned the indicator value. This process was to allow the researcher to understand which indicator values are most frequently mentioned to represent Ubuntu. After establishing indicator values of Ubuntu from each article, coding was done in which for each article the researcher

assigned a one to indicate the indicator value was mentioned in the article and 0 to indicate that the indicator value was not mentioned.

Table 2 indicates how the datum was coded for each article. From Table 2 it can be noted that respect is the highest mentioned indicator value of Ubuntu from the frequency analysis across the different scholars followed by caring, compassion, humanness, dignity, sharing, humanity, solidarity, harmony and relationship with others. This process allowed the researcher to identify the most mentioned indicator values which was critical for developing the items for the scale. The list of the indicator values of Ubuntu identified were used to establish the actual items to measure using qualitative research. The variations in the established indicator values of Ubuntu is an indication that this research is very important in establishing the dimensions of Ubuntu using empirical research.

Table 2: Frequency Analysis of the Indicator Values of Ubuntu

	Achema & Ncama (2015)	Agyeno (2019)	Akwasi (2016)	Asamoah & Yeboah-Assiamah (2019)	Banda & Mwaanga (2014)	Blankenberg (1999)	Broodryk (2002)	Broodryk (2006)	Chasi & Omarjee (2014)	Chitumba (2013)	Ndumiso (2017)	Dumisa & Amao (2015)	Fagunwa (2019)	Gade (2011)	Gathogo (2008)	Gianan (2011)	Kastern & Illa (2005)	Kwindingwi & Matolino (2013)	Khomba & Kangaude-Ulaya (2013)	Khomba, Bakuwa & Kangaude-Ulaya (2013)	Konyana (2013)	Lutz (2009)	Mabuvola (2011)	Mabvurira (2020)	Makuvaza & Gatsi (2014)	Mangaliso (2001)	Mangena (2019)	Matolino & Kwindingwi (2013)	Mayer (1980)
Respect	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
Caring	1	1	1	1	0	0	1	1	0	0	0	0	0	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	0
Compassion	0	1	1	1	1	0	1	1	0	0	1	0	1	1	1	0	0	1	1	0	1	0	0	1	0	1	1	1	0
Humanness	0	0	0	1	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	1	0
Dignity	0	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	0	1	1	0	0	0	1	0	0	1	0	1	0
Sharing	0	1	1	0	1	0	1	1	0	0	0	0	1	1	0	0	1	0	1	1	1	0	1	1	0	0	1	0	0
Humanity	0	1	1	1	0	0	0	0	0	0	1	0	1	1	0	1	0	0	1	0	0	1	1	1	0	0	1	0	0
Solidarity	0	1	0	0	0	1	0	0	0	0	0	1	1	0	1	0	1	1	1	0	1	0	0	0	0	1	0	1	0
Harmony	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	1	0	0	0
Relationship with others	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	1	1	0	0	1	1	1	0	0	1	0	1	0
Interdependence	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	1	0	1	0
Community	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	1	0	1	0	1	1	0	0
Unity	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0
Collectivism/Collective	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0
Empathy	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	0
Hospitality	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1	0	0	1	0	1	0
Interconnectedness	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Identity	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0
Kindness	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	1
Equality	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friendliness	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
Generosity	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0
Participation	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Personhood	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Understanding	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
Brotherhood/Sisterhood	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Communication	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

	Achema & Ncama (2015)	Agyeno (2019)	Arko-Achemfuor (2016)	Asamoah & Yeboah-Assiamah (2019)	Banda & Mwaanga (2014)	Blankenberg (1999)	Broodryk (2002)	Broodryk (2006)	Chasi & Omarjee (2014)	Chitumba (2013)	Ndumiso (2017)	Dumisa & Amao (2015)	Fagunwa (2019)	Gade (2011)	Gathogo (2008)	Gianan (2011)	Kastern & Illa (2005)	Kwindingwi & Matolino (2013)	Khomba & Kangaude-Ulaya (2013)	Khomba, Bakuwa & Kangaude-Ulaya	Konyana (2013)	Lutz (2009)	Mabuvola (2011)	Mabvurira (2020)	Makuvaza & Gatsi (2014)	Mangaliso (2001)	Mangena (2019)	Matolino & Kwindingwi (2013)	Mayer (1980)
Cooperation	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0
Love	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
Polite	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Trust	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Collaboration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Considerate	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Humanism	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Justice	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0
Sympathy	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
Team work	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Tolerance	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Communitarianism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Humility	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
Reciprocity	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recognition	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Seeking consensus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Survival	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Communality	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Connectedness	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oneness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Sacrifice	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shared vision	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Communalism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Forgiveness	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Helpfulness	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Honesty	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Patience	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Responsiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Valuing others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Benevolence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Blessed	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

	Achema & Ncama (2015)	Agyeno (2019)	Arko-Achemfuor (2016)	Asamoah & Yeboah-Assiamah	Banda & Mwaanga (2014)	Blankenberg (1999)	Broodryk (2002)	Broodryk (2006)	Chasi & Omarjee (2014)	Chitumba (2013)	Ndumiso (2017)	Dumisa & Amao (2015)	Fagunwa (2019)	Gade (2011)	Gathogo (2008)	Gianan (2011)	Kastern & Illa (2005)	Kwindingwi & Matolino (2013)	Khomba & Kangaude-Ulaya	Khomba, Bakuwa & Kangaude-Ulaya	Konyana (2013)	Lutz (2009)	Mabuvola (2011)	Mabvurira (2020)	Makuvaza & Gatsi (2014)	Mangaliso (2001)	Mangena (2019)	Matolino & Kwindingwi (2013)	Mayer (1980)
Commitment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Freedom of choice	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Good-will	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Humble	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Morality	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Personal interaction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Self-expression	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Virtuous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Accepting others	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compliance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Freedom of decent	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freedom of expression	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Human quality	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inclusiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Integrity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Optimism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Reckoning with individual experience	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Servant leadership	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shared gains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shared loss	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Social mature	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Socially sensitive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Thoughtful	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Wise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

	Motyl (unpublished)	Metz & Gaie (2010)	Metz (2007a)	Metz (2007b)	Mnyaka and Motlhabi (2009)	Muchiri (2011)	Murray (2013)	Museka & Madondo (2012)	Mutwarasibo (2019)	Msila (2008)	Msila (2015)	Netshitangani (2019)	Nsengiyumva, Muhenda, Njuguna & Nyabul (2019)	Nussbaum (2003)	Ncube (2010)	Omodan & Tsotetsi (2019)	Phori & Nkoane (2019)	Poovan et al, (2006)	Prinsloo (2001)	Samkange & Samkange (1980)	Shepherd & Mhlanga (2014)	Taringa (2007)	Tutu (1999)	Waghid (2014)	Waghid (2020)	West (2014)	Worthington (2011)	Total
Respect	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	0	1	1	1	0	43
Caring	0	1	0	1	1	1	0	1	1	1	1	0	1	0	0	1	1	1	1	0	0	0	1	1	1	1	0	30
Compassion	0	0	1	0	1	1	0	1	1	1	1	0	1	1	0	1	1	1	0	0	0	1	1	1	1	1	0	30
Humanness	0	1	1	0	1	0	0	0	1	1	1	0	0	0	1	0	1	0	0	0	1	1	0	1	1	1	0	28
Dignity	0	0	1	1	1	1	0	0	1	0	1	0	1	1	0	0	1	1	1	0	0	1	1	1	1	0	0	24
Sharing	0	1	0	0	1	0	1	0	1	1	0	0	1	0	0	0	1	0	1	0	1	1	1	1	1	0	0	24
Humanity	1	0	0	1	1	0	0	1	1	0	0	0	1	1	0	1	1	1	0	0	0	1	1	1	1	0	0	23
Solidarity	0	1	0	1	1	0	0	1	1	1	1	1	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	22
Harmony	0	1	1	1	0	1	0	0	1	0	0	0	1	1	1	0	1	0	1	1	1	0	1	0	0	1	1	21
Relationship with others	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	21
Interdependence	0	1	0	0	1	0	0	1	1	1	1	0	0	1	1	0	1	1	0	0	1	0	0	1	1	0	0	20
Community	0	1	0	0	1	1	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	1	0	1	0	1	19
Unity	0	0	1	1	0	0	1	1	1	0	0	1	1	0	1	1	0	0	0	1	0	1	0	0	1	0	0	18
Collectivism/Collective	0	0	0	1	1	0	0	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1	1	16
Empathy	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	14
Hospitality	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	14
Interconnectedness	1	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	13
Identity	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	12
Kindness	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	11
Equality	0	0	1	0	1	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	10
Friendliness	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	10
Generosity	0	0	1	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	10

	Motyl (unpublished)	Metz & Gaie (2010)	Metz (2007a)	Metz (2007b)	Mnyaka and Motlhabi (2009)	Muchiri (2011)	Murray (2013)	Museka & Madondo (2012)	Mutwarasibo (2019)	Msila (2008)	Msila (2015)	Netshitangani (2019)	Nsengiyumva, Muhenda, Njuguna	Nussbaum (2003)	Ncube (2010)	Omodan & Tsotetsi (2019)	Phori & Nkoane (2019)	Poovan et al, (2006)	Prinsloo (2001)	Samkange & Samkange (1980)	Shepherd & Mhlanga (2014)	Taringa (2007)	Tutu (1999)	Waghid (2014)	Waghid (2020)	West (2014)	Worthington (2011)	Total
Participation	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	9
Personhood	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	9
Understanding	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	9
Brotherhood/Sisterhood	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	8
Communication	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	8
Cooperation	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8
Love	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	8
Polite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	7
Trust	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	7
Collaboration	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	6
Considerate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	6
Humanism	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Justice	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	6
Sympathy	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	6
Team work	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
Tolerance	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	6
Communitarianism	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	5
Humility	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
Reciprocity	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	5
Recognition	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
Seeking consensus	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
Survival	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
Communality	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Connectedness	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	4

	Motyl (unpublished)	Metz & Gaie (2010)	Metz (2007a)	Metz (2007b)	Mnyaka and Motlhabi (2009)	Muchiri (2011)	Murray (2013)	Museka & Madondo (2012)	Mutwarasibo (2019)	Msila (2008)	Msila (2015)	Netshitangani (2019)	Nsengiyumva, Muhenda,	Nussbaum (2003)	Ncube (2010)	Omodan & Tsotetsi (2019)	Phori & Nkoane (2019)	Poovan et al, (2006)	Prinsloo (2001)	Samkange & Samkange (1980)	Shepherd & Mhlanga (2014)	Taringa (2007)	Tutu (1999)	Waghid (2014)	Waghid (2020)	West (2014)	Worthington (2011)	Total
Oneness	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Sacrifice	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4
Shared vision	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4
Communalism	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Forgiveness	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Helpfulness	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Honesty	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Patience	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3
Responsiveness	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Valuing others	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Benevolence	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Blessed	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Commitment	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Freedom of choice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Good-will	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Humble	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Morality	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Personal interaction	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Self-expression	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Virtuous	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Accepting others	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Compliance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Freedom of decent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Freedom of expression	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Human quality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

	Motyl (unpublished)	Metz & Gaie (2010)	Metz (2007a)	Metz (2007b)	Mnyaka and Motlhabi (2009)	Muchiri (2011)	Murray (2013)	Museka & Madondo (2012)	Mutwarasibo (2019)	Msila (2008)	Msila (2015)	Netshitangani (2019)	Nsengiyumva, Muhenda, Njuguna &	Nussbaum (2003)	Ncube (2010)	Omodan & Tsotetsi (2019)	Phori & Nkoane (2019)	Poovan et al. (2006)	Prinsloo (2001)	Samkange & Samkange (1980)	Shepherd & Mhlanga (2014)	Taringa (2007)	Tutu (1999)	Waghid (2014)	Waghid (2020)	West (2014)	Worthington (2011)	Total
Inclusiveness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Integrity	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Optimism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Reckoning with individual experience	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Servant leadership	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shared gains	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shared loss	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Social mature	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Socially sensitive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Thoughtful	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

A frequency count for each indicator value of Ubuntu was calculated and the information was plotted on a graph as shown in figure 3. The plot exclude all indicator values that were mentioned by at less than four articles.

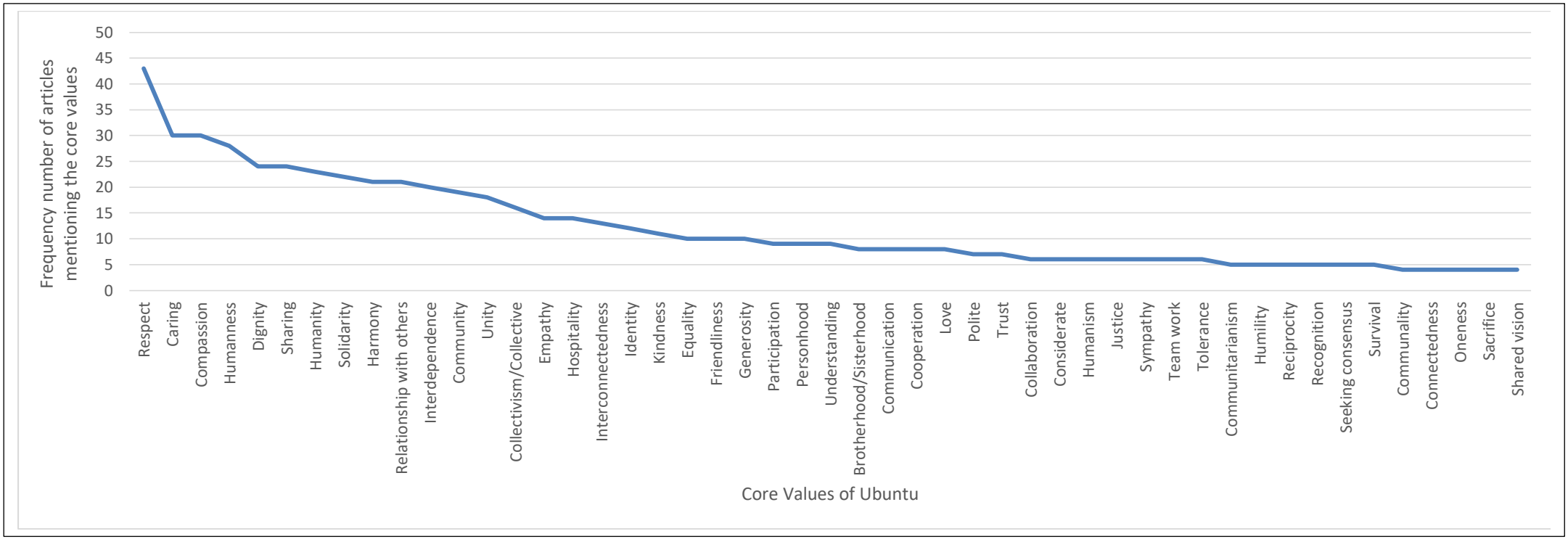

Figure 2: Plot of the frequency of the indicator values of Ubuntu

All indicator values that were mentioned in less than four articles were not included in Figure 3. These indicator values of Ubuntu were used as the starting point to establish the dimensions and items of measuring Ubuntu. The researcher looked at the different scales to measure some of the identified indicator values of Ubuntu. During the in-depth interviews and focus groups the participants were asked to q-sort the derived indicator values of Ubuntu into similar groups. Three distinct groups emerged from the process. The three groups were defined as the three dimensions of Ubuntu namely: Humanness, Interconnectedness and Compassion. The following sections discusses these three dimensions of Ubuntu.

2.4.1 Humanness

Ubuntu can be referred to the “quality of being human” which comes from the prefix ; “ubu” which mean “being” and “ntu” which mean “human” as according to Ramose (1999). By this definition Ubuntu is therefore defined as Humanness. “Ubuntu implies that our humanness consists in the affirmation of our humanity by our recognition of the humanity of others, an affirmation that we cannot separate our humanity from that of those around us” (Jimoh, 2017, p. 43). Humanness is one of the indicator values of Ubuntu. Several scholars assert that humanness is used to define Ubuntu (Khoza, 2006; Murove, 2014; Shutte, 2001; Taylor, 2014). While humanness is the key basic value of defining ubuntu (Broodryk, 2006) it is important to note that humanness is a necessary condition for ubuntu and not a sufficient condition for ubuntu. Taringa (2007) opines that Ubuntu/hunhuism is more than just humanness. The main reason for associating humanness with defining ubuntu is the fact that humanness is a term that refers to an individual inner core, the soul (Shutte, 2001). Humanness is defined as “those features that are typically, fundamentally, or essentially human, representing those attributes that form the core of the concept “human”, (Haslam, Loughnan, Yoshihisa & Bain, 2008). Humanness is associated with the phrase, “a person is a person through other people” (Metz & Gaie, 2010) which is used to define ubuntu by many scholars. This phrase influences the development of people’s personhood (Metz, 2007).

Humanness is attained through the dependence and interdependence of human beings with each other (Metz, 2011; Murove, 2014; Ng’weshemi, 2002; Ramose, 2010; Shutte, 2001). Ng’weshemi (2002) asserts that for any African it is not simply birth that makes us humans, but rather being human comes from a process of progressive integration into the society. Humanness is derived from the ability to have a friendly relationship with other human beings and to identify with their difficulties and sorrows. Humanness can therefore only be enhanced in the framework of a community with other human beings. Metz (2011) asserts that people’s existence while caring for each other in the community is what gives humanness among the people. To become fully human and achieve

humanness involves being deeply into community with others in the process eliminating selfishness although one still attains personal fulfilment (Shutte, 2001). “To be a human being one has to affirm one’s humanity by recognising the humanity of others”, (Ramose, 2010).

Humanness can be defined as that which is unique to the human species (Leyens, Rodriguez-Perez, Rodriguez-Torres, Gaunt, Paladino, Vaes, Demoulin, 2001). Humanness is the key concept for Ubuntu and is the ability to identify with the challenges and sorrows of other people (Broodryk, 2006). Violation of human rights degrades humanness capacity (Taylor, 2014).

All theories of human rights use humanness as their starting point to determine the value ascribed to human beings (Broodryk, 2006). Dehumanisation occurs when one group of people perceives the other group as lacking unique human characteristics, hence likening them to animals or insects, or as lacking human nature, and likening them to inanimate objects (Haslam, Loughnan & Holland, 2013). Dehumanisation incites genocide, torture, war and ethnic conflict. This process further involves use of hate propaganda in media to denigrate the victim group. In some cases, it culminates in mass murders as with the case of the 1994 Rwanda genocide period where there was mass slaughter of the Tutsi tribe by the Hutu tribe. The Hutus did not value the other human beings (Tutsi) referring to them as cockroaches (Annan & Thompson, 2007).

Dehumanisation was also experienced when the Nazis in Germany called the Jews ‘‘rats’’ which resulted in the killing of the Jews, before and during the Second World War (Kellow & Steeves, 1998). According to the Nazis the Jews were not fully human beings but rather considered them as subhuman species (Lang, 2010). Khmer Rouge executed people in Cambodia during the Democratic Kampuchea regime between April 1975 to January 1979 (Hannum, 1989). It is estimated that more than one and a half million of the eight million population of Cambodia died under this genocidal regime from being over-worked, starved, diseases, as well as outright execution (Kiernan, 1996).

Respect and dignity are viewed as important values of ubuntu (Mangaliso, 2001). After colonialism ubuntu was introduced to restore human dignity as well as the values of humanness (Matolino & Kwindingwi, 2017). Human beings have dignity by virtue of their ability to be in a community or relationship (Metz, 2012). Furthermore. Metz (2012) asserts that a person is a person regardless of their worthy and personhood is validated based on the relationship with other human beings. Similarly, Mcunu (2004) possits that dignity is rooted in personhood and is something intrinsic, irrespective of a person’s community position. Dignity and ubuntu are integrally tied to define a moral ideal of the meaning of human being (Cornell & Muvangua, 2012). Among the principles derived by Metz (2007) that accounts for human dignity is:

"U1: An action is right insofar as it respects a person's dignity; an act is wrong to the extent that it degrades humanity".

In the community, Buber (1970) envisions human beings do not simply have a loving responsibility toward members of the group, but toward all human beings, even human beings they have not come into contact with and are likely never going to see. Given that in such a society human beings love everyone, this argument by Buber is similar to the concept of ubuntu where the core values are shared humanity and humanness. The community is unified by the virtue of shared humanity and therefore humans treat each other as themselves because they are humans. Buber's major theme is that human existence is defined by the engagement in dialogue with each other, the world, and with God. In the "I-Thou" relationship, human beings are united by the fact that they are human beings with specific isolated human qualities.

According to Buber (1970), to relate to the other person as a person of dignity is by engaging with the person in an "I-Thou" encounter instead of "I-It" encounter. Experiencing a person as a thing takes away the human dignity (Buber, 1970). A man is a person, considered as a subject who has rights, dignity and honour. Man is therefore a Thou and not an It (Buber, 1970). The relationship among human beings cannot be the same as the relationship with objects as this will take away the value and may result in considering humans as being part of the world of objects (Buber, 1970), which will take away human dignity and respect.

Ubuntu acts as a uniting factor which brings people together irrespective of their circumstances or wealth because of shared humanity (Sithole, 2001). Various authors agree that ubuntu philosophy places emphasis on relationships with others and humanness rather than wealth (Mbigi, 2005; Shonhiwa, 2006; Shutte, 2001; Taylor, 2014). In Buber's vision, religion brings the holy into everyday life through the building of community. This process allows man to save both himself and his society through a relationship with God. In line with this vision Lutz (2009) agrees with Metz (2007) that ubuntu is an action that produces harmony, reduces discord and develops community and is simultaneously the actions that perfect one's valuable nature as a social being.

2.4.2 *Interconnectedness*

Interconnectedness exists among all human beings because of sharing the fact that we are both humans. When a community is interconnected, they develop ways to live and exist regardless of the difficulties they encounter. The underlying belief in African society is the fact that all human beings

are interconnected and they share a common and communal responsibility for each other (Metz & Gaie, 2010). Mandela (2006) asserts that shared humanity is superior and more enduring than the existing differences that could lead to division. The relationships that exist in the African society is not based on biological bonds but rather on shared humanity.

Interconnectedness of people produces harmony in communities. Tutu (1999) expressed that social harmony is the greatest good in the society. Furthermore, Tutu (1999) encourages the avoidance of anything that undermines the sort after good such as anger, plague, lust through revenge, resentment as well as obtaining success through belligerent competitiveness. This is supported by Metz (2007) who asserts that right things are those that connect people while the wrong things are those that separate people.

Human beings live as part of a community and not as individuals with relationships and interdependence among one another (Lutz, 2009). Social contacts and being given an opportunity for sensory enrichment are considered minimum human necessities (Bennion, 2015). When these minimum human necessities such as sensory enrichment are deprived of human beings there is a risk of serious harm to humans regardless of how resilient they are beforehand (Bennion, 2015). Solitary confinement punishment is an example of such sensory deprivation which have been argued to deteriorate mentally and physically health prisoners or mentally health prisoners (Bennion, 2015). Robert Mangaliso Sobukwe is an example in South Africa of a prisoner that experienced solitary confinement. Sobukwe was kept in isolation between 1963 and 1969 (Hook, 2016) at Robin Island. Sobukwe's living quarters was situated separate from the main prison and he was not allowed contact with any other prisoners. Sobukwe died in 1978, and this could have been also as a result of the isolation he had from other human beings. This is an indication of how important connection is to human beings. Human beings are therefore very much connected to other human beings and isolation can significantly impact them. A person can therefore only be human through relations with other humans.

According to Finke (2001), in Greece offenders of certain crimes were exiled from society and this punishment was deemed so horrible that Socrates chose to drink poison rather than to suffer such banishment of seclusion. Solitary confinement or prison seclusion was considered the worst punishment that could possibly be given (Finke, 2001). Supermax confinement was regarded as inhuman, cruel and degrading treatment and that it should be prohibited due the impact it has on humans (Shalev, 2011). Punishment such as solitary confinement fails as a reformative effect (Lucas, 1976) which further supports the value of connectedness of the human beings to the society. Solitary confinement is a popular form of punishment in the US and European countries.

As a way of survival, African societies have developed a collective way of survival through sharing of values (Mangaliso, 2001; Poovan et al., 2006). The connectedness between humans allows them to be able to share these values. In the African society, being part of a community provides people with a sense of identity and they collectively share a bond and live in harmony to survive. With ubuntu the emphasis is on the collective “we” than on the individual (Mangaliso, 2001) and this is due to the connectedness between human beings.

According to Buber (1970) “I-Thou” is a relation in which “I and Thou” have a shared reality which is a similar concept to ubuntu interconnectedness. Furthermore, Buber (1970) contends that the existence of I is not complete and can only be complete as “I and Thou” meaning human beings can only be complete with others. Taking the creation of human beings after God created Adam, He felt that Adam needed a helper and created Eve which also highlights the lack of completeness in individuals. Through a common relationship with God, the community is interconnected by shared humanity.

According to Buber (1970), when one has experienced the encounter with the eternal, transformation occurs in which human beings begin to see every other human being as themselves. This can be linked to ubuntu as seeing other human beings as oneself is a true indication of a shared bond. The experience explained by Buber (1970) is expected to leave human beings with a sense of loving responsibility for the entire course of the world. This sense of love influences the behaviour of human beings and there is a desire to serve the interests of other human beings than individual interests.

Through a common relationship with God, the community is interconnected by shared humanity. Furthermore, Buber (1970) asserts that everything is bounded by others which is in line with the ubuntu philosophy of togetherness where the community works together to help resolve individual problems. The community sets aside their cultural differences and work together because of personhood. Priority is given to the community rather than to individual needs. People are connected through recognising their similarities rather than focussing on their differences and through this identify their common ground (Mangaliso, 2001).

2.4.3 Compassion

Compassion is defined as the human quality of understanding the impasses of other people and the desire to help them through their dilemma (Poovan et al., 2006). Communality and compassion are some of the indicator values that enrich ubuntu (Mangaliso, 2001). Compassion is an old ethos that

is linked to all spiritual, religious and philosophical traditions of humanity (Plooy, 2014). In addition (Mangaliso, 2001) asserts that “A person is a person through others”, by treating each other as members of one family showing kindness, compassion and humility. According to Mangaliso (2001), compassion involves understanding of other people’s problems and wanting to help people through these situations and also encompasses reaching out to other people. Shared humanity in African society influences compassion among people which results in a shared vision in the community. Shared vision is also a result of understanding each other as well as caring for each other in the community.

According to Broodryk (2006), sharing of food and assets without compensation is an Ubuntu lifestyle in which belongings of the individual are shared as if they are belongings of the rest of the community. The concept of ubuntu stems on the notion that “your pain is my pain, my wealth is your wealth, your salvation is my salvation” (Nussbaum, 2003). It is believed that with ubuntu the African society share burdens during tough times as well as the suffering encountered is shared with the belief that it will lead to reduced suffering. The emphasis is that rewards are shared as well as suffering (Mangaliso, 2001). Sharing of resources among human beings is an indication of understanding other people’s problems and sharing with them in a way to help them through their problems. Sharing is therefore one way in which compassion towards others can be shown.

Sharing leads to sacrificing personal goals which results in collectiveness in the community. The underlying assumption of sharing in the African society is when people give to each other without expecting anything in return. The principle of ubuntu in this concept is that not everything people do should have monetary gain (Broodryk, 2006). The intention is that individual prosperity is shared with others and in situations where there is no prosperity sharing must still happen as it is assumed that there is always someone who may be in a worse situation than you (Broodryk, 2006). In ubuntu, individual possessions are considered to be also possessions of the rest of the community (Mangaliso, 2001). Sharing involves feeding others even when one does not have an income and this process happens in the sharing spirit of ubuntu (Broodryk, 2006).

Compassion leads people to treat each other as members of one family. Compassion is an intangible aspect of ubuntu which is inspired by a sense of collective belonging (Nussbaum, 2003). McNeill, Morrison & Nouwen (1982) provides a comment which defines what compassion entails:

“Compassion asks us to go where it hurts, to enter into places of pain, to share in brokenness, fear, confusion, and anguish. Compassion challenges us to cry out with those in misery, to mourn with those who are lonely, to weep with those in tears. Compassion requires us to be weak with the weak,

vulnerable with the vulnerable, and powerless with the powerless. Compassion means full immersion into the condition of being human".

Compassion is demonstrated through people's urge to reach out to others in a manner that leaves them self-accomplished with self-fulfilment (Broodryk, 2006). Compassion makes people desire to be generous and be willing to make sacrifices to their interest in order to help others (Muchiri, 2011). Compassion is a key value of ubuntu which is associated with love, spontaneity, forgiveness, cohesion and informality (Broodryk, 2006). Poovan et al. (2006) asserts that compassion is about the care people have for each other as well as understanding each other. On the other hand, Broodryk (2006) defines caring as placing the difficulties, interests and situations of others on high priority in an affectionate, empathic and compassionate spirit. Furthermore, Broodryk (2006) identifies that caring is associated with helpfulness, empathy, sympathy, friendliness and charitableness. Compassion is related to empathy or the ability to share the feelings or suffering for another person (Broodryk, 2006).

2.5 African leaders view of Ubuntu

Ubuntu is a concept which has been used in literature by many scholars and similarly have been used by politicians as well as religious leaders. Some of the African leaders have written books on the concept while others have used the concept in famous speeches. This section specifically discusses how some few identified African leaders explain the concept of Ubuntu.

In a 2006 interview, Nelson Mandela opines that Ubuntu is a spirit of generosity which is typified by the willingness to feed and entertain strangers and by seeing wealth as a means to improve the community rather than to benefit individuals. Obama described Ubuntu as espoused by Mandela to represent humanity's common destiny expressed by sharing and caring about others. According to Nussbaum (2003) one of the expression of Ubuntu by former President Nelson Mandela was the donation of one-third of his salary to the Nelson Mandela Children's Fund, which was formed to assist the disadvantaged children in South Africa. Furthermore, Nussbaum (2003) asserts that Mandela's expression of Ubuntu, embraced freedom and respect for all humanity.

According to Mandela (1995) in his autobiography people are born with love and learn to hate: *"I have always known that deep down in every human heart, there is mercy and generosity. No one is born hating another person because of the colour of his skin or his background or his religion. People must learn to hate, and if they can learn to hate, they can be taught to love, for love comes more naturally to the human heart than it's opposite. Even at the grimmest times in prison, when my*

comrades and I were pushed to our limits, I would see a glimmer of humanity in one of the guards, perhaps just for a second, but it was enough to reassure me and keep me going. Man's goodness is a flame that can be hidden but never extinguished" (Mandela, 1995, p. 457).

Tutu (2004) refers to Ubuntu as an African expression of our common humanity, embracing hospitality, selflessly caring about others and working for the common good in communities, which are the essence of an individual's existence. He asserts that Ubuntu decries individualism and that one's humanity is "caught up and inextricably" bound up in yours' (p. 26). Tutu (2004) further espouses Ubuntu as a biblical principle linked to God's creation of a partner for Adam and to interdependence amongst fellow humans and God's other creations as a fundamental law. He points out humans' inability to think, walk, speak or behave like humans until they learn from other humans as proof that individuals need others in order to be truly human. He adds that when humans humiliate or diminish other humans then they are equally diminished. He further credits Ubuntu with the human ability to overcome dehumanisation, to survive and to be resilient without aggressively seeking to out-compete others (Tutu, 2004).

Tutu (2004) further argues that Ubuntu strengthens communities and promotes togetherness by engendering a spirit of generosity, friendliness and empathy, which are the foundation of communal harmony and prosperity. Thus, it gives individuals the opportunity to be part of a common identity which fulfils the fundamental human need for togetherness and interdependence. Tutu (2004) also credits Ubuntu with the self-assurance that emanates from belonging to a greater whole and enables people to be compassionate and to appreciate others without feeling threatened.

Julius Nyerere the former president of the new United Republic of Tanganyika and Zanzibar, which was renamed to the United Republic of Tanzania was well known for advocating for Africanization after independence (Nyerere, 1968). Nyerere supported the call for Africanization and expressed that this should take the form of ujamaa which he defined as a traditional African form of socialism. Ujamaa is a Swahili word meaning "familyhood" (Nyerere, 1966). Julius Nyerere believed that once an African country had achieved independence needed to go through a new phase of historical recovery as a resolution. The revolution had a purpose of extending requirements of human dignity to all African citizens (Nyerere, 1966). According to Nyerere (1966), ujamaa described the traditional socialism.

The traditional socialism advocated by Julius Nyerere was unique to Africa and differed to European kind of socialism (Gade, 2011). The African kind of traditional socialism was according to Gade (2011) to be re-invented as ujamaa. The European social was born of conflict and divided the society.

The African kind of socialism was considered by Julius Nyerere to regard all human beings as members of one extended family and did not divide people based on their class. Julius Nyerere expressed the African socialism of ujamaa to be founded on harmony of the extended family. Julius Nyerere was opposed to European socialism which separated people based on class where one class of men is regarded as the brethren while the other class is regarded as the enemy and there is exploitation of man by man. Like Ubuntu, Ujamaa denotes sharing, togetherness and a feeling of familyhood (Brock-Utne, 2016). Ujamaa wanted to recapture and "spread the values of human dignity, equality, solidarity and human rights that traditionally existed in the family" (Ng'weshemi 2002:73). Ujamaa is an ethic based on ubuntu.

Kwame Nkurumah former president of Ghana argued that politics should be inspired by the philosophy of Consciencism, which he believed to be in agreement with the original humanist principle of Africa (Nkrumah, 1964). According to Nkurumah, Consciencism is the philosophy that takes the historical experience of the African people as its fundamental point of departure in the struggle for emancipation. Nkurumah (1964) believed that the "emancipation of man" was for the entire human family and not selected groups. Kwame Nkurumah believed that the colonials in Ghana and their African employees were infected with European ideals and had neglected the humanist principles (Nkrumah, 1964). Nkurumah's philosophy of Consciencism is understood as an expression of Ubuntu as it reflects and represents some of the elements of the philosophy of Ubuntu. Consciencism seeks to restore dignity and self-respect of the African people that were colonised and this is similar to the concept of Ubuntu. Consciencism allows the African people to re-affirm their humanity.

Léopold Sédar Senghor was the first president of Senegal. He was also a poet and cultural theorists who argued that the Senegalese socialism was to be inspired by Négritude. Léopold Sédar Senghor identified Négritude as the totality of traditional civilizing values of the Negro world (Senghor 1962: 20). Négritude is the "the sum of the cultural values of the black world as they are expressed in the life, the institutions, and the works of black men" (Grinker, Lubkemann & Steiner, 2010). Négritude is a philosophy of being which is also similar to the concept of Ubuntu. Senghor defined the supreme value of black African civilisation as the very essence of being. Senghor considered the values of Négritude to be influential in reintegrating positive values into western civilisation (Grinker, Lubkemann & Steiner, 2010).

In Zambia, former President Kenneth Kaunda introduced the Zambian humanism based on African values of mutual aid, trust and loyalty to the community (Mugumbate & Nyanguru (2013, p. 89). Kenneth Kaunda's 'African Humanism' is a humanist communitarian ethic. The basis of Zambian

humanism is generosity, respect for human dignity, communal ownership of property, galitarianism, the centrality of the human being and lack of social classes are the main characteristics of the traditional society (Ng'weshemi 2002). Kenneth Kaunda was mainly concerned about the high valuation of Man and respect for human dignity (Cornell, 2010). In a statement Kenneth Kaunda expressed that "Africa's gift to world culture must be in the realm of Human Relationships" (Kaunda, 1967: 22). Kaunda opines that the three key social virtues of African Humanism are: mutuality, acceptance and inclusiveness (Cornell, 2010). According to Kaunda it is key to respect the old people as the embody wisdom as well as that they are the living symbols of our continuity with the past. Ubuntu is not far removed from the communitarian and egalitarian humanism of Kenneth Kaunda as it has the same values as proposed by Kenneth Kaunda.

Jomo Kenyatta was the first president of Kenya who introduced the Harambee which means to pull together in Swahili as well as working together as a family or community (Mugumbate & Nyanguru (2013). Harambee is a Kenyan tradition that demonstrates togetherness with people pulling together their talents to achieve one common goal than individual gain. During his presidency Jomo Kenyatta encouraged communities to work together to raise funds for different projects. The concept of Harambee and Ubuntu involve collective effort among people in order to build equitable society (Mafukata & Tshikolomo, 2019). Harambee is used in all aspects of life including things such as raising funds for a wedding, education for a child or medical fees for sick people. Harambee was organised to mobilise resources for doing big projects as well such as building hospitals and schools (Hill, 1991).

2.6 Ubuntu and other related constructs

While Ubuntu is an African concept it is important to note that it is also found in other cultural backgrounds. Ubuntu is a unique African concept which however has some similarities to other cultural backgrounds. Ubuntu is a concept which is likened to the Confucian Chinese traditional ethic as well as similar to Martin Buber "I and Thou" concept. Among other concepts Ubuntu also has some similarities to Buddhism, Wasta as well as Maore culture in New Zealand. It is important to note that while there are similarities to Ubuntu there also exists some differences with these concepts. The following sections will discuss these similar concepts to Ubuntu.

2.6.1 Confucianism

Confucianism is a Chinese traditional ethic which has been described as similar to Ubuntu (Horwitz, 2015; Lutz, 2009). The virtues of Confucianism according to Lutz (2009; pg. 320) are humaneness,

loyalty, filial piety, good faith, rightness, reciprocity, deference, courage and goodness. These are also mentioned by different scholars as the indicator values of Ubuntu. Yearley (1990), identified four indicator values of Confucian namely compassion (benevolence), righteousness, courtesy and rightness as the core virtues of Confucianism. The identified virtues of Confucian are similar to the proposed indicator values of Ubuntu by different scholars.

Horwitz (2015) views Ubuntu as having similar principles to Confucian. According to Horwitz (2015), Confucianism has an emphasis on social capital and cohesion which are also precepts of the Ubuntu construct. Horwitz (2015) asserts that Ubuntu is not extensive in organisations but is limited to some individual case studies. The same principles of collective solidarity as well as communalism observed in the African Ubuntu are said to be found in Chinese paternalism (Horwitz, 2015).

2.6.2 Martin Buber's, "I and Thou" Concept

Martin Buber was a philosopher famous for his book "I and Thou" originally published in 1923 and later translated to English in 1937. The "I and Thou" concept is closely linked to Ubuntu. According to Buber (1970), relationships are the foundation of humanity. Furthermore, Buber (1970) states that "only in relation to another person do we truly become ourselves: Man becomes an I through a You" (Buber 1970, p.80) which is a similar concept to Ubuntu. Buber (1970) described the "I-Thou" relationship as a relationship of empathy, openness, directness and presence.

In the "I-Thou" relationship there is awareness among human beings of having unity of being (Buber, 1970). The "I-Thou" relationship is such that human beings do not distinguish each other as having precise, isolated qualities but rather engage in a dialogue that involves each other's whole being (Buber, 1970). According to Buber (1970), in the "I-Thou" relationship love exists and there is sharing of unity of being between the subjects. Furthermore, "love is also a relation in which "I and Thou" share a sense of respect, caring, commitment and responsibility" (Buber, 1970) which is similar to the precepts of the ubuntu construct. In the community Buber (1970) envisions, human beings do not simply have a loving responsibility toward members of the group, but toward all human beings, even human beings they have never met and will likely never meet. This also is a similar concept to Ubuntu where the community is interconnected through shared humanity. While Buber (1970) philosophy is founded on religion where one has to encounter the eternal You, (God), the principle of Ubuntu philosophy has a similar concept which is however encountered outside of religion.

According to Buber (1970), if you love then the pain and happiness of the beloved are even more important to you than your own which is also a similar concept of Ubuntu where the community

shares losses and gains. Buber (1970) *statement, "Only in relation to another person do we truly become ourselves,"* can be likened to the Nguni proverb translation *"A person is a person through others"* which is used to define Ubuntu.

2.6.3 Buddhism

Buddhism is a religious and philosophical tradition which started about 2500 years and mainly popular in Asia (Gethin, 1998). Buddhism has some similarities with the Ubuntu philosophy. Some of the similarity between Buddhism and Ubuntu philosophy are interdependence, interconnectedness and inseparability (Ramose, 2002). One key differences between Buddhism and Ubuntu is the fact that Buddhism does not allow resolution of contradictions but one has to sit comfortably in the uncomfortableness of the in-between (Robinson-Morris, 2018). According to Lanitieri (2004) Buddhist and Ubuntu notions engender the following in human beings: courage to face suffering and pain, self-awareness, recognising difference as generative, strong social justice orientation, dialogue toward reconciliation and compassion. Furthermore, Robinson-Morris (2018) states that respect is part of both the Buddhism and Ubuntu philosophy.

According to Hanh (1999) Buddhism resonates with Ubuntu in that all things are interconnected endlessly intertwined in an assemblage of relationships in a continuous process. In Buddhism, the Brahmaviharas is used to cultivate the mind of love (Robbinson-Morris, 2018). The Brahmaviharas is represented by the Four Immeasurable Minds. Hanh (1999) provide four immeasurable minds namely loving-kindness, compassion, joy and equanimity which form part of Buddhism notion and these also form part of the indicator values of Ubuntu. According to Robbinson-Morris (2018) loving-kindness is loving others as they are without trying to make them like you. Compassion on the other hand is defined as the "capacity to understand the suffering in oneself and in the other person" (Hanh 2015, p. 18). The third element joy nourishes the other in their otherness through the practice of mindfulness (Robbinson-Morris, 2018. p. 38). The fourth element, Equanimity is the ability to love everyone equally (Robbinson-Morris, 2018). The Buddhist notion of subjectivity is we "inter-are"; ïnterbeing" or non-self (Hanh, 1999) which is similar to the concept of Ubuntu were emphasis is on the collective "we" than the individual (Mangaliso, 2001). Similar to Ubuntu, Buddhism emphasises communal engagement by sharing life experiences, suffering and happiness with the community. Ubuntu and Buddhist represents promise of hospitality (Derrida, 2005). As with Ubuntu, Buddhism gives individuals the opportunity to be part of a common identity which fulfils the fundamental human need for interdependence.

2.6.4 Wasta

Wasta is a phenomenon commonly used in the Arab world which means a connection, networking, relations, power, or 'the influence a person has through personal and family networks' (Neal, 2010, p. 253). Wasta has strong implications in relationships with others, interpersonal and inter-organisational dynamics. According to Weir, Mangaliso & Mangaliso (2010). Wasta phenomenon involves social networking of interpersonal connections which are entrenched in family and relationship ties. This can also be likened to Ubuntu in which relationships with other people and connections are among the indicator values of Ubuntu.

In Wasta people use connections for personal gain (Yahiaoui & Zoubir, 2006). Intermediary Wasta helps bind tribes, families and communities for peace and resolves inter-personal or inter-groups conflict (ALHussan, AL-Husan & Alhesan, 2015). This is similar to the concept of Ubuntu in which peace is key for communities and there is emphasis in creating relationships with other people. Wasta relationships extended to include the broader community, friends and acquaintances (Hutchings and Weir, 2006).

2.6.5 Maori Culture (New Zealand)

Maori people of Aotearoa New Zealand represent part of New Zealand population which is economically marginalised (Michael, Inn & Ngawini, 1993) and have an historical continuity with pre-invasion and pre-colonial societies (Spiller, Pio, Erakovic & Henare, 2011). According to Brannelly, Boulton & te Hiini (2013), Whakapapa forms the foundation of Maori society. Maori worldview emphasise on relationality and places people at the heart of caring (Brannelly, Boulton & te Hiini, 2013), and this resonates with the Ubuntu concept as caring is an indicator value of Ubuntu. Whakapapa may be regarded as 'a shared illumination of the interconnections between people and their spiritual and physical connections to the land and not just collective biological connections' (Graham 2009, p. 2). This is similar to the concept of Ubuntu in which interconnection between people is also indicator value of Ubuntu concept. Whakapapa is closely linked whanaungatanga (relationships, kinships, and sense of connection) which also form part of the Ubuntu core values (Brannelly, Boulton & te Hiini, 2013).

Maori culture in New Zealand has relationship with visitor which is based on six principles namely: manaakitanga (hospitality), mana tangata (social status), maria whenua (property rights), mana Maori motuhake (Maori sovereignty), turangawaewae (sense of place and identity), and reciprocity (Hall, Mitchell & Keelan, 1992). Some of the core values of Ubuntu are part of the principles of Maori

culture relationships. Hospitality, identity and reciprocity constitute some of the core values of the Ubuntu concept. Manaakitanga is defined as an act of providing hospitality and includes values such as generosity and kindness, and responsibility to look after people (Brannelly, Boulton & te Hiini, 2013) which form part of the Ubuntu concept indicator values. Visitors to Maori are expected to have respect and willingness to share and be guided in what they do by Maori way of doing things (Michael, Inn & Ngawini, 1993). Respect and sharing also form part of the Ubuntu concept which is similar to the Maori culture. Manaakitanga also refers to the respect of others, relationships with others as well as treating others with care and respect people (Brannelly, Boulton & te Hiini, 2013) which again are indicator values of Ubuntu. Among the Maori values, kaitiakitanga which is illustrated through interconnectedness of life in a woven universe (Spiller, Pio, Erakovic & Henare, 2011). With an ethic of kaitiakitanga there is reciprocal relationships (Spiller et al., 2011). Interconnectedness and reciprocity forms part of the core values of Ubuntu.

Table 3 summarises the main similarities and differences between Ubuntu and other cultural backgrounds:

Table 3: Comparison of Other cultural backgrounds to Ubuntu Concept

Cultural Background	**Similarities with Ubuntu**	**Differences with Ubuntu**
Confucian	Core values of Ubuntu are the same as some of the core values of Confucian stated below: **Humaneness**, loyalty, filial piety, good faith, rightness, reciprocity, deference, courage and goodness, **compassion** (benevolence), righteousness, courtesy and rightness, collective solidarity, communalism	"Confucian" Chinese struggle to let go of memories of hate. Confucian therefore does not value forgiveness and reconciliation. Confucian pursue harmony and not consensus whereas in the Ubuntu culture both harmony and consensus are important. The definition of community in Confucian culture is not the same as the one in the Ubuntu culture. The Confucian culture emphasises on the care for immediate family ("filial piety") compared to distant relatives or friends. In the Confucian culture strangers are not accommodated while with Ubuntu there is emphasis of hospitality and kindness to strangers (Bell & Metz, 2011).

Martin Buber “I and Thou”	Core values of Ubuntu are the same as some of the core values of the I and Thou concept namely: Humanity, “only in relation to another person do we truly become ourselves, empathy, openness, directness and presence, respect, caring, commitment and responsibility, interconnected through shared humanity	Ubuntu encountered outside religion while the “I and Thou” concept is encountered in religion with emphasis on the relationship with God.
Buddhism	Core values of Ubuntu are the same as some of the core values of Buddhism stated below: Interdependence, interconnectedness, : courage to face suffering and pain, self-awareness, recognising difference as generative, strong social justice orientation, dialogue toward reconciliation and compassion, respect, loving-kindness, compassion, joy and equanimity, collective,	Ubuntu encountered outside religion. With, “Buddhism, particular social attachments are the causes of suffering, and we must break off those attachments to free ourselves of suffering and to pursue eternal bliss (nirvana)” (Bell & Metz, 2011).
Wasta	Core values of Ubuntu are the same as some of the core values of Wasta culture stated below: Relationships with others, interpersonal, connection, networking within family, community or group	Ubuntu encountered outside religion to all humanity. Wasta culture the attributes are not for all humans but selected group of people.
Maori culture in New Zealand	Core values of Ubuntu are the same as some of the core values of Maori culture stated below: Interconnections between people	In the Maori culture there is no emphasis of humanness as with the Ubuntu concept.

	and their spiritual and physical connections, Hospitality, identity and reciprocity, generosity, kindness, respect of others, relationships with others as well as treating others with care and respect people, Interconnectedness	

2.7 Ubuntu and collectivism

Ubuntu has some similarity to collectivism although these constructs are different. Ncube (2010) suggests that the concept of solidarity and collectivism are derived from the concept of Ubuntu. According to Malunga (2009) leadership philosophy of Ubuntu emphasizes relationships and collectivism. Similar to Ubuntu, a collectivist mentality encourages a non-competitive environment and there is teamwork among people (Ncube, 2010). Furthermore, Ncube (2010) argues that the kind of environment contributed by a collectivist mentality promotes solidarity within organisations and a spirit of togetherness where teams work together towards completing shared goals for the good of an organisation. Similar to the concept of Ubuntu, the collectivist mentality results in the needs of the society trumping individual needs (Ncube, 2010).

Collectivist societies give emphasis to people's interdependence, and priority is given to the group and the way in which people behave is mainly controlled by group norms and not personal attitudes (Vogt & Laher, 2009) which is the same principle of Ubuntu concept. Therefore, the main aim of people in a collectivist society is maintaining relationships with other people and avoiding conflict (Triandis, 2001).

Poovan et al. (2006) concluded that ubuntu is a collective value system. The empirical research findings were that survival, a spirit of solidarity, compassion and respect/dignity are the core social values of Ubuntu. According to Poovan et al. (2006) collectivism is the pillar of Ubuntu and hence absence of the collective mindset will result in Africans failing to practice the social values of Ubuntu. The value system of Ubuntu is applied in organisation by firstly tackling tasks collectively, secondly, see themselves as a collective and lastly, have a collective mind-set (Poovan et al., 2006). Poovan et al. (2006) views Collectivism as a backbone for Ubuntu way of life.

According to Triandis' (1996) with the collectivism concept an individual's personal goals support the goals for the survival of the group. Collectivism is therefore a concept that occurs in a group while Ubuntu is a concept which is applicable even to strangers and people that one does not necessarily know. While both concepts Collectivism and Ubuntu emphasise "we" and not "I", it is important to note that the "we" for collectivism is limited to a specific known group while the "we" for Ubuntu is for every human being.

According to Mangaliso (2001) in a culture that is high on collectivism, Ubuntu dictates the sharing of burdens during hard times, which results in reduced suffering. Metz (2011) states the weakness of Ubuntu as the collectivist orientation, in which group-think results in extreme sacrifice for society. West (2014) opines that collectivism is of particular relevance to Ubuntu. Furthermore West (2014) states that a society that maintains the values of Ubuntu would be expected to favour collectivism. Nam, Klemz, Boshoff & Mazibuko (2009) states that Ubuntu is a collectivist cultural value which specifically places high value on harmonious inter-personal relationships, caring for each other and sharing. From these arguments on how Ubuntu is linked to Collectivism by many scholars indicates that Collectivism is viewed as a subset of Ubuntu.

2.8 Previous research on measuring Ubuntu

Motyl (YEM) conducted research and wrote a paper for a class in graduate school at University of Illinois at Chicago. The title of the research was "The Ubuntu scale: A measure of the perception of a common humanity". The scale was mainly developed to assess the degree to which people perceive humans to be interconnected with each other. The research hypothesised that the perception that all human beings share a common humanity is a four-dimensional construct, with distinct but interrelated subscales: (1) a shared human bond, (2) interconnection, (3) shared gains, and (4) shared losses. Motyl indicated that he unfortunately never followed up on this work with larger samples to replicate the factor structure, reliability, and construct validity of the measures. The study used only one sample with 154 college students to develop the scale.

This work was not published, and a rigorous process of scale development was not conducted. Motyl also encouraged the researcher to pursue the topic after consultations. Furthermore, the manner in which the four dimensions of Ubuntu was established is not clearly outlined in the article. The article just states the dimensions without any grounding principle of how the dimensions were established. The research also did not clearly outline the detailed process of scale development followed.

Research was also conducted by Sigger et al. (2010) and published in a CDS research report series in Tanzania entitled: 'Ubuntu' or 'Humanness' As a Management Concept. The research by Sigger et al. (2010) explored the extent to which the management style of African managers is classified as Ubuntu. A measurement scale was developed to measure the philosophy of Ubuntu and datum was collected in Tanzania. The research only used the indicator values of Ubuntu by Mbigi (1997) and did not consider any other literature on the indicator values of Ubuntu. The research by Sigger et al. (2010) was conducted among managers only. The questionnaire was developed for measuring the level of Ubuntu in organisations in several African countries but was only administered to managers in Tanzania only. Rigorous scale development was not followed.

Muller, Smith & Lillah (2019) developed a scale for measuring Ubuntu leadership style. The scale adopted Sigger et al. (2010) scale but was applied in the South African context in the Eastern Cape province. The scale was developed using a single survey with a sample of 428. Similar to the Sigger et al. (2010), the research only used the indicator values of Ubuntu by Mbigi (1997) and did not consider any other literature on the indicator values of Ubuntu. The scale development did not follow rigorous scale development procedures. There was no refinement and validation of the scale with several surveys. Ngcobo (2018) conducted research on the relationship between an employee's perception of a leader's propensity to practice Ubuntu and employee engagement in South Africa using the Ubuntu scale by Sigger et al. (2010). This study did not develop a scale for Ubuntu but used Sigger et al. (2010) existing scale.

Molose, Goldman, & Thomas (2018) conceptualised Ubuntu with four collective values compassion, survival, group solidarity, respect and dignity. The research was conducted using literature review. The literature review span 50 years covering online-datumbases of global and African research. Molose, Thomas, & Goldman (2019) provides a theoretical consolidation of Ubuntu antecedents and developed a multidimensional scale for Ubuntu. Similar to other studies weaknesses Molose et al. (2019) did not conduct a rigorous scale development process with assessment of construct validity and measurement invariance.

According to Terblanche & Boshoff (2008) several researchers use straightforward methods of assessing construct validity such as coefficient alpha, exploratory factor analysis and bivariate correlations. Terblanche & Boshoff (2008) further states that while the traditional methods are valuable researchers should take advantage of the emergence of covariance structure models which provides powerful new tools for detailed assessment and refinement of construct validity. The researcher therefore conducted a thorough assessment of construct validity of Ubuntu scale which was not done by the other studies taking advantage of the SEM over the traditional methods of scale

development. Failure to use the most recent scale development techniques can cause a researcher to have findings that are misleading (Terblanche & Boshoff, 2008). It is therefore critical to state that while attempts have recently been made by scholars to develop a scale for Ubuntu the processes did not involve rigorous scale development procedures recommended by scholars such as Terblanche & Boshoff (2008).

Ojiako, Mashele & Chipulu (2014) conducted a qualitative research in the construction industry in South Africa. The datum was gathered through a focus group of construction project management professionals in South Africa. From the datum analysis the themes that emerged suggests that it may be premature to demand clearly articulated dimensions and clear expectations from Ubuntu (Ojiako et al., 2014). The study therefore concluded that it may be more beneficial to the notion of Ubuntu to have a clearer articulation of the guiding modality of Ubuntu (Ojiako et al., 2014).

2.9 Conclusion

This chapter has conducted a literature review on Ubuntu concept establishing the indicator values of ubuntu. The history of Ubuntu as well as how Ubuntu is defined is discussed. The chapter conducts an analysis of the indicator values of Ubuntu showing respect as the most mentioned indicator value of Ubuntu followed by caring and relationship with others. How some African leaders and politicians view Ubuntu is also discussed. The chapter also compares the concept of Ubuntu to other similar concepts in other cultures such as Confucianism and “I and Thou” concepts. The chapter also highlighted collectivism construct as well as the existing similarities and differences with Ubuntu. Lastly the section discussed some of the research conducted to develop a scale for Ubuntu.

The next chapter discusses Scale Development literature review, the different methods of scale development (traditional and Contemporary) and reasons for choosing contemporary over traditional scale development methods for this particular research. The chapter discusses the development of modern multiple-item measures with more emphasis on construct validity (reliability, convergent validity, discriminant validity and nomological validity), model fit and measurement invariance. The chapter also discusses the statistical analyses used to assess refine and purify the measure.

3 A review of the scale development literature

3.1 Introduction

The current research aims to develop a measure for Ubuntu. Ubuntu concept has faced many challenges in terms of a clear definition. This research therefore aims to operationalise the Ubuntu concept to allow for advancing knowledge. Chapter two provided the study relevant literature and theoretical framework. The concept of Ubuntu was discussed in detail starting from the history of the concept, followed by discussion of the concept of Ubuntu in other cultural backgrounds and how it is linked to the Collectivism construct. The chapter concluded with a discussion on previous research that has been conducted on measuring Ubuntu. This section will discuss literature on scale development comparing traditional and contemporary scale development methods as well as the preferred method for the study. The main aim of this chapter is to discuss the different ways scales are developed and provide context to how the scale for Ubuntu was developed.

Scale development involves a process of identifying and testing a potential set of items that form part of a construct examining how well they confirm expectations about the measurement structure (Hinkin, 1995). An overview of traditional and modern scale development is provided in the following sections. The traditional approach of scale development involves several steps in which the domain of the construct is first specified and is followed by a process of generating items of the sample which capture the specified domain. Datum is collected, and internal consistency tested using coefficient alpha or factor analysis while validity is assessed using correlation analysis (Churchill, 1979). The traditional approach uses reflective indicators which utilises scales.

The study uses Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) and reflective measurement as the preferred method of scale development due to its ability to demonstrate dimensionality, construct validity, causality, internal consistency and measurement error. The most essential requirement in new scale development is construct validity (Jacoby, 1978) and reflective measurement models demonstrate construct validity in rigorous ways. The reflective measure was adopted for this particular research considering the conceptualisation of the Ubuntu construct. Construct validity is a necessary condition for theory development and testing (Jarvis, Mackenzie & Podsakoff, 2003). SEM procedures draw a distinction between structural model and measurement model and also provides rigorous testing of construct reliability, discriminant validity as well as convergent validity. The following sections will provide an overview of the traditional and contemporary scale development measurement protocols.

3.2 Reflective and formative measures

A scale is a document containing questions and other types of items designed to solicit information appropriate for analysis. According to Jarvis et al. (2003), reflective indicators are characteristic of classic test theory and factor analysis models while formative indicators are not designed to interpret observed variables. Reflective measures are interchangeable and when a single indicator is removed construct validity is unchanged (Bollen & Lennox, 1991). The direction of causality for reflective measures is from construct to the indicators (Bollen & Lennox, 1991). The error terms for the reflective model are represented at the construct level unlike the formative models where these are represented at individual items level (Jarvis et al., 2003). The changes in the underlying construct are hypothesised to cause changes in the indicators for reflective measures (Fornell & Bookstein, 1982).

In contrast for the formative models, changes in the measures are hypothesised to cause changes in the underlying construct and there is no assumption that all measure are caused by a single underlying construct (Jarvis et al., 2003). The causality flows are therefore from the indicators to the latent construct jointly as a group determining the empirical and conceptual meaning of the construct (Jarvis et al., 2003). Bollen & Lennox (1991) assert that the assessment of validity for formative models needs to take into account other variables as low internal consistency cannot be used to invalidate causal indicators. Formative measures therefore lack the ability to demonstrate internal consistency (Edwards, 2011). Jarvis et al. (2003) hence suggests assessment of nomological and/or criterion related validity for formative models. Unlike reflective measures, dropping any one of the indicators for formative measures may change the meaning of the construct (Bollen & Lennox, 1991).

In formative measures there is aggregation of an index measure from a set of indicators (Bollen & Lennox, 1991). Furthermore, when the indicators are formative multicollinearity may cause serious problems for the parameter estimates of the measurement model which is however an advantage when it comes to reflective measures (Jarvis et al., 2003). Since the error terms are associated with the construct rather than individual items it becomes less prescriptive on how the scale can be improved (Jarvis et al., 2003). The lack of measurement error on formative measures makes formative models fail to take advantage of the SEM key benefits (Bollen, 1989).

Jarvis et al. (2003) assert that reflective and formative measurement models both have surplus meaning outside of the specific items used to measure the construct. Furthermore, for both reflective and formative measurement models the scale scores do not sufficiently represent the construct (Jarvis et al., 2003).

Figure 4 highlights the key differences between the reflective and formative models:

Source: Jarvis et al. (2003)

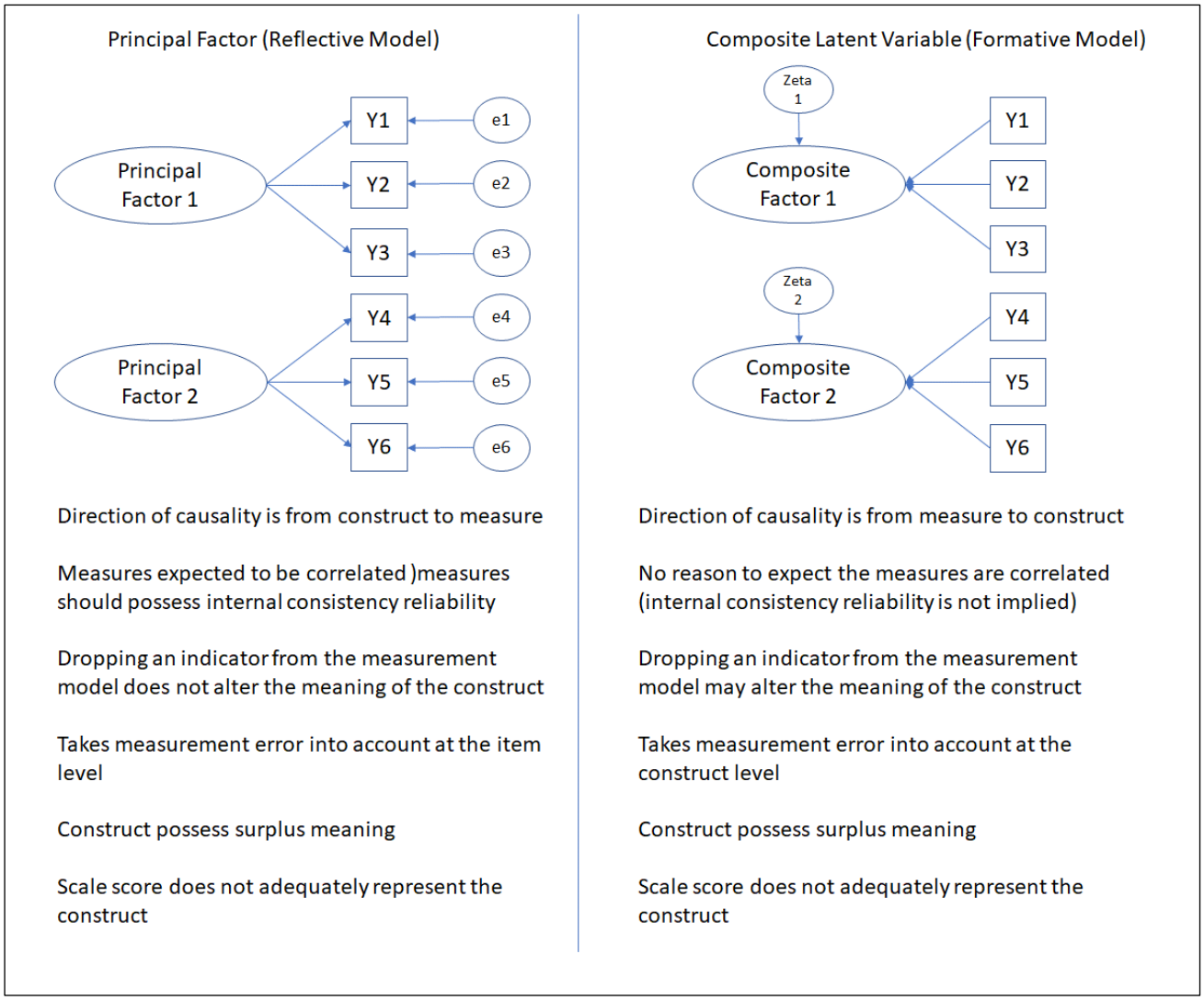

Figure 3: Differences between reflective and formative models

3.3 Traditional scale development

Churchill (1979) developed a framework for developing measures of constructs. The framework aims to develop desirable, reliable and valid measures. Churchill's (1979) procedure comprises of six steps, namely: specification of the domain, generation of the sample items, survey implementation, an iterative process of purifying the measure by assessing reliability and validity of the measure, lastly development of norms.

Specifying the domain involve conceptualising the construct by defining what is included in the description of the construct as well as what is excluded. This process can be done through a thorough review of literature (Churchill, 1979). The second step of generating the items which capture the domain is conducted through exploratory research techniques which includes thorough literature review, experience surveys as well as insight stimulating examples (Churchill, 1979). A literature review will demonstrate how the variable was previously defined as well as the dimensions the variable has (Churchill, 1979). Experience surveys involve the use of a panel of experts or judges who will provide insights into the phenomenon. Generation of the items can also be conducted using critical incidents and focus groups (Churchill, 1979).

Once the items are generated, datum is collected to start a process of purifying the measure. The measure is purified by a series of statistical tests. Churchill (1979) recommends the use of coefficient alpha to measure internal consistency of generated items. A low coefficient alpha is an indication that the sample of items are not capturing the construct well while on the other hand a large coefficient alpha is an indication that the items test associates well as a group. If coefficient alpha is low, then the items with low reliability are removed.

Factor analysis is sometimes conducted first to determine the number of dimensions underlying the construct. Churchill (1979) recommends that if coefficient alpha is too low the suitable approach is to repeat step 1 and 2 namely specifying the domain and generation of the items to ascertain what went wrong. The process of specifying the domain, generating the items and purifying the measures yields a reliable measure with content or face validity but the measure may not have construct validity (Churchill, 1979). According to Nunnally (1967), consistency is a necessary condition for construct validity however not sufficient condition for construct validity. Construct validity is assessed through determining:

1. The extent to which the measure correlates with other measures designed to measure the same thing;
2. Whether the measure behaves as expected.

The measure should therefore have convergent validity and discriminant validity which are assessed through the multitrait-multimethod matrix as well as criterion validity (Churchill, 1979). The last step in scale development according to Churchill (1979) is developing the norms which is done through comparing an individual score with the score achieved by other people. Figure 5 shows the six steps highlighted by Churchill (1979) for developing measures for constructs with desirable psychometric properties.

Source: Churchill, 1979: p.66

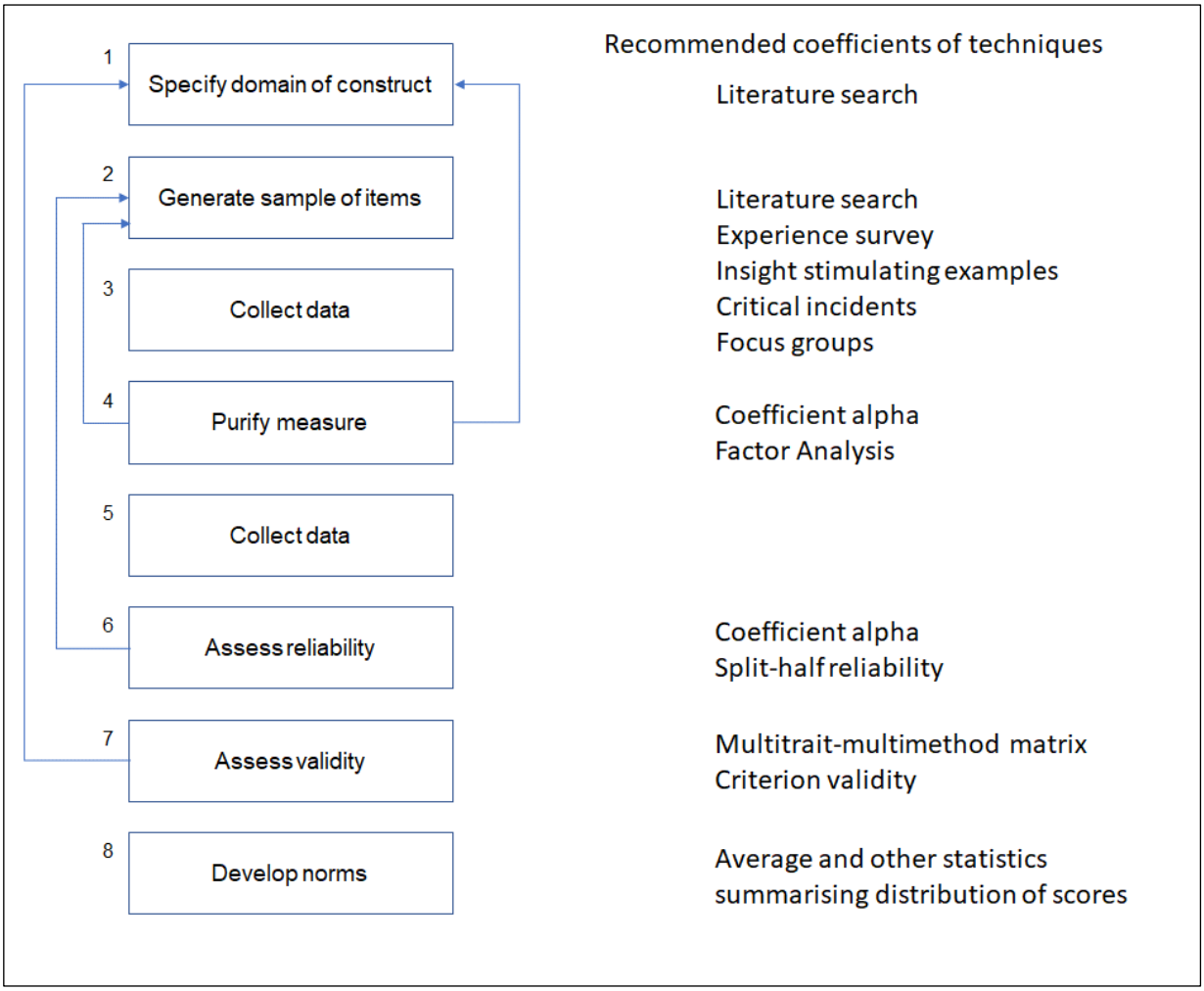

Figure 4: Churchill (1979) Suggested procedure for developing better measures

3.4 Contemporary scale development

Gerbing & Anderson (1988) build on the work by Churchill (1979) and Peter (1979, 1981) and developed an updated paradigm for scale development which uses Confirmatory Factor Analysis for interpretation of unidimensionality. Bollen & Lennox (1991) raised concerns about the traditional methods of scale development assessment of construct reliability and validity advocating that the traditional methods are not suitable for constructs where the direction of causality is postulated to move from the measures to the constructs. Diamantopoulos & Winklhofer (2001) responded to this concern and suggested improved ways of scale development and evaluation. Rossiter (2002) proposed a new procedure for developing scales which is based on content validity. The following sections discuss best practice in contemporary scale development proposed by different scholars:

3.4.1 DeVellis' guidelines in scale development

DeVellis (1991, 2003) developed an eight-step guideline for scale development. The first step is **to determine clearly what needs to be measured**. The construct needs to be formulated with well-grounded substantive theories. It is important at this stage that the researcher be aware of the boundaries of the phenomenon to avoid the content of the scale drifting to unintended domains (DeVellis, 2003). However, theory appropriate for the measurement should be reviewed first. DeVellis (2003) opines that a tentative theoretical model should be specified to guide the scale development. In the first step it is also important for the researcher to be clear if the construct to be measured is clearly distinct from other existing constructs.

Once the scale developer has clearly articulated the purpose of the scale the second step is **to generate a large pool of items** which will form part of the scale. In generating the items, the scale developer will select items that are a true reflection of the purpose of scale. DeVellis (2003) emphasise that redundancy is not necessarily bad at this stage and hence it is important to include many items. Having lots of items is a form of insurance against poor internal consistency (DeVellis, 2003 p.66). In writing the items the first step is to express the relevant idea of the items without taking into account the quality of the item.

When the items have been generated, the next step is to **determine the format of the measurement**. There are several formats in which questions can be formulated. Scales occur in a variety of formats which include Likert scale, semantic differential, visual analogue, binary options and item time frames and these have been proven to be successful in diverse applications (DeVellis, 2003). This step however must occur concurrently with generation of the items. When measuring opinions, beliefs and attitudes Likert scales are widely used (DeVellis, 2003).

Once the format of the measurement is determined, **the initial pool of items is reviewed by a panel of experts**. The scale developer takes a group of knowledgeable people in the content area who will review the pool of items. This process is conducted to help maximise the content validity of the scale. This process involves the experts rating how relevant the item is to what is intended to be measured. The experts can also evaluate the clarity and consciousness of the items and help to point out ways of tapping the phenomenon that has not been included (DeVellis, 2003).

The fifth step involve **considering the inclusion of validation items**. Including additional items in the scale can help to determine the validity of the final scale. Once the scale developer has decided on the construct related and validity items to be included in the measure, the questionnaire can be

administered among a large sample. The sample *should be sufficiently large enough to eliminate subject variance as a significant concern* (DeVellis, 2003 p.88). DeVellis (2003) suggests a sample of 300 as adequate for scale development although he agrees to the fact that scales have been successfully developed with smaller samples. DeVellis (2003) discusses some of the risks associated in using small samples. Firstly, if small samples are used to develop scales the patterns of covariation among the items may not be stable. Small samples may also show an inaccurate picture of internal consistency and are also less likely to be representative of the total population which the scale is intended to measure.

Evaluation of the items is conducted once the scale has been administered. This process involves examining the qualities of the items which include the correlation between the true score of the latent variable and the generated item should be high. Item-scale correlations are computed to examine the properties of each item. High item-scale correlation are more desirable than low values. Item variances are also valuable in assessing the items. Relatively high variance for a scale item is desirable for a quality item. Item means are also computed and used to assess the scale. The item mean that is close to the centre of the range of possible scores is desirable for a quality item. Factor analysis is utilised at this stage to determine which groups of items constitute a unidimensional set if any. At this stage the scale's quality is evaluated by assessing the reliability coefficient, alpha. DeVellis (2003) suggest the following in table 4 for interpretation on coefficient alpha:

Table 4: Coefficient Alpha Acceptance Ranges

Coefficient Alpha Range	**Decision**
Less than 0.60	Unacceptable
0.60 – 0.65	Undesirable
0.65 – 0.70	Minimally acceptable
0.70 – 0.80	Respectable
0.80 – 0.90	Very good
More than 0.90	Consider shortening the scale

The final step is to **optimise the scale length**. DeVellis (2003) suggested a trade-off between a shorter scale and reliability of the measure (longer scale). Reliability of the scale is influenced by the number of items in a scale as well as the extent of the covariation between the items. Items can therefore be dropped to optimise the length of the scale. If a sufficiently large sample is used to develop the scale, it is possible to split the datum into two subsamples. The first sample can serve as the primary sample while the second sample can be used to cross validate.

3.4.2 Hinkin's recommended scale development process

Hinkin (1995) conducted a literature review of 277 articles published from 1989 through 1993 on scale development and provided 'best practices' for developing scales. Hinkins (1995) recommended a three-stage process of scale development namely; item generation, scale development and scale evaluation. The three recommended steps by Hinkins (1995) are discussed below:

Stage 1: Item Generation

Content validity is the most important step during this stage. The main aim is to have a measure which sufficiently captures the specific domain and yet has no unnecessary content. Item generation is done using deductive (also known as "logical partitioning" or "classification from above") and inductive (also known as "grouping" or "classification from below") methods. Deductive scale development utilises literature review to establish the theoretical definition of the construct. Researchers develop items designed to tap a previously defined theoretical universe as well as developing theoretical explanations grounded in theory. With inductive scale development little theory is involved; rather, respondents provide the descriptions of their feelings. Once items are generated inductively or deductively, they are subjected to a process of pretesting. New measures require a clear link between items and their theoretical domain.

Stage 2: Scale Development

Once the set of items that sufficiently captures the domain have been established, the second stage involves the administration of the items to examine how well the items confirm expectations about the structure of the measure. The sample size has to be representative of the population being studied. Large sample sizes allow the researcher to conduct tests of statistical significance. A sample of 150 is sufficient for EFA while a minimum of 200 is recommended for CFA (Hoelter, 1983). A clear description of the sample, the sampling method, response rates as well as questionnaire administration methodology needs to be clearly outlined and taken into consideration when designing the developmental study. Other important factors to take into account include wording of questions (negatively versus positively worded statements), number of items in a measure, sufficient variance among respondents as well as types of scales (e.g. Likert). Negatively worded statements reduce respondent bias patterns, however it is important that the factor loadings of individual items and the impact they have on internal consistency reliability should be examined. Scale length has to

be optimised to minimise response biases, guarantee adequate domain sampling and provide desirable internal consistency.

Factor analysis is the recommended statistical tool for datum reduction as well as refining the construct. Confirmatory factor analysis is used for assessing the measurement model. The quality of the factor structure is assessed by testing statistically the significance of the overall model and the item loadings on factors. The purpose of this analysis is assessing the goodness of fit of rival models. It is recommended that CFA be utilised in developing scales as it allows the researcher more precision in evaluating the measurement model.

Reliability assessment is an important aspect of testing a newly developed scale. The main aspects of reliability are the consistency of the items within a measure and the stability of the measure over time. Cronbach's Alpha is the most commonly accepted measure for internal consistency. Reliability is a necessary condition for validity (Nunnally, 1978). While many measures have acceptable internal consistency reliability they lack content validity attributable to multidimensionality. It is not adequate to simply use internal consistency reliabilities for scale development. Stability of a measure over time can be examined using test re-test.

Stage 3: Scale Evaluation

This stage involves demonstrating the existence of a nomological network of relations with other variables to provide further evidence of construct validity. There are three proposed ways of providing further evidence of construct validity, namely: 1) examining criterion related validity 2) assessing two groups who would be expected to differ on the measure 3) demonstration of convergent and discriminant validity using the multitrait-multimethod matrix. Criterion-related validity is to be confirmed using correlation or regression analysis as well as structural equation modelling.

3.4.3 Rossiter C-OAR-SE procedure for scale development

Rossiter (2002) proposed a new procedure: Construct definition, Object classification, Attribute classification, Rater identification, Scale formation and Enumeration and reporting (C-OAR-SE) for developing scales to measure marketing constructs. The proposed procedure has six steps for developing proper measures. Construct validity is the only validity that is considered essential with this procedure. While the procedure draws from previous work the author criticised Churchill (1979) and the traditional scale development procedure consists of only of a subset of the C-OAR-SE procedure which is one of the six cells.

Traditional scale development were criticised for deleting theoretically necessary items in the search of factorial unidimensionality and on the other hand adding of unnecessary and often conceptually unsuitable items to obtain a high alpha and using high alpha as solitary evidence of validity. Rossiter (2002) demonstrates why construct validity and predictive validity are not suitable for scale evaluation as well as why reliability should be regarded only as precision-of-score estimate. Rossiter (2002) procedure is reliant on logical arguments and the consensus of experts on open ended input from pre-interviews with raters. Below is a diagram which shows the proposed procedure for scale development by Rossiter (2002).

Source: Rossiter, 2002: p.306 -307

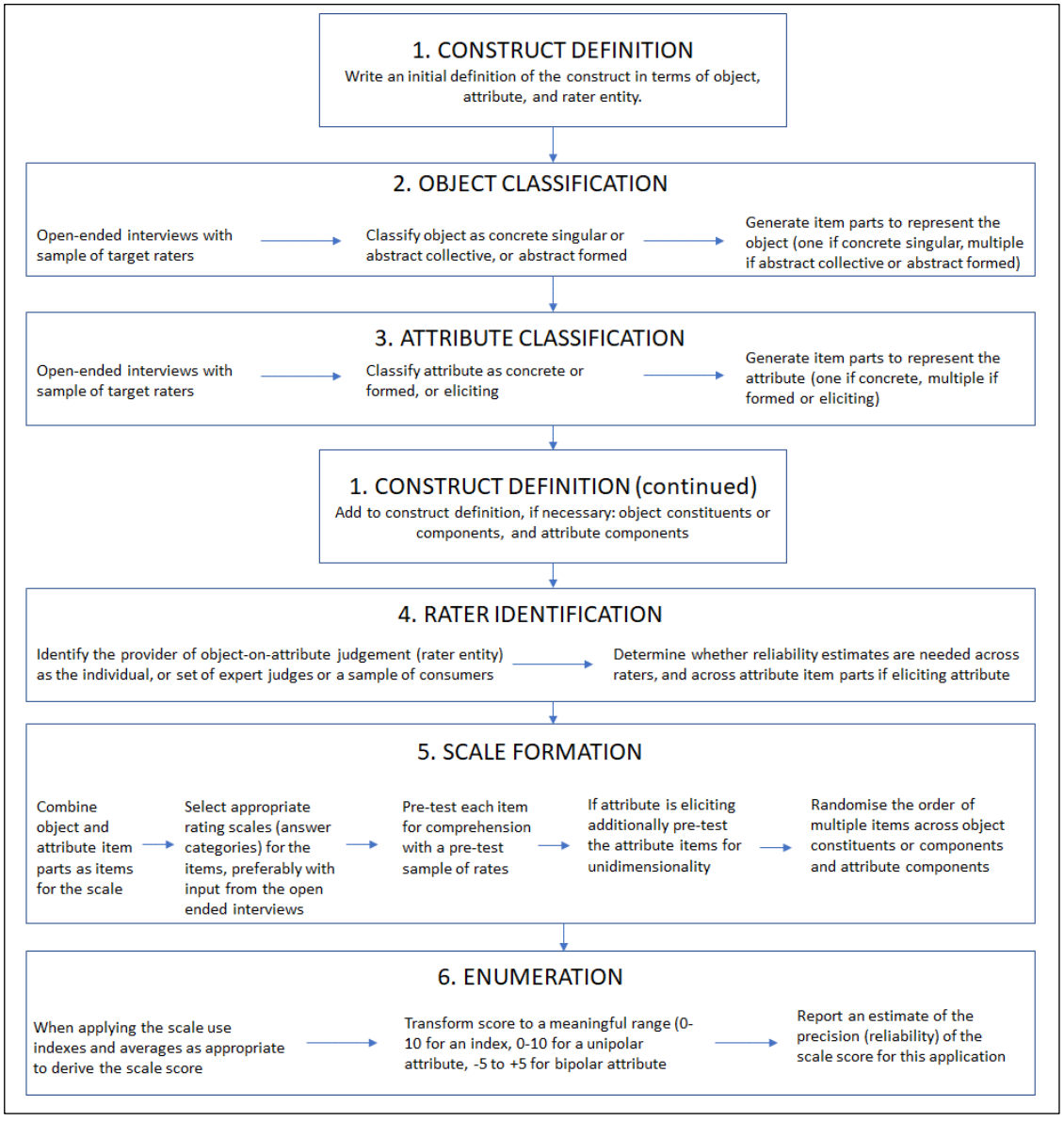

Figure 5: Steps in C-OAR-SE procedure for scale development

According to Finn & Kayande (2005) Rossiters (2002) C-OAR-SE procedure lacked empirical validation of the conceptualisation of constructs and they recommended a multivariate generalisability theory which integrated the two approaches to emphasise both conceptual rigor and empirical validation of constructs. Diamantopoulos (2005) praised Rossiter's (2002) procedure for scale development for going beyond coefficient alpha, the domain sampling model and classical theory. Diamantopoulos (2005) agreed with Rossiter (2002) that the traditional scale development (Churchill, 1979; Nunnally, 1978) approaches that used EFA models to identify dimensionality of constructs was irrational practices. Furthermore Diamantopoulos (2005) agreed that using the coefficient alpha level of 0.70 not reached as being illogical practices.

Diamantopoulos (2005) however disagreed with Rossiter (2002) on a number of issues. The highlighted problematic issues of Rossiter (2002) C-OAR-SE procedure include the potential confounding and connotative meaning during construct and object definition, the use of single item measures and construction of formed attribute scales, incorporating the rater entity as part of the focal construct and the reliance on content validity dismissing other forms of validity such as discriminant validity (Diamantopoulos, 2005).

3.4.4 Worthington & Whittaker's recommended best practice for scale development

Worthington & Whittaker (2006) conducted a content analysis of scale development research spanning over 10 years (1994 - 2004) in the Journal of Counseling Psychology. Worthington & Whittaker (2006) specifically focused on analysing and discussing the characteristics of EFA and CFA procedures in the scale development studies with respect to sample characteristics, factorability, extraction methods, rotation methods, item deletion or retention, factor retention and model fit indexes. The authors recommended best practice scale development research in counselling psychology using EFA and CFA. Worthington & Whittaker (2006) provided eight steps for the development of new scales which is similar to that of other researchers. Table 5 shows the recommended eight steps for developing new scales:

Table 5: Worthington & Whittaker's recommended best practice for scale development

Steps in constructing new instrument	Description
1. Determine clearly what you want to measure	Provide a sound conceptual foundation of the construct by clearly defining the construct using existing theory and research. Attributes of abstract constructs must also be clearly defined. If the construct in not clearly defined there is risk of including items which are not related to the construct as well as excluding important components of the domain.
2. Generate an item pool	An item pool is generated to tap the construct. The main objective is to derive a set of items that clearly represent the construct yielding a stable set of underlying factors which precisely represents the construct when factor-analytic, datum reduction techniques are utilised. Poorly worded items as well as items that do not clearly articulate the construct introduces possible sources of error variance and reduces the strength of correlation. Generated items should be clear, concise, readable, distinct and reflect the scale's purpose.
3. Determine the format of the measure	The questionnaire is recommended to be as short as possible. Long questionnaire affects the response rate of respondents.
4. Have experts review the initial item pool	Knowledgeable expects assess the quality of the items. Experts will review the content validity and evaluate the items for clarity, conciseness, grammar, reading level, face validity and redundancy. Expects will also propose new items and length of administration.
5. Consider inclusion of validation items	Assessment of discriminant and convergent validity is important.
6. Administer items to a development sample	Ensure sample size is large enough to generalise results to the entire population. Sample sizes of between 150 to 200 are likely to be adequate while a sample of 300 is said to be adequate in most cases. Large sample sizes yield stable correlations among variables and will result in greater replicability of EFA outcomes.
7. Evaluate the items	Use EFA to evaluate the items. Also use SEM such as the CFA, goodness of fit, indices, model fit and model specification.
8. Optimise scale length	A procedure for deleting or retaining items should be set to optimise the length of the scale. It is also important to optimise length by trading-off between length and reliability.

3.5 DEVELOPMENT OF MODERN MULTIPLE-ITEM MEASURES

A number of protocols have been identified for developing multi-item measures in terms of construct validity, reliability, unidimensionality, as well as invariance (Anderson & Gerbing, 1982). The following sections discusses these identified protocols in detail:

3.5.1 Construct Validity

Validity is defined as the degree to which the results of any given study precisely reflects the concept being measured (Collis & Hussey, 2003). When developing a scale, a construct is valid when the generated items measure the dimension it is intended to measure (Nunnally, 1967). Construct validity requires the examination of the scores of a measure determining whether the measure performed as expected (Peter, 1981). According to Cronbach and Meehl (1955), to obtain content and construct validity it is critical to have both adequate domain sampling and parsimony. Cronbach & Meehl (1955) propose factor analysis, internal consistency, and test-retest reliability as possible ways to examine the evidence of construct validity. Furthermore, construct validity can be demonstrated by showing the evidence of nomological network of relationships with other variables through criterion-related validity, demonstrating convergent and discriminant validity by using the multitrait-multimethod matrix as well as assessment of two groups that are expected to differ on the measure. For a measure to have construct validity the items must reflect what they are intended to measure (i.e., face validity) and at the same time represent a proper sample of the domain of a construct (i.e., content validity), and demonstrate discriminant, convergent, and predictive validity (Hardesty & Bearden, 2004). The types of construct validity that are tested to ensure a good measure in this research are:

- Face validity
- Convergent validity
- Discriminant validity
- Nomological validity

3.5.1.1 Face validity

Face validity is the extent to which a measure reflects what it is intended to measure (Nunnally & Bernstein, 1994). Face validity is also defined as the extent to which respondents judge that the items of a questionnaire are suitable to measure the intended construct or assessment objectives (Allen & Yen, 1979; Anastasi,1988; Nevo, 1985).

It is important to note that lack of face validity on a scale is an indication that the overall measure is not a valid operationalisation of the construct of interest (Hardesty & Bearden, 2004). Face validity is therefore a necessary but not sufficient condition for ensuring construct validity (Hardesty & Bearden, 2004).

3.5.1.2 Convergent validity

Convergent validity is the extent to which the measure is highly similar to other constructs developed to measure the same construct and are theoretically similar (Churchill, 1979; Netemeyer, Bearden & Sharma, 2003; Pedhazur & Schmelkin, 1991). Convergent validity assumes that constructs that should be theoretically correlated to each other are, in fact, found to be correlated. One of the several ways to confirm convergent validity is using factor loadings. Factor loadings that are high (above 0.50) confirm convergent validity in the measurement model of SEM (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988; Hair, Black, Babin, Anderson, & Tatham, 2006). Convergent validity can be tested using two scales theorised to measure the same concepts (DeVellis, 1991). A strong positive correlation between these measures provides evidence of convergent validity. Convergent validity can also be estimated using average variance extracted (AVE). AVE measures the amount of variance that a construct captures in relation to the amount of variance due to measurement error (Chin, 1998). CFA is conducted to establish the AVE. When the AVE value is less than 0.5 it is an indication that on average there is more error in the items than the variance explained by the latent factor structure imposed on the measure. For each latent structure an AVE should be calculated to assess convergent validity in the measurement model (Hair et al., 2010).

3.5.1.3 Discriminant validity

Discriminant validity is the degree to which two measures designed to measure similar, but conceptually different constructs are related (Netemeyer et al., 2003 p.13). Discriminant validity is used to assess the degree to which a measure of a construct is distinct from measures of other constructs that are theoretically related. Evidence of discriminant validity can be shown by low to moderate correlation (Netemeyer et al., 2003). The aim of discriminant validity is demonstrating that the measure is different from other related measures (DeVellis, 2003; Netemeyer et al., 2003; Pedhazur & Schmelkin, 1991). Discriminant validity is a representation of how unique a measure is. Factor analysis is used to confirm discriminant validity when the factor structure that emerges confirms underlying dimensions were as predicted. A multitrait-multimethod approach is one way in which discriminant validity is assessed. The AVE of a construct is expected to be larger than the shared variance between the constructs for Discriminant validity to be confirmed.

Factor Loading is referred to the correlation of items that are theoretically related to each other for a latent construct. Discriminant validity is confirmed when the AVE is greater than the square of the correlation (Fornell & Larcker, 1981; Hair et al., 2010). Shared variance is the amount of variation in each item that the factors accounts for. The AVE-SV comparison method is thought to be a very conservative test of discriminant validity (Voorhees, Brady, Calantone & Ramirez, 2016). Voorhees et al. (2016) opines that the AVE-SV test is weakened as Partial Least Squares (PLS) methods tend to overestimate item loadings. Furthermore, inflated AVE estimates interfere with the ability of the AVE-SV test to detect discriminant validity violations (Voorhees et al., 2016). Researchers tend to therefore use the AVE-SV test last declaring that the test is the "most stringent" (Maxham & Netemeyer, 2002; Wang & Netemeyer, 2002). It is therefore critical to show results of discriminant validity using other methods.

Discriminant validity can also be tested using the heterotrait-monotrait (HTMT) ratio (Henseler, Ringle & Sarstedt, 2015) which is the most recent addition to the marketing literature. The HTMT test is obtained by calculating the ratio of the average correlations between constructs to the geometric mean of the average correlations within items of the same constructs (Voorhees et al., 2016 p124). This test is therefore similar in mechanics to the AVE-SV test. HTMT is regarded as a more comprehensive and less constrained test for discriminant validity when doing variance-based SEM. According to Henseler et al. (2015), the AVE-SV test performed poorly in their simulations compared to the HTMT. Discriminant validity is violated when HTMT ratio approaches 1. Henseler et al. (2015) suggest a cut off of 0.85 and 0.90 as useful starting points for discriminant validity violations. According to Voorhees et al. (2016) the HTMT ratio value of 0.85 offer the best balance between high detection and low arbitrary rates for discriminant validity assessment. This study used 0.85 as the cut-off for the HTMT ratio.

3.5.1.4 Nomological validity

Nomological validity assesses whether there is consistency between the relationships among measures and theoretical predictions (Netemeyer et al., 2003). Nomological validity assesses the extent to which constructs that are empirically related are theoretically related (Netemeyer et al., 2003). Nomological validity is assessed using simple correlation between the construct of interest and the measures of other constructs (Spiro & Weitz, 1990). Nomological validity can be assessed in a two-step approach where the first step is to develop the measurement model and evaluate it separately from the full SEM (Gerbing & Anderson, 1988).

3.5.2 Reliability

Reliability is the extent to which items of a measure are consistent and stable over time (Hinkin, 1995). It is a measure which provides the extent to which the measurements can be repeated free from random error (Nunnally 1967). Reliability is the degree to which measures are free from error yielding consistent results (Peter, 1981). Reliability is a necessary but not sufficient condition of validity of instruments. The measure provides an estimation of how precise a score is obtained from a scale (Weiss & Davison, 1981). The reliability of a measurement scale can be assessed using three basic methods: internal consistency, test-retest and alternative forms (Peter, 1979). The three methods establish the proportion of variance in a measurement scale that is systematic through correlating the scores obtained from a scale to a replication of the scale (Peter, 1979).

The most commonly used measure of reliability is internal consistency reliability which is accessed using the Cronbach coefficient alpha (Cooper & Schindler, 2007; Peterson, 1994). Cronbach's coefficient alpha metric (α) was developed in 1951 by Lee Cronbach as a generalised measure of internal consistency of multi-item scale (Peterson, 1994 p.382). Internal consistency is the extent to which the item responses are correlated to the total test score or the homogeneity of items in a measure (Hinkin, 1995). The number of items that define the scale and the reliabilities of those items is used to determine the reliability of a scale (Churchill, 1979). The Cronbach's coefficient alpha ranges from zero to one and Nunnally (1978) recommends an internal consistent reliability score of 0.7 which has been widely accepted by many researchers (Hinkin, 1995; Peterson, 1994).

Test-retest reliability involves applying the same scale twice to the same subjects under the same condition and the scores from the two administrations are correlated to produce an index which provides the stability of the measure over time (Peter, 1979). Peter (1979) recommends a two-week interval between the two administrations. According to Stone (1978) test-retest reliability is used to assess the stability of a measure in situations where there is no expectation of attribute being measured to change over time.

With alternative form reliability, the same subjects are measured with two scales which are administered at two different times (usually two weeks interval). The two administered scales are designed to be the same in content with differences allowing the first measurement not to substantially affect remeasurement (Peter, 1979). The reliability coefficient is obtained from correlating the resulting scores from the two admirations (Peter, 1979).

While coefficient alpha is a widely used method of assessing reliability, several scholars have identified its limitations (Agbo, 2010; Cronbach & Shavelson, 2004; Loevinger, 1954; Sijtsma, 2009). According to Sijtsma (2009), alpha is a lower bound to the reliability thereby providing a gross underestimate of reliability. Furthermore, alpha is greatly criticised for persistently and incorrectly being taken as a measure of the internal structure of the test providing evidence that items of a test measure a similar thing (Sijtsma, 2009). Loevinger (1954) highlights that high reliability of a measure can be obtained due to the narrowness of the content that will limit predictive utility which McDonald (1999) showed to be as a result of the assumptions of classical test theory. Schmitt (1996) asserts that alpha does not measure unidimensionality and hence may underestimate reliability if a scale is multidimensional.

Having identified the shortcomings of alpha, Cronbach recommended a broader view of reliability embodied in generalisability theory (Cronbach & Shavelson, 2004). Agbo (2010) provided some recommendations to the shortcomings of the coefficient alpha. Table 6 summarises the proposed recommendations to the shortcomings of alpha:

Table 6: Ways to overcome the shortcomings of coefficient alpha

Non-supplementary recommendations	
Use of cut-off point	Strict reliance on cut off point for alpha is faulted because it was not empirically grounded and also high values of alpha can be caused by various ways compromising reliability.
Increasing scale length	Increasing the number of items to increase alpha can cause redundancy. New items may improve the alpha coefficient but will not have increased information in the scale.
Supplementary recommendations	
Interitem correlation	Clark & Watson (1995) recommends the use of average interitem correlation (AIC) to infer internal consistency. AIC is influenced by outliers hence Interitem correlation range (ICR) is recommended and should range 0.15-0.50. ICR is a supplementary index and not recommended to be used on its own as a measure for internal consistency.
Use of standard deviation	Use of ratio of standard deviation to establish if a scale deviates from the classical parallel. Recommended as an initial inspection of dimensionality.
Confidence interval (CI) of Alpha	CI provides the best point estimate of the population parameter of interest. The CI should be obtained under the assumption that it is Asymptomatically Distribution Free (ADF). ADF interval estimation is robust than the CI alpha CI obtained assuming normal theory
Factoring for latent variable	The best most recommended way of checking for dimensionality is using CFA or EFA when the scale consists of large items (Clark & Watson, 1995). Factor analysis goes beyond testing for reliability to also inferring construct validity.

3.5.3 Unidimensionality

Unidimensionality exists when a set of indicators share only a single underlying factor (Gerbing & Anderson, 1988 p.187). Confirmatory Factor Analysis of a multiple indicator model directly tests unidimensionality (Gerbing & Anderson, 1988). According to Gerbing & Anderson (1988), confirmatory factor analysis provides a stricter understanding of unidimensionality compared to the traditional methods such as coefficient alpha, item-total correlations, and exploratory factor analysis. Coefficient alpha is used to assess reliability of a measure and cannot evaluate unidimensionality. Item-total correlation and exploratory factor analysis are therefore not used to test for unidimensionality but rather used as preliminary analysis in scale development (Gerbing & Anderson, 1988). The overall goodness-of-fit of the measure is evaluated based on the similarity between the predicted and actual correlation (Gerbing & Anderson, 1988). Unidimensionality is necessary but not sufficient for construct validity (Gerbing & Anderson, 1988).

3.5.4 Measurement Invariance

Validity of models of consumer behaviour developed in one group should be examined in other groups (Bagozzi, 1994). Establishment of measurement invariance is identified as a logical prerequisite when conducting substantive cross-group comparisons (Vandenberg & Lance 2000). Measurement invariance is defined as whether or not measurement operations yield measures of the same attribute when observed or studied under different conditions (Hui and Triandis, 1985). Concern has been growing to determine measurement invariance by establishing if the items that are used in a survey instrument have the same meaning to members of different groups (Cheung & Rensvold, 2002). If there is no evidence to support a measure's invariance then conclusions based on the scale are ambiguous or erroneous (Cheung & Rensvold, 2002). Multigroup confirmatory factor analysis is the recommended approach to testing cross group measurement invariance (Cheung & Rensvold, 2002; Jöreskog, 1971). The following sections will discuss the tests of invariance:

3.5.4.1 Configural Invariance

Configural invariance is supported if the specified model with zero loadings on nontarget factors fits the datum well for the different groups (Steenkamp & Baumgartner, 1998). According to Steenkamp & Baumgartner (1998), with configural invariance all salient factor loadings are significantly and substantially different from zero and the correlations between the factors are significantly below unity. Participants from the different groups conceptualise the constructs in a similar manner (He, Merz & Alden, 2008; Riordan & Vandenberg, 1994) implying that the structure of the model is the same in

the different groups. Datum collected for each of the different groups decompose into similar factors and similar items are associated with each factor if configural invariance exists (Meredith, 1993).

3.5.4.2 Metric Invariance

Assessment of metric invariance must be done with all the factor loading parameters equal across groups (Cheung & Rensvold, 2002). Metric invariance provides for a stronger test of invariance by introducing the concept of equal metrics or scale intervals across the different groups (Steenkamp & Baumgartner, 1998). The structure of the model should be similar across the groups. Metric invariance is tested by constraining the factor loadings to be similar across the different groups (Steenkamp & Baumgartner, 1998). Samples collected across groups may provide datum that may indicate conceptual agreement in terms of the type and number of underlying constructs as well as the items that are associated with each construct (Cheung & Rensvold, 2002). Furthermore, the strengths of the relations between specific scale items and the underlying constructs may however differ and the datum may show some disagreement on how the constructs are manifested (Cheung & Rensvold, 2002).

3.5.4.3 Scalar Invariance

Scalar invariance implies that the cross-group differences in the means of observed items are due to differences of the underlying construct/s (Steenkamp & Baumgartner, 1998 p.80). Furthermore, scalar invariance addresses the question of whether there is consistency between cross-group differences in latent means and cross group differences in observed means (Steenkamp & Baumgartner, 1998 p.80). Regression on the latent variables are constrained to be similar across the groups (Vandenberg & Lance 2000). There is systematic response bias which is as a result of cross group differences (He, Merz & Alden, 2008). This bias is referred to as additive bias (Meredith, 1993) and affects the observed means with no impact on the response variation.

3.5.4.4 Factor Covariance invariance

The factor covariances must be constrained to be the same across groups. According to Steenkamp & Baumgartner (1998) to assess factor covariance invariance the structure of the model factor loadings, vector of regression intercepts and the measurement error variance covariance matrix must be the same across groups.

3.5.4.5 Error Variance Invariance

The structure of the model must be similar across groups as well as the factor loadings, the vector of regression intercepts, measurement error variance covariance matrix and latent variable variance

covariance matrix must be constrained to be the same across groups (Steenkamp & Baumgartner, 1998).

3.6 Exploratory factor analysis

Exploratory factor analysis (EFA) is a scale development technique used to reduce the number of indicators (Gerbing & Anderson,1988). EFA is used to reduce the generated items and derive an initial structure for the measure as well as to assess internal consistency. According to Churchill (1979), EFA is used to determine the dimensions of a construct. In the absence of sufficiently detailed theory EFA is useful as a preliminary analysis to determine the relations of the indicators to the underlying constructs (Gerbing & Anderson,1988). Resulting factor loadings are used to construct scales. EFA is therefore a useful preliminary technique for scale construction (Gerbing & Anderson,1988). During initial development of a measure EFA is used to assess construct validity as well as examining the underlying dimensionality of the item set (Worthington & Whittaker, 2006).

Correlations of the items are calculated and items which do not have corrected item-to-total correlations above 0.5 are deleted (Bearden, Netemeyer & Teel, 1989; Lastovicka, Bettenoourt, Hughner & Kuntze, 1999). This implies that all the items that do not have statistically significant higher correlations with the dimensions to which they were hypothesised to belong to in comparison to item correlations with remaining dimension total scores are removed from the scale (Bearden et al., 1989). Exploratory principal axes factor analysis is commonly used to obtain these items loadings (Bearden et al., 1989; Lastovicka et al., 1999). Responses to items of a measure which is drawn from the domain of a single construct must be highly intercorrelated (Churchill, 1979). Therefore, when the interitem correlations are low, it is an indication that some of the items were not drawn from the appropriate domain and hence the items produce error and unreliability (Churchill, 1979).

3.7 Structural equation modeling

Structural equation modeling (SEM) is a statistical technique that allows scholars to test complete theories and concepts (Rigdon, 1998). SEM is a methodology for investigating theory-derived structural hypotheses (Mueller & Hancock, 2008). SEM foundations are rooted in classical measured variable path analysis (Wright, 1918) and confirmatory factor analysis (Jöreskog & Sörbom, 1982). SEM models are usually presented in path diagrams which is a summary of the theoretically suggested relationships among latent variables and indicator variables and directional (regression) and non-directional (correlational) relationships among latent variables (Bowen & Guo, 2011 p.7). SEM has become a famous multivariate analytical tool due to SEM software packages such as

AMOS, LISREL, EQS and Mplus. One of the most popular uses of SEM is CFA. SEM encompasses a set of multivariate statistical approaches.

Once a theoretically meaningful factor structure has been established using EFA, an SEM is used to specify the resulting factor solution in the SEM confirmatory procedure. According to Worthington & Whittaker (2006), SEM can be used to examine competing models in assessing the degree to which one hypothesised model fits the datum in a better way than an alternative model. Goodness of fit of the model is assessed to support the factor structure reliability and validity of the scale (Worthington & Whittaker, 2006). SEM techniques help to facilitate the assessment of multi-item measures in terms of dimensionality, reliability, and validity (e.g., Anderson & Gerbing 1982; Steenkamp & van Trijp, 1991).

SEM is a powerful confirmatory technique that allows the researcher to have control on the form of constraints that are put on items and factors when analysing a hypothesised model. Terblanche & Boshoff (2008) illustrates how contrast validity can be improved by using contemporary techniques such as SEM. SEMs have the advantages of controlling for measurement error and provides statistical tests of construct dimensionality (Terblanche & Boshoff, 2008) Latent variables (also known as factors, constructs, measures, dimensions) in an SEM are measures of unobserved phenomena and theoretical constructs such as attitudes, social relationships, emotions which are measured with multiple observed items.

SEM was used to demonstrate predictive validity of the Ubuntu scale. The advantage of using an SEM to demonstrate predictive validity of a scale is that SEM allows the researcher to estimate the hypothetical structure of the derived measure and secondly SEM help the researcher to estimate the relationships between the constructs without measurement error unlike other statistical tools such as regression analysis (Singh, 2009). Kenny (2014) states that a sample size of 200 is sufficient for conducting an SEM with latent variables.

3.8 Confirmatory factor analysis (CFA)

Once a theoretically meaningful factor structure has been explored using the EFA, CFA imposes a model on the datum through a process of rigorous specification. CFA is a statistical analytical tool used to investigate the structure of multivariate datum. In a CFA model the observed variables are represented as a linear combination of the unobserved variables with an independent error term (Fox, 2010). CFA is used for multiple purposes which include the following: developing new measures, evaluating psychometric properties of new and existing measures, construct validation,

testing method effects and testing measurement invariance across groups or populations (Harrington, 2009).

CFA is most commonly used in scale development process to help support the validity of a scale following an EFA (Gerbing & Anderson, 1988). Confirmatory factor analysis usage in building and evaluating measurement scales is a fairly new development. CFA is a useful tool for assessing dimensionality of a scale (Gerbing & Anderson, 1988). CFA is seen as advantageous in that it allows the researcher more precision in evaluating the measurement model (Hinkin, 1995).

Absolute fit indices provide the critical information on how well the proposed theory fits the datum. Absolute fit indices include Chi-Square test, RMSEA, GFI, AGFI, the RMR and the SRMR. The following section discusses these indices:

3.8.1 Chi-Square (x^2)

The chi-square test statistic is used to test the overall model fit in SEM. The chi-square value is used to assess the extent to which the sample and the fitted covariances matrices differ (Hu & Bentler, 1999). The p-values are measured against the level of significance or alpha. The most common used alpha value for significance testing is 0.05 (Barrett, 2007) at 95% confidence interval. The null hypothesis (no difference) is accepted if the p-value>0.05 (Barrett, 2007) while the null hypothesis is rejected if the p-value is less than or equal to the 0.05 implying that the model does not fit the datum.

A good model fit would provide an insignificant result at a 0.05 threshold (Barrett, 2007. The chi-square test however has limitations in its use although it has gained popularity as a fit statistic. Firstly, the chi-square test is sensitive to sample sizes. Due to its sensitivity to sample sizes when large samples are used the chi-square test nearly always rejects the model (Bentler & Bonnet, 1980; Jöreskog & Sörbom, 1993) while on the hand when the samples are small the chi-square test lacks power hence may fail to discriminate between good and poor fitting models (Kenny & McCoach, 2003). Due to its sensitivity to sample the chi-square test statistic is often criticised as a measure for model fit (Bentler & Bonnet, 1980). According to Worthington & Whittaker (2006) to supplement the chi-square statistic, there are three alternative fit indices that are used to evaluate the model fit namely:

1. Incremental fit indices which are used to measure the improvement in a model's fit to the datum when baseline SEM is compared to a specific SEM

2. Absolute fit indices which are used to measure how well an SEM is able to explain the relationships found in the sample datum.
3. Predictive fit indices (or information criteria) which are used to measure how well the SEM would fit in other samples from the same population.

It is therefore not recommended to rely on the chi-square test alone for measure of fit (Bagozzi & Foxall, 1996). Kenny (2014) recommends the use of chi-square for sample sizes between 75 and 200 but not for models with samples larger than 400. Secondly the chi-square test assumes multivariate normality hence when there are deviations from normality the model can be rejected even when it is properly specified (McIntosh, 2006).

3.8.2 Root mean square error of approximation (RMSEA)

Root Mean Square Error of Approximation (RMSEA) is a measure of approximate fit in the population and therefore RMSEA is concerned with the discrepancy caused by approximation (Steiger, 1990). The null hypothesis being tested is that the model is "close fit" rather than "exact fit" (Browne & Cudeck, 1993). Using a 5% level of significance Browne and Cudeck (1993) recommends that RMSEA value ≤ 0.05 is considered a good fit to the model while values between 0.05 and 0.08 are considered adequate fit, values between 0.08 and 0.10 as mediocre fit where as RMSEA values greater than 0.10 are not acceptable.

RMSEA should have a value of 0.5 or less for a close model fit (Worthington & Whittaker, 2006). Models are modified and retested when an SEM fails to demonstrate goodness of fit. RMSEA is regarded as one of the most informative indices (Diamantopoulos & Siguaw, 2000) as a result of the sensitivity to the number of estimated parameters in the model hence RMSEA may select a model with less parameters (Hooper, Coughlan & Mullen, 2008). This has led to recent adjustments to the cut-offs of RMSEA. A cut-off value close to 0.06 (Hu & Bentler, 1999) or a stringent upper limit of 0.07 (Steiger, 2007) have been accepted as good fit. MacCallum, Browne & Sugawara, (1996) considered ranges between 0.05 and 0.10 an indication of fair fit.

According to MacCallum et al (1996) one of the critical advantages of the RMSEA is its ability for a confidence interval to be calculated around its value. The known distribution values of the statistic make it possible for the confidence interval to be calculated around its value and subsequentially allows for the null hypothesis to be tested precisely (McQuitty, 2004). According to Hooper, Coughlan & Mullen, (2008) in a well-fitting model the lower limit of the 90% confidence interval is 0 while the upper limit is less than 0.08.

3.8.3 Expected Cross Validation Index (ECVI)

Expected Cross Validation Index (ECVI) is a measure of the discrepancy between the model-implied covariance matrix in the analysed sample and the covariance matrix that would be expected in another sample of the same size (Jöreskog & Sörbom, 1993, p. 120). ECVI is an evaluation of how well a model fits to the calibration sample in comparison to the validation samples (Kaplan, 2000). The smallest ECVI estimate is an indication that the model is the best fit. The precision of the estimate can be assessed with a 90% confidence interval. ECVI allows a researcher to choose a model that minimises the overall error.

3.8.4 Root mean square residual (RMR) & standardised root mean square residual (SRMR)

The RMR and the SRMR are the square root of the difference between the residuals of the sample covariance matrix and the hypothesised covariance model (Hooper et al., 2008 p.54). The range of the RMR is calculated based on the scales of the indicators, therefore, if the questionnaire is designed with varying levels it becomes difficult to interpret the RMR (Kline, 2005). Standardised RMR (SRMR) resolves the problem of varying scales and is meaningful to interpret (Hooper et al., 2008). SRMR values range from 0 to 1. Models that do not fit the datum well obtain values that are less than 0.05 (Byrne, 1998; Diamantopoulos & Siguaw, 2000) whereas values that are as high as 0.08 are considered as acceptable (Hu & Bentler, 1999). A perfect fit is indicated by a SRMR value of 0 however it is important to note that SRMR values are low when the number of parameters is high in the model as well as when the model is based on large samples (Hooper et al., 2008).

3.8.5 *Critical N (CN)*

Critical N is the largest sample size for which one would accept the hypothesis that a model is correct (Hoelter's, 1983). A model is an adequate representation of the datum if CN > 200. Hoelter (1983) suggests that CN should be larger than 200 which is however this is not recommended by Hu & Bentler (1999). The CN value has been challenged in literature with researchers indicating that it should be used with caution (Diamantopoulos & Siguaw, 2000).

3.8.6 Modification Index

If the fit of a model is not adequate, the model can be modified by deleting parameters that are not significant and adding significant parameters that improve the fit (Hox & Bechger, 1998). In SEM modification indices are computed for each parameter and the value of the modification index is the

minimum value that the chi-square statistic will decrease by if the parameter is freed. The process is repeated until an adequate model fit is attained. Modifications should only be applied when there is a theoretical justification (Byrne, 1989). Model indices of ≥ 4 imply the model fit can be improved significantly if the corresponding path to be estimated is freed.

3.9 Guidelines on fit indices are evaluated for model fit

A number of statistics are used to assess whether the datum fit the proposed model. Table 7 below indicates the guidelines on how fit indices will be evaluated.

Table 7: Guidelines on how fit indices were evaluated for model fit

Fit Index	Guidelines
Chi-square (x^2)	The Chi-square statistic $x^2 = 0$ if the model matches the datum perfectly. For an imperfect model the p-value is less than or equal to 0.05 at the 5% level (Diamantopoulos & Siguaw, 2000). A good model fit would provide an insignificant result at a 0.05 threshold (Barrett, 2007). x^2 is highly influenced by sample size and should therefore not be used as a formal test statistic for goodness of fit but rather a descriptive index (Jöreskog & Sörbom,1993).
x^2/df	The ratio for x^2/df is expected to be small ranging between 2 and 3 for a good model fit.
Root mean square error of approximation (RMSEA)	A perfect fit is established when the RMSEA value is zero. An RMSEA value of ≤ 0.05 is indicative of a close fit, a value of between 0.05 and 0.08 is regarded as an adequate fit and values > 0.10 are not acceptable.
Expected cross-validation index (ECVI)	(ECVI) is a measure of the discrepancy between the model-implied covariance matrix in the analysed sample and the covariance matrix that would be expected in another sample of the same size (Jöreskog & Sörbom, 1993, p. 120). The ECVI range is > 0 (small is good) (Browne & Cudeck, 1993).
Comparative Fit Index (CFI)	The Comparative Fit Index (CFI) value should be greater than .90 to be acceptable (Hair et al., 2006).
Standardised root mean square residual (SRMR)/RMR	SRMR are the square root of the difference between the residuals of the sample covariance matrix and the hypothesised covariance model (Hooper et al., 2008 p.54). SRMR values range from 0 to 1. Models that do not fit the datum well obtain values that are less than 0.05 (Byrne, 1998; Diamantopoulos & Siguaw, 2000) whereas values that are as high as 0.08 are considered as acceptable (Hu & Bentler, 1999). A perfect fit is indicated by a SRMR value of 0 however it is important to note that SRMR values are low when the number of parameters is high in the model as well as when the model is based on large samples (Hooper et al., 2008).

Normed Fit Index (NFI) and the Non-Normed Fit Index (NNFI)	NFI is affected by sample size, which is however accounted for by the NNFI (Diamantopolous & Siguaw, 2000). The recommended threshold for NFI and NNFI is 0.9 (Hair et al., 1998).
Bollen-Stine bootstrap p-value	The null hypothesis is that the model is correct fit to the datum. A p-value of ≤ 0.05 rejects the H0 at the 5% level while If the p-value > 0.05, the H0 is not rejected indicating that the model is correct.
Critical N (CN)	A model is an adequate representation of the datum if CN > 200. This value has been challenged in literature and should therefore be used with caution.

Evaluation of model fit is not a straightforward process and in the literature no consensus has been reached on what constitutes a good fit (Schermelleh-Engel, Moosbrugger & Müller, 2003; Tanaka, 1993). Since there is no single statistical test that identifies a good fit, the researcher applied several criteria to identify good model for the sample datum. Table 8 below summaries the different criteria and model fit recommendations.

Table 8: Model Fit Evaluations Recommendations

Fit Measure	**Good Fit**	**Adequate (acceptable) fit**
Chi-Square (x^2)	0 ≤ $\boldsymbol{x^2}$≤ 2df	2 < $\boldsymbol{x^2}$≤ 3df
x^2/df	0 ≤ $\boldsymbol{x^2}$/df ≤ 2	2 < $\boldsymbol{x^2}$/df ≤ 3
RMSEA	0 ≤ RMSEA ≤ 0.05	0.05 < RMSEA ≤ 0.08
p-value for test of close fit (RMSEA < 0.05)	0.10 < p ≤ 1.00	0.05 ≤ p ≤ 0.10
SRMR/RMR	0 ≤ SRMR ≤ 0.05	0.05 < SRMR ≤ 0.08
NFI	NFI>0.90	
CFI	CFI>0.90	
ECVI	ECVI should be smaller than for comparison model	
Bollen-Stine bootstrap p- value	p>0.05	

3.10 Conclusion

This chapter discussed traditional and modern scale development as well as the preferred method for the study and the recommendations on which methodology to adapt for the study. Assessing unidimensionality of instruments using CFA has become an important part of scale development which was not available in earlier years. The introduction of Structural Equation Modelling (SEM) has brought major advantages on testing construct dimensionality.

In the next chapter the research methodology followed to develop the measure is discussed. An initial discussion of the research paradigm, approach, population and unit of analysis is discussed. The primary and secondary datum collection methods used are discussed in detail. A step by step process followed for scale development is discussed.

4 RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

In the previous chapter, traditional and contemporary scale development approaches are discussed. This chapter provides reasons for choosing the contemporary method of scale development.

Chapter four will discuss the methodology that was adopted for this research. In this chapter the research philosophy, paradigm and approach are discussed. A detailed explanation is provided of the unit of analysis, the primary and secondary sources of datum used in the study. The step by step description of the process to develop a new measure for Ubuntu is provided starting from generation of items, refinement of measures by a panel of experts as well as all the processes to refine and purify the measure. An explanation of the pilot study conducted is provided as well as the process of datum collection for the three waves of datum and the statistical analysis are discussed. Table 9 summarises the steps followed in developing the Ubuntu scale.

Table 9: Summary of scale development process

Step	**Description of step**
Item generation	Literature review, Focus groups, In-depth interviews
Refinement by Panel of Experts	Academics and senior practitioners assess the dimensions and associated items
Pilot Study	Telephonic survey with 20 respondents
Wave one datum collection **Reduced the generated items from 84 to 30 items**	• Telephonic interviews – Completed 500 interviews **Statistical techniques used** • The Bartlett's test and The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy tests • Exploratory Factor Analysis • Reliability Assessment using Cronbach's Alpha

Step	**Description of step**
Wave two Datum collection **Validation, purification and Refinement of the measure**	• Online interviews – Completed 205 interviews **Statistical techniques used** • The Bartlett's test and The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy tests • Exploratory Factor Analysis • Reliability Assessment – Cronbach's Alpha; • CFA – o Fit indices (Chi-square, RMSEA, ECVI, CFI, TLI, NFI, NNFI, GFI, AGFI, Critical N) o Modification indices o Squared multiple correlations o Standardised residuals • Composite Reliability (CR) - CFA • Discriminant Validity
Wave three Datum Collection **Purification and refinement of the measure**	• Telephonic interviews – Completed 300 interviews **Statistical techniques used** • The Bartlett's test and The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy tests • Exploratory Factor Analysis • Reliability Assessment – Cronbach's Alpha; • CFA – ▪ Fit indices (Chi-square, RMSEA, ECVI, CFI, TLI, NFI, NNFI, GFI, AGFI) ▪ Modification indices ▪ Squared multiple correlations ▪ Standardised residuals o Composite Reliability (CR) – CFA o Discriminant Validity o Measurement Invariance • SEM o Nomological Validity

4.2 Research philosophy, paradigm and approach

Research philosophy relates to the nature of knowledge and the development of that knowledge (Wahyuni, 2012). According to Saunders, Lewis & Thornhill (2016), research philosophies include positivism, realism, interpretivism and pragmatism each with its associated ontologies, epistemologies and axiologies.

According to Jonker & Pennink (2010) a research paradigm is a set of essential assumptions and beliefs on how the world is perceived which then serves as a thinking framework that guides the behaviour of the researcher. The philosophical dimensions of social sciences are addressed by research paradigms (Wahyuni, 2012).

Qualitative research is mainly characterised as an **inductive** research technique which develops concepts, insights and understanding from patterns in the datum (mainly non-numeric). Qualitative research is an exploratory method which is mainly used to explore issues or problems to understand the contexts or settings in which participants address an issue and help gain insights (Saunders et al., 2016). Qualitative research datum is analysed by extracting themes through content analysis. With qualitative research the sample sizes are small and cannot be generalised to the whole population.

Quantitative research is mainly considered a **deductive** approach where the focus is mainly to use datum (mostly numeric and measurable) to test theory and the collected datum is used to assess preconceived models, hypotheses and theories (Saunders et al., 2016). Quantitative research is generally associated with **positivism** which relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalisations" (Saunders et al., 2016. p. 135). Furthermore, Saunders et al. (2016) argues that quantitative research can also be used within the realist and pragmatist philosophies. According to Saunders et al., (2016). Quantitative research is descriptive and mostly examines relationships between variables which are measured numerically and analysed using a range of statistical and graphical techniques.

Quantitative research uses large sample sizes to allow for generalisability of the results and mostly uses probability sampling techniques for datum collection (Saunders et al., 2016). The analytical objectives for quantitative research are mainly to quantify variation, predict causal relationships and general description of the datum. This study used mixed methods with both qualitative and quantitative research. The study was however predominantly quantitative.

4.3 Unit(s) of analysis

The individual adult is the main unit of analysis for the research. The main focus of the developed measure was Ubuntu per individual adult hence the analysis was conducted at the individual level. The individual rated the items based on the extent to which they agree to the activity. It is important to note that while the unit of analysis is the individual Ubuntu construct is manifest at multiple levels of analysis which includes individual to national culture.

4.4 Datum collection methods

Datum was collected with the measure that was developed for the study. The measure was designed to have sections that cover all the identified indicator values of ubuntu from literature. The first study datum was collected from a completely different sample to the second study. Individuals were not allowed to participate in more than one datum collection phase therefore all the subjects for each study are unique, and this includes the datum collection for the pre-test with the aim of detecting possible problems on how the questions are worded, instructions to participants as well as the introduction letter (Cooper & Schindler, 2007). This step helped assess the platform for datum collection and how the datum was stored once collected.

Primary and secondary datum sources were utilised in this study. Secondary datum sources was the extensive literature review while primary datum was collected using in-depth interviews, focus groups, telephonic and online surveys. The primary datum was collected using in-depth interviews, focus groups, telephonic and online surveys. The datum collected were numeric for the quantitative telephonic and online surveys and non-numeric for the in-depth interviews and focus groups. The following steps were followed:

1. An extensive literature review conducted to understand the underlying indicator values of ubuntu.
2. Focus groups and in-depth interviews conducted to explore the concept of ubuntu.
3. Panel of experts which refined the developed items.
4. Datum collected by means of telephonic and online surveys.

The datum for the research was mainly collected using the four methods highlighted below:

4.4.1 Secondary Datum Sources

Literature review

One of the critical parts of any scale development is a comprehensive literature review. Literature is utilised to recognise theories and information on which a new conceptual framework can be built (Saunders et al., 2003). It was therefore critical to conduct a comprehensive literature review to establish the indicator values of Ubuntu and the associated items for the construct. The research reviewed the different definitions of Ubuntu and indicator values in different studies.

4.4.2 Primary Datum Sources

4.4.2.1 Focus Groups

Two focus groups were conducted to explore the indicator values of Ubuntu and establish the specific aspects related to each of the indicator values. Datum was generated using a semi-structured setting and discussions that were facilitated by trained moderators. The first focus group was conducted with a group of ten people, consisting of four males and six females between the ages of 25 and 50 years. The first focus group was skewed in the 40 – 50 years with only one participant in the 25 – 30 years, one participant in the 30 – 40 years range and the rest in the 40 – 50 years. The group had mixed races of four Africans, three Coloureds, two Whites and one Indian. These were recruited from suburban and townships areas. The second group had ten Africans split between six females and four males aged between 25 and 50 years. The respondents were recruited from township and were mainly 40 – 50 years. Like in the first group one respondent was 25 – 30 years, with only one respondent between 30 – 40 years and the rest of the participants were above 40 years. All participants were recruited from the townships. No rural participants were included in the study. These two focus groups were considered sufficient for exploratory purposes considering they covered all races and most of the age groups as well as had representation of both males and females. The recruited respondents received a full background briefing explaining the purpose of the discussion. The focus group was facilitated by a professional moderator from Plus 94 Research, using a semi-structured interview to direct the discussion. The researcher had an opportunity to observe the focus group discussions through a one-way mirror and could pose additional questions where necessary during the focus group discussions. The purpose of the focus group was mainly to explore the indicator values of Ubuntu as well as conducting Q-Sorting of the identified indicator values of Ubuntu to establish the dimensions of Ubuntu.

Q-Sorting is a powerful, theoretically grounded tool used to examine opinions and attitudes (Thomas & Watson, 2002). In the focus group respondents were asked to group the 82 indicator values of Ubuntu obtained from literature in small groups of values that represent similar values. The process was conducted within the group and respondents had to discuss where each of the indicator values fall in. Each of the two focus groups came up with its own groups of values from Q-Sorting although several similarities existed in how they grouped the indicator values of Ubuntu.

4.4.2.2 In-depth interviews

A total of four in-depth interviews were conducted to explore the indicator values of Ubuntu and establish the specific aspects related to each of the indicator values as with the focus groups. Similar to the focus groups datum was generated using a semi-structured guide which was used in the focus group setting. The four in-depth interviews were conducted among one academic practitioner, one spiritual leader and two other people who were selected on the basis of knowledge of the concept of ubuntu. The respondents were notified during recruitment of the purpose of the discussion. Q Sorting was also used to sort the 82 indicator values of Ubuntu. This was done individually for each participant. Each interview led to a solution on how the indicator values are grouped. These solutions were very similar to each other.

4.4.2.3 Panel of Experts

A panel of experts which included academics and senior practitioners were used to evaluate the dimensions and items in the first draft of the questionnaire. The instrument was designed based on literature review, focus group and in-depth interviews. A total of four Experts were selected for the study and a description of the four is shown below:

- Two experts had knowledge and expertise on scale development. The two scale development experts are from GIBS, One is a Professor at GIBS and holds a PhD in Marketing Management the other holds a PhD and lecturers Statistics and Research methods at GIBS.
- One expert had knowledge and expertise on the subject construct – Ubuntu. The expert is an Associate Professor in Philosophy, University of KwaZulu-Natal. Has written several articles on Ubuntu.
- One expert had knowledge expertise on both scale development and the subject construct. The expert is a Chief Executive Officer of a leading research company and holds a PhD in Technology Management. His understanding of Ubuntu is mainly from literature with no publications.

Each expert separately was provided with the definition and items of each dimension. The expert was then requested to establish for each dimension the following:

- Relevance of each item for the construct
- Phrasing of the statement
- If items sufficiently represent the construct

The experts were lastly asked to identify if any aspects of Ubuntu are missing from the identified dimensions and items. The input from all experts was combined and a final draft instrument was generated.

While panel of experts are used to assess the content validity of an instrument the processes involved in assessing the validity as well as the characteristics and qualifications of these experts are usually not reported (Berk, 1990). The panel of experts in the study were selected based on relevant training, experience and qualifications (Grant & Davis,1997), the national presentations conducted, history of publications in journals and research conducted on the phenomenon of interest (Grant & Kinney, 1992) as well as scale development, the knowledge experts have related to the conceptual framework of the construct to be measured, achieved professional certification in a related topic, professional papers presented on the topic, meetings attended in the topic or area of interest as well as having initiated research on the specific topic (Davis, 1992) and scale development, familiarity with the phenomenon under study through practical involvement was used for selection criteria (Grant & Davis, 1997).

It is challenging to obtain expert judges that meet all the set criteria (Grant & Davis, 1997). Subset of content experts can be selected to judge various sections of the measure (Davis, 1992). The researcher selected judges based on subject topic ubuntu as well as scale development experience. Once the panel was selected definitions were clearly conceptualised. The conceptual definitions needed to include relevant dimensions of the construct (Grant & Davis, 1997).

4.4.2.4 Surveys

A questionnaire was developed to collect datum from the target population. The datum was collected using telephonic interviews for the first wave and online surveys for the second wave which was captured on a website. The telephonic interviews were conducted using Plus 94 Research call centre. Research consultants phoned participants from a datumbase and interviewed them using a structured questionnaire. The responses were recorded on a computer through the telephonic software called NIPO.

A link to the online survey was distributed to different people by email. Once the questionnaire was emailed to the list of respondents, the researcher sent polite weekly reminders to potential respondents that had not responded to the survey. The reminders were done via email. The potential respondents that had not have responded in two weeks were contacted telephonically to encourage them to participate in the research. All interviews were collected within the planned two weeks. Questionnaires are considered as appropriate for gathering datum on opinions of respondents, which are analysed statistically (Saunders et al., 2003). The use of questionnaires with standardised questions was therefore deemed appropriate to measure Ubuntu. The designed questionnaires enabled the researcher to quantify the responses and statistically analyse the responses.

4.5 Population and sampling

The research was administered among the adult population (18 years and above) in South Africa using telephonic and online surveys. A datum base of people in South Africa was sourced by the researcher and used to conduct the telephonic surveys as well as online study. The researcher sourced a list of the adult population datum base from an existing panel of respondents at a commercial research company (Plus 94 Research) which consists of about 64 000 potential respondents. The panel is generated by asking any respondents who participate in any study if they are willing to take part in future studies.

The researcher used a call centre which consists of 80 telephonic stations for collecting the datum. The research consultants are experienced in conducting telephonic interviews and were used to conduct the surveys telephonically in the first and third study. The telephone system applies a systematic random sampling approach when the consultants make the calls from the datumbase. The researcher achieved a sample of 500 in the first study with 93 items telephonically. The Online surveys were conducted by sending to as many people as possible on the established datumbase the online surveys to increase the chance of having more responses. A total of 205 interviews were achieved in the second study with 34 items using the online study. The third study consisted of a total of 200 interviews with 19 items which were conducted telephonically. The research did not require a representative adult population of South Africa as the results are not generalised to the South African adult population, hence panel respondents were used.

4.6 Questionnaire

A 5-point Likert scale was utilised for this particular study and respondents expressed the extent to which they agree with each statement. The scale was interpreted as follows: 1 = 'Strongly disagree'; 2 = 'Disagree'; 3 = 'Neither agree or disagree'; 4 = 'Agree'; 5 = 'Strongly agree'. In phrasing the items, the researcher made sure all items were positively phrased. Negatively worded items have come under scrutiny by several researchers (Hinkin, 1995). The questionnaire included demographic questions such as race, income, age and gender to allow for comparison of the results in all three datum collection phases. To ensure that only respondents 18 years and above participated in the study the age question was at the beginning of the questionnaire and was used as a screening question. Respondents were first asked if they were willing to participate in the study and if respondents answered No to taking part in the study they were thanked for their time and were not asked to complete the questionnaire. When they answered "yes" confirming that they are willing to participate they were asked the rest of the questionnaire.

4.7 Response Bias

Response rates for surveys have dropped over the years which has prompted questions on what is an acceptable response rate (Morton, Bandara, Robinson & Carr, 2012; Keeter, Kennedy, Dimock, Best and Craighill, 2006; Dutwin and Buskirk, 2018). Furthermore, Morton et al., (2012) argues that response rates are not enough to provide evidence to judge a study's quality and/or validity. Keeter, Miller, Kohut, Groves and Presser (2000), argues that methodologists have not yet developed theories that can predict when nonresponse rates indicate nonresponse error and when they do not. The response rate of the three quantitative studies was calculated based on the total completed study divided by the total contacts made, including contacts that did not answer the phone. People no longer volunteer to participate in surveys, increased contacts by different research groups as well as increased complexity of life as well as introduction of privacy laws are provided as the hindrances to research participation (Morton et al., 2012).

According to Baruch (1999) there is no agreed norm to what is an acceptable or unacceptable response rate. Morton et al., (2012) opine that there are few strategies that can be adopted to counteract the reasons for downward trends in study participation. Available strategies come at a considerable cost which may not necessarily be feasible. Keeter et al. (2006) argues that there are few studies that have been rigorously designed to provide theoretical expectations about the consequences of low response rates.

Morton et al., (2012) argue that low response rate do not automatically equate to lower study validity as many studies have demonstrated no direct relationship between response rate and validity. Morton et al., (2012), state that there is no response rate which is indicative of accurate results. No measures were put in place to improve the response rate for the three studies. The characteristics of the participants are similar to the non-participants. The low response rate for this study is part of the limitation of the study.

4.8 Ubuntu scale development process

The researcher took cognisance of scale development procedures suggested by Churchill (1979), DeVellis (1991, 2003), Diamantopoulos (2005, 2010), Diamantopoulos & Siguaw (2006), Diamantopoulos & Winklhofer (2001), Gerbing & Anderson (1988), Hinkin (1995), Malhotra, Peterson & Kleiser, (1999), Rossiter (2002) and Worthington & Whittaker (2006), Each of these processes are discussed in detail in the scale development chapter three. The below section describes how the scale was developed following DeVellis (2003).

4.7.1 Generation of pool of Items

Generation of items involved the use of both deductive and inductive approaches in order to capture adequately the domain construct. It is important that a sufficiently large pool of items be identified that will adequately capture the domain construct for a good scale. The deductive approach of item generation involves item generation based on extensive literature review and pre-existing scales (Hinkin 1995) while inductive methods base item generation on qualitative research. The first step in the development of items was a comprehensive review of literature which yielded 82 indicator values of ubuntu from literature. The second approach used focus groups and in-depth interviews. The Q-Sorting in focus groups and in-depth interviews yielded the indicator values grouped into three dimensions as indicated in table 9. Six of the indicator values obtained in literature were regarded as not part of Ubuntu by the participants in the focus groups and in-depth interviews. The six indicator values that were excluded after qualitative research are: compliance, optimism, reckoning with individual experience, recognition, shared vision and wise. Table 10 shows the resulting 76 indicator values of Ubuntu after conducting focus groups and in-depth interviews:

Table 10: Derived indicator values of Ubuntu from literature

Humanness	Compassion	Interconnectedness
Accepting other	Benevolence	Collaboration
Brotherhood	Caring	Collectivism
Equality	Considerate	Commitment
Human quality	Compassion	Communalism
Humanism	Empathy	Communality
Humanity	Friendliness	Communitarianism
Humanness	Generosity	Community
Identity	Goodwill	Connectedness
Tolerance	Helpfulness	Creative Cooperation
Inclusiveness	Hospitality	Interdependence
Oneness	Kindness	Interconnectedness
Personhood	Love	Relationship with others
Recognition	Sympathy	Shared gains
Valuing others	Thoughtful	Shared loss
Dignity	Understanding	Sharing
Respect	Blessed	Social Mature
	Forgiveness	Socially sensitive
	Harmony	Teamwork
	Honesty	Unity
	Trust	Sacrifice
	Integrity	Seeking Consensus
	Humble	Servant Leadership
	Humility	Solidarity
	Morality	Survival
	Justice	Communication
	Patience	Freedom of Choice
	Polite	Freedom of Descent
	Virtuous	Freedom of expression
		Participation
		Personal interaction
		Responsiveness
		Self-Expression

Numerous scholars define Ubuntu as a construct made up of several indicator values. The researcher explored the multidimensional nature of the Ubuntu construct. The researcher postulated a reflective seconder order latent construct with three first order observable dimensions namely humanness, interconnectedness and compassion. Each of the three first order dimensions represent different aspects of Ubuntu. Each item generated for each of the three dimensions was expressed by a statement which describes an aspect of the dimension which reflects the main construct of Ubuntu. DeVellis (2003) states that at the initial stage of item generation it is acceptable to have redundancy in order to represent all major content areas, as multiple items are viewed to constitute a more reliable scale. This study started with a pool of items three or four times as large as the final scale, which is considered normal.

In developing the items, it was important to write items that are clear, unambiguous measure the construct and cover the entire domain. A total of 85 items were developed to represent the three dimensions from the literature review, focus groups and in-depth interviews. The 85 items were generated from the 76 resulting indicator values of ubuntu. The three dimensions of Ubuntu were conceptualised as: Humanness, Compassion and Interconnectedness. For each of the 76 indicator values the researcher made sure statements that measure the indicator values were developed. Some indicator values had more than one items while others were represented with only one item yielding a total of 85 items for the three dimensions. Table 11 provides the draft instrument developed.

Table 11: Initial Draft Instrument

Indicator Value	**Humanness Items**
Accepting others	I accept other people regardless of their circumstances or status
Brotherhood	I consider other people to be my brothers and sisters
Dignity	I treat other people with dignity
Equality	I see everyone as equal
	I treat everyone the same
Human Quality	I believe that everyone has the same rights
Humanity	I treat other people the way that I want to be treated
	I treasure human beings ahead of anything else
Humanness	I do not believe that people are separated by their differences
	I promote the well-being of other people

Indicator Value	**Humanness Items**
Humanism	I emphasise the value of other people
	I put the desires of other people first
Identity	I identify with other people
	People are people because of their identity
Inclusiveness	I include other groups of people in all activities
Oneness	We are one with other people
Personhood	I ensure that other people are protected
Recognition	I recognise other people
Respect	I respect other people
Tolerance	I tolerate other people regardless of their morals
Valuing others	I value other people
Indicator Value	**Interconnectedness Items**
Collaboration	I collaborate well with other people
Commitment	I am committed to maintaining good relationships with other people
Communalism	I enjoy living together with other people
	I enjoy sharing responsibilities with other people
	I enjoy sharing possessions with other people
Community	I live in community with other people
	I enjoy being in community with people
Communication	I enjoy communicating with other people in my community
Connectedness	I feel connected to other people
Creative Cooperation	I enjoy cooperating with other people
Freedom of Choice	People should have the freedom to make their own choices in life
Freedom of expression	People should have the right to express themselves
Interconnectedness	I feel interconnected with other people
Interdependence	My life is interdependent with the lives of other people
	I like having good relationships with other people
Participation	People should be free to participate as they see best
Personal interaction	It is important for people in the community to interact with each other
Sacrifice	I am willing to sacrifice for the benefit of other people

Indicator Value	**Interconnectedness Items**
Seeking Consensus	It is important to have consensus in the community
Self-Expression	It is important to be able to express oneself
Shared gains, Sharing	I like sharing what I have with other people
	Other people's success is my success
	My success is shared by other people
Shared loss	Other people's loss is my loss
	My loss is shared by other people
Social Mature	I can interact with people at every social level
Socially sensitive	I am sensitive to other people's circumstances
Solidarity	I live in solidarity with other people
Survival	Other people can rely on me for their survival
Teamwork	I enjoy working as part of a team with other people
Unity	I am united with my fellow citizens
Indicator Value	**Compassion items**
Benevolence, Goodwill, Generosity	I enjoy doing charitable work
Blessed	I am a blessing to other people
Caring	I have a caring attitude towards other people
	I am concerned about the well-being of other people
Compassion	I would rather suffer myself than to see someone else suffering
	I offer support to those in need
	I feel the joy of other people even if I do not know them
Considerate	I am considerate of other people circumstances
Empathy	I get upset when I see someone being hurt
	I feel sorry for people who do not have the things that I have
Friendliness	I like to be friends with other people
Forgiveness	I forgive others when they do wrong
Harmony	I like being in harmony with other people
Helpfulness	I would do anything to help all people
Hospitality	I like to give a hospitable reception to other people
Honesty	I am honest with other people

Indicator Value	Compassion items
Humility	I easily acknowledge my mistakes
	I am open to other people's ideas
	It is hard for me to accept other people's praises
	I place the interests of others above my own interests
Integrity	I am a person of integrity
Justice	I treat other people with justice
Kindness	I am kind to other people
Love	I love all people
Morality	I possess good moral values
Patience	I am patient when dealing with other people
Polite	I treat other people in a polite manner
Sympathy	I feel sorry for other people when they do not have what I have
Thoughtful	I am thoughtful of other people's circumstances
Trust	I trust other people
Understanding	I am understanding of other people's circumstances
Virtuous	I consider myself to be a virtuous person
	I conform to ethical principles

4.7.2 Measurement Refinement by panel of experts

Face validity is defined as the extent to which respondent's judge that the items of a questionnaire are suitable to measure the intended construct or assessment objectives (Allen & Yen, 1979; Anastasi, 1988; Nevo, 1985). To ensure face validity a panel of experts was used to refine the initially generated items. Experts reviewed the content validity and evaluated the items for clarity, conciseness, grammar, reading level, face validity and redundancy.

The panel of experts independently rated the relevancy of each item with regards to the defined construct. The experts were asked to judge whether the postulated three dimensions and 85 items in the initial Instrument sufficiently represented the Ubuntu construct and whether the items in the instrument were considered relevant, necessary and meaningful. The experts recommended rephrasing some of the items, deletion of others as well as adding new items. The feedback from the experts was used to identify the shortcomings of the initial instrument which enhanced the face validity of the proposed dimensions.

Based on the feedback solicitated from the panel of experts, the initial measure was changed. Duplicated items were removed, unclear statements were rephrased and new items that reflected the construct better were added. It can be noted that based on the feedback by the panel of experts the instrument had high level of face validity. The final instrument comprised of three dimensions and 87 items. Table 12 shows the final wave one instrument.

Table 12: Wave one final instrument

Indicator Value	Humanness Items
Accepting others	I accept other people regardless of their circumstances or status
Brotherhood	I consider other people to be my brothers and sisters
Equality	I see everyone as equal
	I treat everyone the same
Human Quality	I believe that everyone has the same rights
Recognition	I recognise other people
Valuing others	I value other people
Tolerance	I tolerate other people regardless of their morals
Inclusiveness	**I do not discriminate against other groups of people
Humanness	**We are not separate because of our differences
	I promote the well-being of other people
Identity	I identify with other people
	**I believe people are people because of their identity
Personhood	**I believe in the humanity of other people
Humanism	**I believe in the value of other people
	I put the desires of other people first
Humanity	I treat other people the way that I want to be treated
	I treasure human beings ahead of anything else
Dignity	I treat other people with dignity
Respect	I respect other people

Indicator Value	Interconnectedness Items
Collaboration	**I work well with other people
Commitment	**I am committed to other people
Communalism	I enjoy living together with other people
	It is good to share responsibilities with other people
	I like sharing possessions with other people
communication	**I communicate well with other people
Community	I live in community with other people
	**I enjoy being in community with other people
Connectedness	I feel connected to other people
Creative Cooperation	**I cooperate with other people
Freedom of Choice	**People should have the freedom to make their own choices in life for the good of everyone
Freedom of expression	People should have the right to express themselves
Interconnectedness	**I feel bound to other people
Interdependence	My life is interdependent with the lives of other people
	I like having good relationships with other people
Participation	People should be free to participate as they see best
Personal interaction	It is important for people in the community to interact with each other
Sacrifice	I am willing to sacrifice for the benefit of other people
Seeking Consensus	**It is important to try and have consensus in the community
Self-Expression	It is important to be able to express oneself
Shared gains, Sharing	I like sharing what I have with other people
	**I celebrate other people's success
	**I want other people to share my success
Shared loss	**I feel that other people's loss is my loss
	My loss is shared by other people
Social Mature	**I can interact with people at every level
Socially sensitive	**I am sensitive to other people's feelings
Solidarity	**I lead a peaceful coexistence with other people
Survival	Other people can rely on me for their survival
Teamwork	It is important to work as part of a team with other people
Unity	**I am one with other people

Indicator Value	Compassion Items
Benevolence, Goodwill, Generosity	**I am generous to other people
	**I enjoy doing good deeds for others for no gain
	**I exhibit good will to other people
Blessed	**I try to be a blessing to other people
	**I wish the best for other people
Caring	I have a caring attitude towards other people
	I am concerned about the well-being of other people
Compassion	I would rather suffer myself than to see someone else suffering
	I offer support to those in need
	**I share the joy of other people even if I do not know them
Considerate	I am considerate of other people's circumstances
Empathy	I get upset when I see someone being hurt
	I feel sorry for people who do not have the things that I have
Forgiveness	I forgive others when they do wrong
Friendliness	**I am friendly to other people
Harmony	I like being in harmony with other people
Helpfulness	**I am helpful to other people
Honesty	I am honest with other people
Hospitality	**I am hospitable to other people
Humility	I easily acknowledge my mistakes
	I am open to other people's ideas
	It is hard for me to accept other people's praise
	I place the interests of others above my own interests
Integrity	I am a person of integrity
Justice	**I treat other people in a just way
Kindness	I am kind to other people
Love	I love other people
Morality	**I deal with other people in a moral manner
Patience	I am patient when dealing with other people
Polite	**I am polite to other people
Sympathy	**I feel sorry for people who are suffering
Thoughtful	**I am thoughtful of other people
Trust	I trust other people
	**Other people can trust me
Understanding	**I try to understand other people's circumstances
Virtuous	**I consider myself to be a person of good character

** *Rephrased and new items based on Panel of Experts Feedback*

4.7.3 Pilot Study

Before datum is collected it is important to subject the measure items to a pilot study. The aim of the pilot study is to detect if there are any potential problems in how the questions are interpreted by the respondents, problems with understanding the instructions as well as the wording of the items. This step also helps in checking how the datum is stored after a survey is completed. The researcher conducted a small pilot study with 20 telephonic interviews. This datum did not form part of the main survey datum. This step ensured that the instrument was performing well, and the datum were being recorded correctly for the analysis that was to be performed. No changes were made after the pilot study.

4.8 Operational definition and operationalisation

To ensure the validity and reliability of the Ubuntu measurement instrument, it is crucial to define the three dimensions clearly and accurately. The below sections provide the operational definitions of the dimensions (latent variables). The definitions of the three dimensions are based on literature interpretation and the focus groups and in-depth interviews as well as the input from the panel of experts. Starting with a definition of a construct provides a basis for operationalisation in the process of developing sound measurement instruments (Hair et al., 2006). Ubuntu is an African philosophy reflecting the belief that a person's humanity is expressed in relationship to other people.

4.8.1 Humanness

Humanness in this study is defined as the belief that all people possess the innate characteristic of being human, which is to say being aware of self and of other people. Humanness is derived from the ability to have a friendly relationship with other human beings and to identify with their difficulties and sorrows. Humanness can therefore only be enhanced in the framework of a community with other human beings.

In developing the items for Ubuntu, the indicator values of Ubuntu q-sorted in the in-depth interviews and focus groups were used to generate the items. Respect and dignity were q-sorted under humanness. Ubuntu places high regard for respect of human dignity. Respect and dignity are viewed as important values of ubuntu (Mangaliso, 2001). The underlying values of ubuntu is to honour the human dignity of all people and enhance good relationships. Metz (2012) asserts that a person is a person regardless of their worthy and personhood is validated based on the relationship with other human beings. Similarly, Mcunu (2004) possits that dignity is rooted in personhood and is something

intrinsic, irrespective of a person's community position. "To be a human being one has to affirm one's humanity by recognising the humanity of others", (Ramose, 2010). The researcher therefore included respect and dignity in operationalising humanness.

Broodryk (2006) identifies five associated values of humanness namely humanity, peace, understanding, warmth and tolerance. The key values that humanness consists of are treating and respecting each other as human beings as well as brotherhood (Taylor, 2014). Taking into account the associated values of humanness and the key values that humanness is comprised of the proposed dimension humanness therefore encompasses the following aspects based on literature, in-depth interviews and focus groups; recognition of other people, identifying with other people, relationship between individuals, humanity, understanding, warmth, tolerance, humanism, respect, dignity, personhood and brotherhood. The 20 items formulated to measure the construct Humanness, as operationalised above, are listed in Table 13 below.

Table 13: Operationalisation of Humanness

Humanness Items
I accept other people regardless of their circumstances or status
I consider other people to be my brothers and sisters
I see everyone as equal
I treat everyone the same
I believe that everyone has the same rights
I recognise other people
I value other people
I tolerate other people regardless of their morals
I do not discriminate against other groups of people
We are not separate because of our differences
I promote the well-being of other people
I identify with other people
I believe people are people because of their identity
I believe in the humanity of people
I believe in the value of other people
I put the desires of other people first
I treat other people the way that I want to be treated
I treasure human beings ahead of anything else
I treat other people with dignity
I respect other people

4.8.2 Interconnectedness

Interconnectedness is defined in this study as the belief that all people are bound together by virtue of their shared humanity. When a community is interconnected, they develop ways to live and exist regardless of situations they encounter. The underlying belief in African society is the fact that all human beings are interconnected and share a common and communal responsibility for each other (Metz & Gaie, 2010). The relationships that exist in the African society is not based on biological bonds but rather based on shared humanity. Human beings live as part of a community and not as individuals with relationships and interdependence among each other (Lutz, 2009).

Interconnectedness was q-sorted with indicator values such as community, sharing, interdependence, relationship with others. As a way of survival, African societies have developed a collective way of survival through sharing of values (Mangaliso, 2001; Poovan et al., 2006). Human beings are interconnected and are therefore able to share these values. Human beings share a bond and live in harmony with each other by virtue of being part of a community. Ubuntu emphasises the collective “we” than the individual (Mangaliso, 2001) due to the interconnectedness between human beings. African communities mainly possess a communal and unified shared way of survival to overcome challenges they experience, and this happens through the shared bond which allows the sharing of existing knowledge and skills. Metz (2007) asserts that right things are those that connect people while the wrong things are those that separate people.

The associated values of the proposed dimension of interconnectedness were therefore operationalised to include; unity, interdependence, collective work, sharing, connectedness, community, peace and collective contribution. The 31 items formulated to measure the construct interconnectedness, as operationalised are listed in Table 14 below.

Table 14: Operationalisation of Interconnectedness

Interconnectedness Items
I work well with other people
I am committed to other people
I enjoy living together with other people
I enjoy sharing responsibilities with other people
I enjoy sharing possessions with other people
I live in community with other people
I enjoy being in community with people
I feel connected to other people
I cooperate with other people
I feel bound to other people
My life is interdependent with the lives of other people
I like having good relationships with other people
I like sharing what I have with other people
I celebrate other people's success
I want other people to share my success
I feel that other people's loss is my loss
My loss is shared by other people
I can interact with people at every level
I am sensitive to other people's feelings
I enjoy working as part of a team with other people
I am one with other people
I am willing to sacrifice for the benefit of other people
It is important to try and have consensus in the community
I lead a peaceful coexistence with other people
Other people can rely on me for their survival
I communicate well with other people
People should have the freedom to make their own choices in life for the good of everyone
People should have the right to express themselves
People should be free to participate as they see best
It is important for people in the community to interact with each other
It is important to be able to express oneself

4.8.3 *Compassion*

Compassion is defined in this study as the belief that other people should be treated with concern due to a common humanity. Mangaliso (2001) asserts that “A person is a person through others”, by treating each other as members of one family showing kindness, compassion and humility. According to Mangaliso (2001), compassion involves understanding of other people’s problems and wanting to help people through these situations and also encompasses reaching out to other people.

Compassion was q-sorted with indicator values such as caring, goodwill, helpfulness, empathy, friendliness among other indicator values. Compassion is demonstrated through people’s urge to reach out to others in a manner that leaves them self-accomplished with self-fulfilment (Broodryk, 2006). Compassion makes people desire to be generous and be willing to make sacrifices in order to help others (Muchiri, 2011).

Broodryk (2006) identifies compassion as one of the key values of ubuntu which is associated with love, spontaneity, forgiveness, cohesion and informality. Poovan et al. (2006) asserts that compassion is about the care people have for each other as well as understanding each other. On the other hand, Broodryk (2006) defines caring as placing the difficulties, interests and situations of others on high priority in an affectionate, empathic and compassionate spirit. Furthermore, Broodryk (2006) identifies that caring is associated with helpfulness, empathy, sympathy, friendliness and charitableness. Compassion is related to empathy or the ability to share the feelings or suffering for another person (Broodryk, 2006).

Taking into account the associated links between compassion and other indicator values of Ubuntu such as caring and empathy it can be noted that the compassion dimension was therefore operationalised to include aspects of; empathy, caring, love, spontaneity, forgiveness, sharing, openhandedness, unconditional giving, redistribution, solidarity, sacrifice, mutual support, reckoning with individual experience, cohesion and informality, helpfulness, sympathy, friendliness, charitableness, kindness, benevolence, concern for others, courtesy, considerate, sympathy and understanding others.

The 36 items formulated to measure the construct Compassion, as operationalised above, are listed in Table 15 below.

Table 15: Operationalisation of Compassion

Compassion items
I am generous to other people
I enjoy doing good deeds for others for no gain
I exhibit good will to other people
I have a caring attitude towards other people
I am concerned about the well-being of other people
I would rather suffer myself than to see someone else suffering
I offer support to those in need
I share the joy of other people even if I do not know them
I am considerate of other people's circumstances
I get upset when I see someone being hurt
I feel sorry for people who do not have the things that I have
I am friendly to other people
I am helpful to other people
I am hospitable to other people
I am kind to other people
I love other people
I feel sorry for people who are suffering
I am thoughtful of other people
I try to understand other people's circumstances
I wish the best for other people
I try to be a blessing to other people
I forgive others when they do wrong
I like being in harmony with other people
I am honest with other people
I trust other people
Other people can trust me
I am a person of integrity
I easily acknowledge my mistakes
I am open to other people's ideas
It is hard for me to accept other people's praise
I place the interests of others above my own interests
I deal with other people in a moral manner
I treat other people in a just way
I am patient when dealing with other people
I am polite to other people
I consider myself to be a person of good character

4.9 Datum collection and quantitative analysis

To develop the proposed scale, a number of steps were followed. Since the study aims to develop a measure for Ubuntu the datum was analysed to purify the measure as well as check for validity. Datum was analysed to achieve a measure that satisfies the required qualities of a measure namely: content validity, dimensionality, internal consistent reliability, construct validity and response set bias (Bearden & Netmeyer, 1999). A number of statistical procedures were used to assess the construct validity of the proposed measure, which included reliability, unidimensionality, convergent validity, discriminant validity and nomological validity. Datum was collected over three waves to develop, purify and demonstrate the construct validity, model fit and measurement invariance of the developed scale for Ubuntu. The first wave of datum collection was used to purify and refine the scale while wave two datum was used to further shorten the scale and wave three datum was used further shorten and test for discriminant validity, predictive validity as well as measurement invariance.

4.9.1 Datum Collection and quantitative analysis (wave one)

The first sample for wave one was used to purify and refine the instrument. A total sample of 500 interviews was completed for the first wave. A sample of 500 is preferred for performing EFA and CFA while 300 is regarded as sufficient for the statistical analysis and the minimum sample for scale development purposes is argued to be 150 (Noar, 2003; Rubio, Berg-Weger & Tebb, 2001) and the sample for wave one exceeded the minimum benchmark.

i) Bartlett's Test of Sphericity & The Kaiser-Meyer-Olkin (KMO) Measure

The first test was conducted to test factor analysability. Bartlett's Test of Sphericity is a test which is used to detect if results obtained in any datum can be attributed to chance (Tobias & Carlson, 2010). Bartlett's test is sensitive to any deviations from normality. In this study the Bartlett's Test of Sphericity was conducted to evaluate if factor analysis can be conducted on the collected datum. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a statistic that is used to assess if factor analysis is appropriate and ranges between zero and one. A value closer to one is an indication that factor analysis is appropriate for the datum while if the value is greater than 0.4 it is acceptable to proceed with factor analysis (Hair et al., 2006; Kaiser, 1970). These tests were all conducted by the researcher before conducting factor analysis on the wave one datum.

ii) Exploratory Factor Analysis

The first analysis of the measure was Exploratory Factor Analysis that was conducted to reduce the initially generated 87 items in the initial phase. EFA was conducted using SPSS 22 for Windows. The number of factors and items underlying the dimensions were identified (Hinkin, 1995; Worthington & Whittaker, 2006). When conducting EFA rotating the factors helps display the factors in a way that can be easily interpreted. The extraction method is selected based on whether the underlying constructs are expected to be correlated or not. The Principle Component method of extraction was selected for the EFA. The rotation method used for the study was Orthogonal (Varimax) of the 87 Likert scale items. Eigenvalues, the Percentage of Variance Explained, and the individual factor loadings were used to identify the number of factors to extract from the datum. Eigenvalues that were greater than 1.0 were considered significant and those below 1.0 are insignificant and hence were discarded (Hair et al., 2010) retaining only factors with Eigenvalues greater than 1.0. According to Fornell & Larcker (1981), purification can be achieved by using an EFA before conducting a CFA hence the research used EFA to purify and refine the instrument.

iii) Reliability

Reliability is the extent to which the developed scale is free from error yielding consistent results. It is expected that the measure should yield similar results with different respondents when the study is replicated. Reliability was assessed using the Cronbach's Coefficient alpha and the score ranges between 0 and 1. The coefficient alpha was used to assess internal consistency of the measure. Composite reliability is commonly used as an alternative to coefficient alpha. Internal consistency of the factors of the measurement instrument from the EFA was measured using Cronbach's coefficient alpha (α) with SPSS package. Nunnally's (1978) recommendation of an alpha of 0.7 is what the researcher used in this study as the acceptable range for minimum acceptable standard to demonstrate internal consistency.

4.9.2 *Datum Collection and quantitative analysis (wave two)*

The second sample for wave two was used to further refine the instrument. Before the datum for wave two was collected new items were added to the scale mainly to fit the operationalisation of the three-factor model obtained from the first wave datum. Good scale development is an iterative process which involves several waves of item writing (Clark & Watson,1995). A total sample of 205 interviews was completed for the second wave which exceeded the minimum threshold.

Each dimension was measured by at least three items as recommended by Bollen (1989). The second wave questionnaire consisted of a total of 34 items all measured on a five-point Likert scale.

The first datum yielded a five-factor solution with the dimension of interconnectedness split into three factors. Before the second wave datum collection interconnectedness was re-examined and additional new items were added. Four new items were added to the 30 items namely:

- Your life is interconnected with the lives of other people
- You share a common purpose with other people
- Your life is richer because you share it with other people
- When you are connected to other people you feel a sense of harmony

The second wave datum consisted of 34 items. The datum for wave two was collected from a completely new sample of respondents. Table 16 shows the items for the second wave of datum collection.

Table 16: Wave two Final Instrument

Dimension	Items	New Items
Humanness	You respect other people	
	You treat other people with dignity	
	You recognise other people	
	You treat other people the way that you want to be treated	
	You value other people	
	You believe in the humanity of other people	
	You believe in the value of other people	
	You identify with other people	
	You believe that everyone has the same rights	
	You see everyone as equal	
	We are not separate because of our differences	
Interconnectedness	You enjoy being in community with other people	
	You live in community with other people	
	You feel connected to other people	
	Your life is interdependent with the lives of other people	
	You feel bound to other people	
	You like living together with other people	
	You share possessions with other people	
	Your life is interconnected with the lives of other people	New item
	You share a common purpose with other people	New item
	Your life is richer because you share it with other people	New item
	When you are connected to other people you feel a sense of harmony	New item

Dimension	Items	New Items
Compassion	You are kind to other people	
	You are hospitable to other people	
	You love other people	
	You wish the best for other people	
	You are helpful to other people	
	You are concerned about the well-being of other	
	You try to be a blessing to other people	
	You exhibit good will to other people	
	You are friendly to other people	
	You are thoughtful of other people	
	You have a caring attitude towards other people	
	You feel sorry for people who are suffering	

i) Bartlett's Test of Sphericity & The Kaiser-Meyer-Olkin (KMO) Measure

Similar to wave one datum the first test was conducted to test factor analysability. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was also used to assess if factor analysis is appropriate for the datum.

ii) Exploratory Factor Analysis (EFA)

Once the Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was conducted the first analysis of the measure was Exploratory Factor Analysis as with the wave one datum. The number of factors and items underlying the dimensions were identified for the 34 items of the instrument.

iii) Reliability

Reliability was assessed using the Cronbach's Coefficient alpha using SPSS 22 package. Nunnally's (1978) recommendation of an alpha of 0.7 is what the researcher used in this study as the acceptable range for minimum acceptable standard to demonstrate internal consistency.

iv) Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis was conducted to test for the convergent and discriminant validity in the second study. SPSS Amos module was used to conduct all the analyses. A CFA of the 19-item measurement model for the second wave datum was conducted to determine how well the datum fits the proposed 19 item theoretical model derived from the EFA as an indication of construct validity. The CFA was conducted using the AMOS module for SPSS package. The output for CFA was

examined to check if the proposed model was a good fit to the datum. The modification indices were assessed for good model fit.

As pointed out by Farrell and Rudd (2009), one cannot rely on fit indices alone to assess a model's construct validity. A number of statistics were used to assess whether the wave two datum fitted the proposed model. Model fit is commonly assessed using chi-square. When the hypothetical model matches the observed datum then the chi-square value is zero. The p-values as well as the alpha values are calculated, and these used to either reject or accept the null hypothesis. A p-value of 0.05 or less rejects the null hypothesis at 5% level (Diamantopoulos & Siguaw, 2000). The chi-square statistic has limitations and it is not recommended to rely on this alone as a measure of model fit (Bagozzi & Foxall, 1996).

According to Martínez-López et al. (2013) one of the most informative fit indices is the RMSEA statistic, which is increasingly being used in marketing and business research for assessment of model fit. RMSEA is one recommended indice when the model is based on large sample sizes (Diamantopoulos & Siguaw, 2000). As discussed earlier Browne and Cudeck (1993) recommends that RMSEA value ≤ 0.05 is considered a good fit to the model while values between 0.05 and 0.08 are considered adequate fit, values between 0.08 and 0.10 as mediocre fit where as RMSEA values greater than 0.10 are not acceptable. Hair et al. (2010) argued that the RMSEA statistic should be used in combination with other measures and that an absolute cut-off is not recommended. The researcher looked at RMSEA in conjunction with other model fit statistics.

The expected cross-validation index (ECVI) allows the researcher to choose a model that minimises the overall error, namely the difference between the population covariance matrix and the model fitted to the sample. ECVI is an evaluation of how well a model fits to the calibration sample in comparison to the validation samples (Kaplan, 2000). The smallest ECVI estimate is an indication that the model is the best fit.

In addition to the fit indices, the factor loadings were also assessed for evidence of convergent validity. Convergent validity was assessed using average variance extracted (AVE). As discussed earlier when the AVE value is less than 0.5 it is an indication that on average there is more error in the items than the variance explained by the latent factor structure imposed on the measure. To test for discriminant validity according to Fornell and Larcker (1981) the AVE is compared to the squared correlation between each pair of constructs (shared variance). Evidence of discriminant validity is indicated when, AVE estimates for two factors are greater than the square of the correlation between

the two factors (Fornell & Larcker, 1981). The researcher used both these statistics to assess discriminant validity.

4.9.3 Datum Collection and quantitative analysis (wave three)

The wave three datum were used to confirm the final instrument, conduct discriminant validity with the collectivism scale as well as predictive validity and testing for invariance. The three-factor model with 19 items obtained from the second wave datum was used in wave three for the instrument. A total sample of 200 interviews were completed for the third wave which exceeded the minimum threshold. Each dimension was measured by at least three items. The third wave questionnaire consisted of a total of 19 items all measured on a five-point Likert scale. No new items were added to the third wave except the collectivism scale and questions that were to be used for predictive validity. The second wave datum yielded a three-factor solution as initially hypothesised. The datum for wave three was collected from a completely new sample of respondents as with the other waves of datum collection. Table 17 shows the items for the final wave three datum collection.

Table 17: Wave three Final Instrument

Dimension	Items
Humanness	You treat other people with dignity
	You recognise other people
	You treat other people the way that you want to be treated
	You value other people
	You believe in the humanity of other people
	You respect other people
Interconnectedness	Your life is interconnected with the lives of other people
	You share possessions with other people
	You like living together with other people
	Your life is richer because you share it with other people
	When you are connected to other people you feel a sense of harmony
Compassion	You have a caring attitude towards other people
	You are concerned about the well-being of other people
	You are thoughtful of other people
	You feel sorry for people who are suffering
	You try to be a blessing to other people
	You exhibit good will to other people
	You are helpful to other people
	You wish the best for other people

Similar to the first two waves of datum collection the first test was conducted to test factor analysability followed by EFA. The number of factors and items underlying the dimensions were identified for the 19 items of the instrument. After EFA the model one item was remove, “You feel sorry for people who are suffering” to remain with an 18-items model. Reliability was assessed using the Cronbach’s Coefficient alpha to assess internal consistency on the 18-item model after EFA.

i) Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM)

Confirmatory Factor Analysis was conducted to test for construct validity which included (reliability, convergent validity, discriminant validity and nomological validity), model fit and measurement invariance in the third and final study. A CFA of the 18-item measurement model for the third wave datum was conducted to determine how well the datum fits the proposed theoretical model derived from the EFA as an indication of construct validity. As with the second wave datum the output for CFA was examined if the proposed model was a good fit to the datum. The modification indices were assessed for good model fit. As with second datum model fit was assessed using the Chi-square statistic. Evidence of construct validity was assessed using the p-value of the test as well as the RMSEA fit statistic. The expected cross-validation index (ECVI) was used to assess convergent validity. Wave two datum was analysed to refine, purify and to replicate the measurement instrument. Predictive validity was conducted at this stage.

Discriminant validity is demonstrated when an item load significantly on one factor only and not significantly on the other factors. According to Farrell (2010) discriminant validity is the degree to which one latent factor discriminates from other latent factors. The researcher considered a number of factor solutions. The researcher considered items with factor loadings ≥ 0.4, which did not cross-load and loaded significantly onto one factor for evidence of discriminant and construct validity.
Items with less than 0.5 factor loadings and cross-loaded onto more than one factor were discarded. The researcher used item loadings and cross loadings on factors as the main deciding factor on whether items should be deleted or retained in the datum. According to Worthington & Whittaker (2006) internal consistency of the instrument scores as well as the low conceptual consistency with other items on the factor can also be considered in deciding deletion of items in the datum. Furthermore, researchers need to do a trade-off between brevity and reliability (Worthington and Whittaker, 2006) as longer scales are usually more reliable.

Nomological validity assesses whether there is consistency between the relationships among measures and theoretical predictions (Netemeyer et al., 2003). Nomological validity is assessed using simple correlation between the construct of interest and the measures of other constructs (Spiro & Weitz, 1990). Nomological validity can be assessed in a two-step approach where the first

step is to develop the measurement model and evaluate it separately from the full SEM (Gerbing & Anderson, 1988). Nomological validity is an extension of predictive validity (Rossiter, 2002). Nomological validity was tested by specifying the hypothetical linkages between the Ubuntu and measures of charitable behaviour and Self-Report Altruism scale and testing the correlation between them (Podsakoff & MacKenzie, 1994; Schwab, 1980; Spiro & Weitz, 1990).

With the wave three datum measurement invariance was assessed between the online sample (wave two datum) and the third telephonic sample (wave three datum). The purpose of this was to assess invariance between the two samples. Evidence of invariance across two groups will indicate that the measures in the measurement model have the same meaning in more than one group. Testing for invariance in scale development addresses the question on whether the measurement parameters of a measuring instrument are different across two samples.

The first step in measurement invariance assessment was to assess configural invariance as recommended by Steenkamp & Baumgartner (1998); Vandenberg & Lance (2000). Once configural invariance was assessed the next step was to assess weak invariance. Evidence of weak invariance is indicated by a close fit of the datum when a model is fitted with factor loadings constrained to be equal in both samples.

The next step after assessing weak invariance was the assessment of strong invariance. Intercepts on the model for the two samples are used to assess strong invariance. Strict invariance was assessed by the structure of the model, which is expected to be the same across the two samples, the factor loadings must also be the same as well as the regression intercepts must also be the same. The measurement error variance-covariance matrix must be constrained to be the same in the two samples. Complete invariance satisfies similar assessment as strict invariance where the structure of the model must be the same in the two samples, the factor loadings of the model must be the same, the vector of regression intercepts must be the same as well as the measurement error variance-covariance matrix must be the same. Unlike strict invariance, complete invariance the latent variable variance-covariance matrix must be constrained to be the same in the two samples.

4.10 Ethical concerns

Ethical concerns arise when datum is collected mainly from humans. It was important in the study to make sure individual anonymity was maintained during the collection and analysis of the datum. A consent note accompanied each survey questionnaire and each respondent proceeded with an interview having accepted the consent form.

The researcher obtained ethical clearance for each of the phases conducted. Four Ethical clearances were sought for each of the phases of datum collection. The participants of the research were asked to provide informed consent to be part of the research. It was also clearly explained to the participants that they participate voluntarily in the study and that the research is fully confidential. The researcher made the participants fully aware that they are free to withdraw from the research at any given moment if they wish to do so. The participants were informed of the research purpose, length of the interview and the procedures that were undertaken in the study as well as and the deadlines for completion of the study. The researcher notified the participants of the opportunity to access the results of the study upon completion. The collected datum for all phases of the study are currently stored in a manner that will protect the participant's disclosure. The study was not expected to affect in any way the participants physically or emotionally. The researcher is therefore bound by ethical standards as well as the fact that all information obtained is confidential and used only for academic purposes.

4.11 Conclusion

This chapter provided a description of the research methodology underpinning the study. The chapter described the research philosophy, paradigm and approach with detailed explanation of the unit of analysis and the primary and secondary sources of datum used in the study. The new instrument was developed by starting with the generation of items, followed by refinement of the measure by a panel of experts. Once the draft instrument for first wave was completed a pilot study was conducted to make sure the items are clearly understood by the respondents.

The operationalisation of the three dimensions of Ubuntu was discussed with an explanation of how the items originated. The section also explained the datum bases that were used as the study population for the three waves of datum as well as how the datum was collected for each wave. The statistical analysis that was performed on each datum to ensure the developed scale has construct validity (convergent validity, reliability, discriminant validity and nomological validity), model fit and measurement invariance are discussed. Chapter five discusses the empirical findings for the three waves of datum.

5 RESEARCH RESULTS

5.1 Introduction

Chapter four described the research methodology for the study. The research philosophy, paradigm and approach as well as the unit of analysis and the primary and secondary sources of datum used are discussed. The chapter discusses how the new instrument was developed from the generation of items, refinement of the measure by a panel of experts. The pilot study conducted before the main survey is discussed. The chapter discussed the dimensions of wave one instrument as well as how they were defined and operationalised. Details of how the three surveys were conducted are discussed. Furthermore, the chapter provides a detailed discussion of the statistical analyses performed for the three waves of datum.

This chapter presents the empirical findings for each of the three waves of datum collection. The results of the first wave exploratory factor analysis to identify the underlying factors are reported. The results of the confirmatory factor analysis for the second wave and third wave datum to show the goodness of fit indices of the datum are also reported. The reliability tests for both samples are discussed. Evidence of convergent validity, discriminant validity, nomological validity, reliability and measurement invariance are reported. The final instrument after the three waves datum analyses is reported.

5.2 Wave one study

5.2.1 Datum Collection

The first wave of datum was collected using Computer Assisted Telephonic Interviews (CATI). The telephonic interviews were conducted using Plus 94 Research call centre. Research consultants phoned participants from a datumbase and interviewed them using a structured questionnaire. The responses were recorded on a computer through the CATI system for datum collection called NIPO system. In a datumbase of 64700 a total of 17184 numbers was dialled. A hit rate of 1 in every 34 was achieved for the study. Table 18 shows the response sheet of the telephonic study.

Table 18: Response sheet for the wave one telephonic interviews

Response Code	Total Numbers
Total Dialled	17184
Dialled and no one answers	9392
Dialled and the number is engaged	457
Dialled and number goes to information tone or answer device	2634
Wrong telephone number	287
Appointment	374
Refused to take part in the study	3426
Cannot conduct interview in English	114
Successful completed Interviews	**500**

The demographic information for the collected datum are shown in Appendix 8, 9 and 10.

5.2.2 Bartlett's Test and Measure of Sampling Adequacy

The initial step of the study after datum collection was to conduct the Bartlett's Test of Sphericity to evaluate if factor analysis can be conducted on the collected datum. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is also a statistic used to assess if factor analysis is appropriate. KMO has a value of 0.959 which is very close to one and therefore an indication that factor analysis is appropriate for the datum as recommended by Hair et al. (2006). The Bartlett's Test and the KMO indicated in table 19 confirmed that there was sufficient correlation in the datum for factor analysis to be conducted.

Table 19: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.959
Bartlett's Test of Sphericity	Approx. Chi-Square	25973.541
	Df	3741
	Sig.	.000

5.2.3 Exploratory factor analysis (EFA)

After confirming that factor analysis can be conducted, exploratory factor analysis (EFA) was conducted on the datum using the SPSS package. EFA was conducted to reduce the generated items and establish the initial structure of the Ubuntu measure and purify the instrument. To better interpret the factor structure the factors were rotated to transform the factor matrix. The Principle Component with a Varimax (Orthogonal) rotation of the 87 Likert scale statements was conducted on the wave one datum with a sample of 500 respondents.

Eigenvalues, the Percentage of Variance Explained, and the individual factor loadings were examined to identify the number of factors to extract from the datum. Tabachnick & Fidell (2001) discusses the criteria for determining the magnitude of factor loadings and cross-loadings as a matter of researcher preference. Furthermore, Worthington & Whittaker (2006) assert that researchers should therefore set their own minimum values for factor loadings as high as possible. According to Hair et al. (2010), factor loadings of ≥ 0.4 are regarded as sufficiently large. In this study, the researcher therefore considered items that did not cross-load, that loaded significantly onto one factor and had factor loadings ≥ 0.4 to be sufficiently large.

After the EFA had been conducted, five dimensions emerged from the initial datum, measured by 30 items (compared with three factors and 87 items at the start of the process). The first two factors Compassion, and Humanness were as initially identified. However, the interconnectedness dimension split into three factors.

Table 20 shows the individual factor loadings for the five-factor solution extracted for the first wave datum.

Table 20: Individual factor loadings for EFA wave one

Rotated Component Matrix[a]					
	Component				
	1	2	3	4	5
B3. You are kind to other people	**0.806**	0.19	0.088	0.113	0.157
B3. You wish the best for other people	**0.757**	0.136	0.08	0.023	0.046
B3. You are hospitable to other people	**0.749**	0.150	0.174	0.105	0.187
B3. You are helpful to other people	**0.744**	0.156	0.11	0.143	0.099
B3. You love other people	**0.742**	0.152	0.271	0.027	0.103
B3. You try to be a blessing to other people	**0.733**	0.096	0.159	0.064	0.186
B3. You are friendly to other people	**0.731**	0.163	0.062	0.127	0.034
B3. You are thoughtful of other people	**0.726**	0.169	0.157	0.083	0.135
B3. You are concerned about the well-being of other	**0.719**	0.168	0.226	0.017	0.082
B3. You feel sorry for people who are suffering	**0.701**	0.197	0.107	0.051	0.12
B3. You have a caring attitude towards other people	**0.700**	0.194	0.233	0.067	0.026
B3. You exhibit good will to other people	**0.696**	0.209	0.22	0.136	0.065
B1. You recognise other people	0.135	**0.732**	0.115	0.147	0.051
B1. You value other people	0.147	**0.731**	0.211	0.07	0.165
B1. You believe in the humanity of people	0.092	**0.717**	0.084	0.095	0.125
B1. You treat other people the way that you want to be treated	0.207	**0.717**	0.011	0.106	0.027
B1. You treat other people with dignity	0.357	**0.692**	0.020	0.215	-0.059
B1. You believe in the value of other people	0.212	**0.686**	-0.013	0.059	0.275
B1. You respect other people	0.260	**0.677**	0.177	0.196	-0.133
B1. You identify with other people	0.150	**0.612**	0.253	0.218	0.126
B2. You enjoy being in community with other people	0.281	0.207	**0.768**	0.048	0.193
B2. You live in community with other people	0.279	0.092	**0.744**	0.061	-0.007
B2. You like living together with other people	0.236	0.121	**0.650**	0.051	0.29
B2. You feel connected to other people	0.327	0.196	**0.593**	0.168	0.245
B1. You believe that everyone has the same rights	0.087	0.208	-0.075	**0.764**	0.112
B1. You see everyone as equal	0.142	0.237	0.207	**0.737**	0.056
B1. We are not separate because of our differences	0.171	0.283	0.139	**0.668**	0.145
B2. You feel bound to other people	0.211	0.069	0.218	0.156	**0.660**
B2. Your life is interdependent with the lives of other people	0.133	0.111	0.105	0.111	**0.803**
B2. You share possessions with other people	0.313	0.217	0.273	0.033	**0.510**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 7 iterations.					

The datum presented a five-factor solution which explained 61.211% of the variation in the datum, and all five factors returned Eigenvalues exceeding one as shown in table 20. Factors with Eigenvalue > 1.0 were retained since Eigenvalues less than one are not considered. For factor one the Initial Eigenvalue is 11.343 and explains 37.812% of the variance in the datum while the other factors explain 23.399% of the variance. The initial Eigenvalue for Factor two was 2.941, while that for Factor three was 1.800, for Factor four was 1.250 and for Factor five was 1.030. The Eigenvalues and Percentage of Variance Explained are reported in Table 21.

Table 21: Variance and Eigenvalues of the 5-factor solution for wave one sample

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.343	37.812	37.812	11.343	37.812	37.812	7.360	24.533	24.533
2	2.941	9.803	47.614	2.941	9.803	47.614	4.568	15.225	39.758
3	1.800	5.999	53.613	1.800	5.999	53.613	2.626	8.755	48.513
4	1.250	4.165	57.778	1.250	4.165	57.778	1.929	6.429	54.942
5	1.030	3.432	61.211	1.030	3.432	61.211	1.881	6.268	61.211

Reliability of a measure indicates the extent to which the measurements can be repeated free from random error (Nunnally, 1967). From table 22 the Cronbach's Alpha coefficient for the first four factors were well above 0.7 which is the recommended cut off (Nunnally, 1978) therefore indicating that the four factors are reliable. Factor five has Cronbach's alpha less than 0.7 and is hence not reliable.

Table 22: Reliability of the instrument - Cronbach's Alpha Coefficient

Dimension	**Cronbach's Alpha coefficient**	**Number of items**
1	0.937	12
2	0.882	8
3	0.800	4
4	0.709	3
5	0.662	3

5.3 Wave two study

5.3.1 Datum Collection

The first study was used to mainly reduce the datum using EFA. Once the datum was reduced the second wave datum collection was conducted using the refined measure. After EFA was conducted in Wave one, items were deleted to reduce the datum. To improve the operationalisation of the Wave two Instrument, four new items were added after re-examining interconnectedness. The four new items that was added to the 30 items are:

- Your life is interconnected with the lives of other people
- You share a common purpose with other people
- Your life is richer because you share it with other people
- When you are connected to other people you feel a sense of harmony

The second wave datum consisted of 34 items. The datum for wave two was collected from a completely new sample of respondents.

Since more than 20 items were removed, a new datum set needed to be obtained for further verification of the instrument (Hair et al., 2010). According to Clark & Watson (1995), good scale development is an iterative process that involves numerous periods of item writing. In the second wave study a total of 34 items described the three dimensions of the instrument. These dimensions were the same as those operationalised in Wave one, they were not renamed.

To confirm the construct validity of the instrument, the measure was again subjected to empirical assessment with a second study. In Wave two, datum was collected in a different manner than wave one. The second wave of datum was collected using online surveys. A link to the online survey was distributed to potential respondents by email. Once the questionnaire was emailed to the list of respondents, the researcher sent weekly reminders to potential respondents that had not responded to the survey. The reminders were done via email. Out of a total datumbase of 8150 potential respondents a total of 205 online interviews were achieved. A hit rate of 1 in every 40 was experienced for this particular online study. Table 23 below shows the response sheet of the online survey.

Table 23: Response sheet for the Wave two Online interviews

Response Code	Total Numbers
Questionnaires distributed	8150
Questionnaires returned	236
Questionnaires with missing datum	31
Usable Questionnaires	205
Response rate	1 in 40
Successful completed Interviews	**205**

5.3.2 Bartlett's Test and Measure of Sampling Adequacy

As with the first study, the initial step after datum collection was to conduct the Bartlett's Test of Sphericity to evaluate if factor analysis can be performed on the collected datum. KMO has a value of 0.932 which is very close to one and therefore an indication that factor analysis is appropriate for the datum. The Bartlett's Test and the KMO indicated in table 23 below confirmed that there was sufficient correlation in the datum for factor analysis to be conducted.

Table 24: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.932
Bartlett's Test of Sphericity	Approx. Chi-Square	4824.022
	Df	561
	Sig.	.000

5.3.3 Exploratory factor analysis (EFA)

After confirming that factor analysis can be conducted, Exploratory factor analysis (EFA) was conducted with the datum using the SPSS package. Eigenvalues, the Percentage of Variance Explained, and the individual factor loadings were examined to identify the number of factors to extract from the datum. Similar to wave one study, the researcher considered items that did not cross-load,that loaded significantly onto one factor and had factor loadings ≥ 0.4 to be sufficiently large and therefore indicated evidence of discriminant and construct validity. Table 24 shows the individual factor loadings for the factor solution extracted for the second study. The Principle Component with a Varimax (Orthogonal) rotation of the 34 Likert scale statements was conducted on the wave two datum with a sample of 205 respondents.

After the EFA for wave two datum had been conducted, three dimensions emerged, measured by 19 items. The wave two datum EFA results had three dimensions (Humanness, Interconnectedness and Compassion) as initially hypothesised with the literature, in-depth interviews and focus groups.

Table 25: Individual factor loadings for EFA Wave two

Rotated Component Matrix[a]			
	Component		
Item	1	2	3
You have a caring attitude towards other people	**0.804**	0.284	0.149
You are concerned about the well-being of other	**0.800**	0.237	0.136
You are thoughtful of other people	**0.775**	0.217	0.144
You feel sorry for people who are suffering	**0.740**	0.171	0.088
You try to be a blessing to other people	**0.738**	0.190	0.228
You exhibit good will to other people	**0.731**	0.282	0.19
You are helpful to other people	**0.718**	0.304	0.23
You wish the best for other people	**0.701**	0.419	0.191
You treat other people with dignity	0.276	**0.839**	0.112
You recognise other people	0.199	**0.830**	0.100
You treat other people the way that you want to be treated	0.249	**0.818**	0.050
You value other people	0.337	**0.789**	0.134
You believe in the humanity of other people	0.220	**0.781**	0.061
You respect other people	0.342	**0.744**	0.154
Your life is interconnected with the lives of other people	0.078	0.073	**0.802**
You share possessions with other people	0.148	0.003	**0.753**
You like living together with other people	0.170	0.073	**0.741**
Your life is richer because you share it with other people	0.145	0.152	**0.732**
When you are connected to other people you feel a sense of harmony	0.260	0.160	**0.730**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

The datum retained a three-factor solution which explained 67.215% of the variation in the datum, and all three factors returned Eigenvalues exceeding one as shown in the table 25. For factor one the Initial Eigenvalue was 8,603 and explains 45.280% of the variance in the datum while the other factors explain 21.935% of the variance. The initial Eigenvalue for Factor two was 2.450, while that for Factor three was 1.718. The Eigenvalues and Percentage of Variance Explained are reported in Table 26.

Table 26: Variance and Eigenvalues of the three-factor solution for wave two sample

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.603	45.280	45.280	8.603	45.280	45.280	5.123	26.963	26.963
2	2.450	12.894	58.174	2.450	12.894	58.174	4.503	23.701	50.664
3	1.718	9.041	67.215	1.718	9.041	67.215	3.145	16.551	67.215

As with the initial study the reliability of the measure was assessed for the derived three factors. From table 27 the Cronbach's Alpha coefficient for all the three factors are well above 0.7 which is the recommended cut off (Nunnally, 1978) therefore indicating that the three factors are reliable.

Table 27: Reliability of the wave two instrument - Cronbach's Alpha Coefficient

Dimension	Cronbach's Alpha coefficient	Number of items
1	0.927	8
2	0.923	6
3	0.832	5

5.3.4 Confirmatory factor analysis (CFA)

Once the EFA was conducted the next step was to conduct a multivariate normality assessment on the 19 items that were extracted from the EFA. Confirmatory Factor Analysis was conducted using the AMOS module. The test for normality was conducted and the results are shown in the table 28:

Table 28: Test of multivariate normality for continuous variables for wave two

Variable	skew	c.r.	kurtosis	c.r.
You exhibit good will to other people	-1.417	-8.285	4.313	12.604
You wish the best for other people	-2.233	-13.051	8.881	25.955
You are helpful to other people	-1.926	-11.255	6.940	20.282
When you are connected to other people you feel a sense of harmony	-0.921	-5.382	0.926	2.705
Your life is richer because you share it with other people	-0.742	-4.336	0.270	0.788
You like living together with other people	-0.667	-3.899	0.037	0.108
You share possessions with other people	-0.808	-4.725	0.189	0.552
Your life is interconnected with the lives of other people	-0.831	-4.857	0.397	1.159

Variable	skew	c.r.	kurtosis	c.r.
You respect other people	-2.343	-13.695	7.879	23.029
You believe in the humanity of other people	-2.067	-12.085	5.121	14.965
You value other people	-1.671	-9.765	4.770	13.940
You treat other people the way that you want to be treated	-2.295	-13.416	6.691	19.557
You recognise other people	-1.728	-10.101	5.198	15.191
You treat other people with dignity	-2.162	-12.637	6.432	18.799
You try to be a blessing to other people	-1.537	-8.984	3.929	11.483
You feel sorry for people who are suffering	-2.297	-13.428	7.950	23.236
You are thoughtful of other people	-1.730	-10.114	5.137	15.014
You are concerned about the well-being of other	-1.817	-10.620	5.874	17.167
You have a caring attitude towards other people	-1.817	-10.620	5.874	17.167
Multivariate			**149.189**	**37.808**

The c.r. value indicated in table 27, 37.808 is greater than 1.96 which is an indicator that the datum is not normally distributed. The multivariate kurtosis value 149.189 is also high indicating that the datum is not normally distributed. It is therefore not appropriate to use Maximum Likelihood (ML) estimation in SEM. When datum exhibit non-normality there are a number of strategies that could be theoretically adopted. One of the methods adopted is use of corrected test statistics such as the Satorra-Bentler scaled chi-square statistic which is unfortunately not available in AMOS. The researcher adopted the use of bootstrapping procedures in AMOS to deal with non-normality.

Once multivariate normality was assessed, CFA was performed on the wave two datum to enhance confidence in the structure and psychometric properties of the instrument to measure Ubuntu. The researcher used a number of indices to evaluate the goodness of fit of the model. Among some of the ways in which the researcher assessed the model fit are inspection of the modification indices, RMSEA and Standardised Root Mean Square Residual. The Chi-square test is also assessed for model fit. The Chi-Square test of model fit is affected by sample size (Netemeyer et al., 2003), the Comparative Fit Index (CFI) value should be greater than 0.9 to be an acceptable fit (Hair et al., 2006). For an acceptable range model fit the RMSEA and Standardised Root Mean Square Residual should be less than 0.08 (Browne & Cudeck, 1992). Multiple criteria were taken into account as there is no consensus in literature on what constitutes a 'good fit' (Schermelleh-Engel, Moosbrugger & Müller, 2003).

The fitted CFA model for wave two datum is shown in figure 7 and results are discussed in the following section.

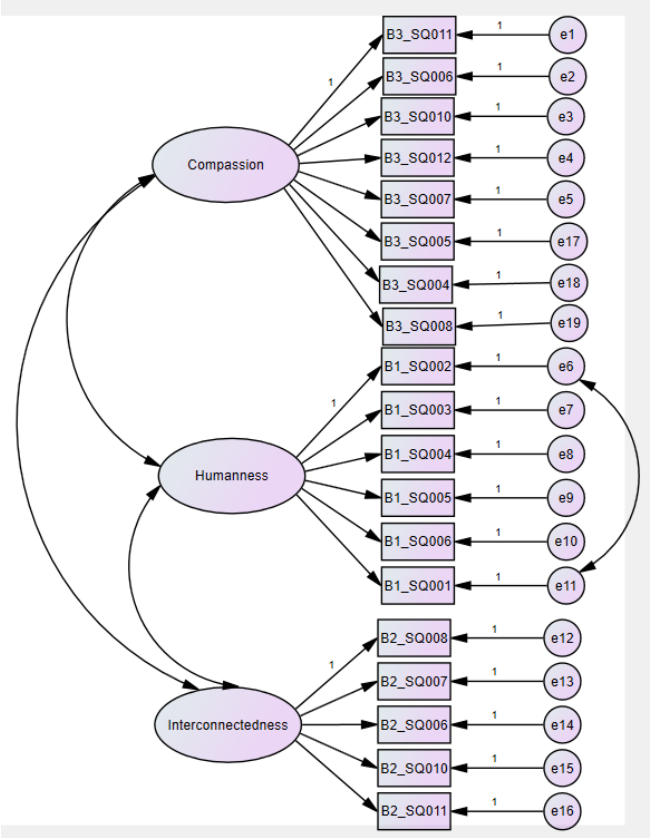

Figure 6: Fitted CFA Model for Wave two Datum in AMOS

**Index of the code variable names is shown in Appendix 1*

Since the Chi-Square test of model fit is affected by sample size (Netemeyer et al., 2003) the Chi-square statistics for the model is very large 232.246 and hence cannot be used to evaluate the goodness of fit of the model. The x^2**/df** is 1.529 which is an indication that this is a good model fit for the datum. If x^2**/df** > 2.00 it represents an inadequate fit (Byrne, 1989, p. 55). RMSEA is 0.053 which is less than 0.08 indicating an adequate (acceptable) fit to the datum. The p value = 0.349 for test of close fit indicating that the datum is a close fit to the model. SRMR statistics 0.047 also suggests an acceptable fit to the datum. The RMR value is 0.029 which is also an indication that the datum is a good fit to the model. NFI is greater than 0.90 as well as CFI is greater than 0.90 also indicating a good fit to the datum. The ECVI value is smaller than the value of the comparative model also supporting that the datum is a good fit to the model. The Bollen-Stine bootstrap p = 0.154 indicating that the model is correct fit to the datum. The critical N value is 156 which is less than 200 indicating the model is not correct. This value CN>200 has been challenged in literature and should be used with caution.

An analysis of the fit statistics demonstrates that the wave two datum is a good fit to the datum. The statistics indicated that further purification and development is not necessary as the model is a good fit to the datum. The results of wave two datum are shown in table 29.

Table 29: Goodness of Fit Statistics for Wave two datum

Fit Measure	Values for Model	Recommendations
Chi-Square (x^2)	232.246	Due to large sample size the statistic was ignored
Degrees of freedom	148	
x^2/df	1.569	Good fit
RMSEA	0.053	Adequate fit
p-value for test of close fit (RMSEA < 0.05)	0.349	Close fit
RMSEA Confidence interval	(0.039; 0.066)	Good fit
SRMR	0.047	Adequate fit
RMR	0.029	Good fit
TLI	0.961	Good fit
NFI	0.912	Good fit
CFI	0.970	Good fit
ECVI	1.550	Good fit
Bollen-Stine bootstrap p- value	0.154	Model is correct
CN	156	Model is not correct

5.3.5 Convergent and Discriminant validity

Convergent validity is the extent to which the measure is highly similar to other constructs developed to measure the same construct and are theoretically similar (Churchill, 1979; Netemeyer et al., 2003; Pedhazur & Schmelkin, 1991). Convergent validity can also be estimated using average variance extracted (AVE). When the AVE value is less than 0.5 it is an indication that on average there is more error in the items than the variance explained by the latent factor structure imposed on the measure. For each latent structure an AVE should be calculated to assess convergent validity in the measurement model (Hair et al., 2010).

Discriminant validity is the degree to which two measures designed to measure similar, but conceptually different, constructs are related (Netemeyer et al., 2003 p.13). Discriminant validity is used to assess the degree to which a measure of a construct is distinct from measures of other constructs that are theoretically related. In this particular study the researcher will demonstrate that the three constructs of Ubuntu have discriminant validity. Discriminant validity is confirmed when the AVE of a construct is greater than the shared variance between the constructs.

From the results table 30 the AVE of all the dimensions are more than 0.5 indicating convergent validity. Convergent validity is also assessed using the Composite Reliability (CR) which was also conducted for the second wave datum. The accepted value of CR is 0.7. All the CR values for the three dimensions are greater than 0.7 indicating convergent validity. Table 30, 31 and 32 shows the results for convergent and discriminant validity.

The squared correlations for each construct are compared with average variance extracted to confirm discriminant validity. Table 31 shows the squared correlations of the three dimensions compared to the AVE to confirm discriminant validity. The AVE of all the three constructs are greater than the shared correlations between the constructs therefore confirming discriminant validity. Considering the cut off of 0.85 for the HTMT analysis discriminant validity is also confirmed. Discriminant validity and reliability is confirmed for the three-factor model proposed for measuring Ubuntu. Construct validity is demonstrated when there is evidence of both discriminant validity and reliability.

Table 30: Convergent and discriminant validity assessment for wave two

	CR	AVE	MSV
Compassion	0.927	0.616	0.452
Humanness	0.922	0.664	0.452
Interconnectedness	0.833	0.500	0.243

Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV)

Table 31: Discriminant validity assessment using factor correlation matrix with square root of AVE on the diagonal

	Compassion	Humanness	Interconnectedness
Compassion	***0.785***		
Humanness	0.672***	***0.815***	
Interconnectedness	0.493	0.339	***0.707***

Table 32: Discriminant validity assessment using HTMT Analysis

	Compassion	Humanness	Interconnectedness
Compassion			
Humanness	0.670		
Interconnectedness	0.490	0.335	

Table 33: Convergent and discriminant validity results interpretation

Test	Acceptable ranges	Results Interpretation
Reliability	CR > 0.7	Reliability confirmed all CR values greater than 0.7
Convergent Validity	AVE > 0.5	Convergent validity confirmed all AVE values greater than 0.5
Discriminant Validity	MSV < AVE	Discriminant validity confirmed by all three tests for all the constructs
	Square root of AVE greater than inter-construct correlations	
	HTMT < 0.85	

5.4 Wave three study

5.4.1 Datum Collection

The first study was used to reduce the datum using EFA, while the second study was used to refine the measure using both EFA and CFA. After the second wave datum a total of 19 items now described the three dimensions of the instrument as those operationalised in wave one. To confirm the construct validity of the instrument, the measure was again subjected to empirical assessment with a third study. In Wave three, datum were collected using Computer Assisted Telephonic Interviews. The telephonic interviews were conducted using the Plus 94 Research call centre. Research consultants phoned participants from a datumbase and interviewed them using a structured questionnaire. Table 34 shows the response sheet of the telephonic survey.

Table 34: Response sheet for the Wave three telephonic interviews

Response Code	Total Numbers
Total Dialled	9523
Dialled and no one answers	5319
Dialled and the number is engaged	422
Dialled and number goes to information tone or answer device	1388
Wrong telephone number	138
Appointment	186
Refused to take part in the study	1678
Cannot conduct interview in English	92
Successful completed Interviews	**300**

A hit rate of 1 in 32 was achieved for wave three which is almost the same as the hit rate of wave one which was 1 in 34. Online interviews had a higher hit rate than telephonic study.

5.4.2 Bartlett's Test and Measure of Sampling Adequacy

KMO has a value of 0.912 which is very close to one and therefore an indication that factor analysis is appropriate for the wave three datum.

Table 35: KMO and Bartlett's Test for wave three datum

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.912
Bartlett's Test of Sphericity	Approx. Chi-Square	2951.017
	Df	153
	Sig.	0.000

5.4.3 Exploratory factor analysis (EFA)

Exploratory factor analysis (EFA) was conducted. As with the previous two studies Eigenvalues, the Percentage of Variance Explained, and the individual factor loadings were examined to identify the number of factors to extract from the datum. Three dimensions emerged measured by 18-items. The item removed at this stage is "You feel sorry for people who are suffering" as it loaded high on two factors. The three dimensions (Humanness, Interconnectedness and Compassion) are as initially hypothesised with the literature, in-depth interviews and focus groups.

Table 36: Individual factor loadings for EFA Wave three

Item	Component		
	1	2	3
You treat other people with dignity	**.862**	.180	.152
You recognise other people	**.841**	.273	.124
You respect other people	**.789**	.262	.176
You believe in the humanity of other people	**.777**	.195	.223
You value other people	**.724**	.277	.243
You treat other people the way that you want to be treated	**.719**	.159	.012
You exhibit good will to other people	.284	**.785**	.148
You are thoughtful of other people	.263	**.734**	.207
You try to be a blessing to other people	.144	**.732**	.105
You have a caring attitude towards other people	.197	**.710**	.123
You are concerned about the well-being of other people	.284	**.691**	.273
You wish the best for other people	.152	**.674**	.104
You are helpful to other people	.116	**.659**	.143

Item	Component		
	1	2	3
Your life is richer because you share it with other people	.051	.195	**.780**
You share possessions with other people	.152	.181	**.772**
When you are connected to other people you feel a sense of harmony	.132	.218	**.756**
You like living together with other people	.189	.123	**.713**
Your life is interdependent with the lives of other people	.145	.081	**.706**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

The datum retained a three-factor solution which explained 62.878% of the variation in the datum, and all three factors returned Eigenvalues exceeding one as shown in the table 37.

Table 37: Variance and Eigenvalues of the three-factor solution for wave three

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.394	41.080	41.080	7.394	41.080	41.080	4.145	23.030	23.030
2	2.101	11.671	52.750	2.101	11.671	52.750	4.014	22.303	45.332
3	1.823	10.128	62.878	1.823	10.128	62.878	3.158	17.546	62.878

Factor one the Initial Eigenvalue was 7.394 and explains 41.080% of the variance in the datum while the other factors explain 21.798% of the variance. The initial Eigenvalue for Factor two was 2.101, while that for Factor three was 1.823. The Eigenvalues and Percentage of Variance Explained are reported in Table 37.

As with the other studies the reliability of the measure was assessed for the derived three factors. From table 38 the Cronbach's Alpha coefficient for all the three factors are well above 0.7 therefore indicating that the three factors are reliable. Reliability is therefore confirmed for the three-factor model proposed for measuring Ubuntu for the third wave datum.

Table 38: Reliability of the instrument - Cronbach's Alpha Coefficient

Dimension	Cronbach's Alpha coefficient	Number of items
Humanness	0.906	6
Interconnectedness	0.831	5
Compassion	0.877	7

5.4.4 Confirmatory factor analysis (CFA)

Confirmatory Factor Analysis was conducted using AMOS module. The model fitted for the third datum is shown in the figure 8:

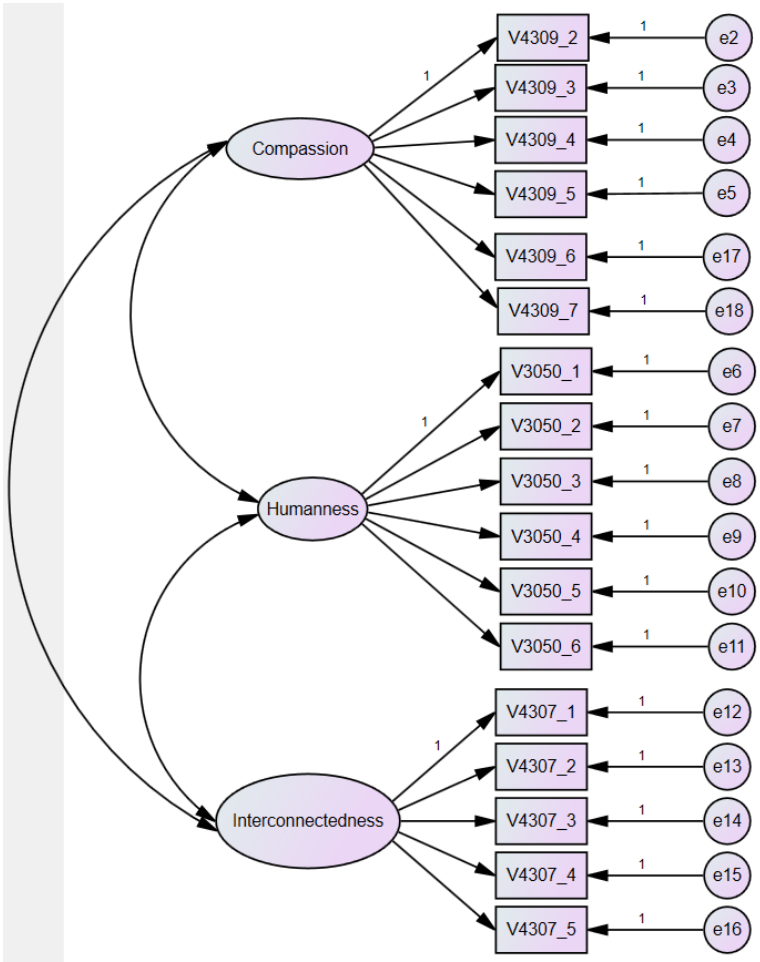

Figure 7: Fitted CFA Model for Wave three Datum in AMOS

**Index of the code variable names is shown in Appendix 2*

Similar to wave two datum the first step was to conduct a multivariate normality assessment on the 18 items. The test for normality was conducted and the results are shown in table 39. The c.r. value **101.263** is greater than 1.96 which is an indicator that the datum is not normally distributed. The kurtosis value is also very large indicating violation of normally distributed sample. Bootstrapping procedures in AMOS were applied to deal with non-normality.

Table 39: Test of multivariate normality for continuous variables

Variable	skew	c.r.	kurtosis	c.r.
You have a caring attitude towards other people	-2.537	-17.942	8.708	30.786
You are thoughtful of other people	-1.793	-12.677	2.942	10.401
When you are connected to other people you feel a sense of harmony	-1.188	-8.400	0.716	2.533
Your life is richer because you share it with other people	-1.532	-10.833	2.060	7.283
You share possessions with other people	-1.232	-8.713	1.308	4.626
You like living together with other people	-1.276	-9.023	1.025	3.624
Your life is interdependent with the lives of other people	-1.292	-9.133	1.242	4.390
You believe in the humanity of other people	-1.705	-12.056	1.973	6.975
You value other people	-2.036	-14.399	3.384	11.963
You treat other people the way that you want to be treated	-3.164	-22.374	14.512	51.308
You recognise other people	-2.215	-15.663	4.243	15.001
You treat other people with dignity	-2.500	-17.678	5.734	20.272
You respect other people	-2.248	-15.898	3.777	13.355
You exhibit good will to other people	-1.728	-12.220	2.121	7.498
You try to be a blessing to other people	-1.698	-12.007	1.917	6.777
You are concerned about the well-being of other people	-1.742	-12.316	2.813	9.947
You are helpful to other people	-1.555	-10.996	1.485	5.249
Multivariate			**297.192**	**101.263**

Once multivariate normality was assessed, the wave three datum were analysed to enhance confidence in the structure and psychometric properties of the instrument to measure Ubuntu. Similar indices discussed for wave two were used in the third wave datum to evaluate the goodness of fit of the model.

The chi-square statistic is very large 234.481 and hence cannot be used to evaluate the goodness of fit of the model. The x^2**/df** is 2.021 which is an indication that this is an acceptable fit for the datum. RMSEA is 0.058 which is less than 0.08 indicating adequate (acceptable) fit to the datum. The p-value test of close fit for RMSEA is 0.097 indicating that the model is close fit to the datum. SRMR statistics is 0.042 also suggesting an acceptable fit to the datum. The CFI is greater than 0.90 also indicating a good fit to the datum. RMR<0.05 which indicates a good fit to the datum. The ECVI value is smaller than the value of the comparative model hence supporting that the datum is a good fit to the model. The Bollen-Stine bootstrap p values are above 0.05 indicating that we do not reject the null hypothesis that the model is correct fit to the datum.

An analysis of the fit statistics demonstrates that the wave three datum is a close-fitting model to the datum. The rest of the statistics excluding the Chi-Square values which are influenced by the sample size, indicated that further purification and development is not necessary as the model is a close fit

to the datum. The final model after purification therefore consists of 17 items as the item “You wish the best for other people” was removed to improve the model fit of the datum. Table 40 shows the goodness of fit statistics for the wave three datum:

Table 40: Goodness of Fit Statistics for Wave three

Fit Measure	Values for Model	Recommendations
Chi-Square (x^2)	234.481	Due to large sample size the statistic was ignored
Degrees of freedom	116	
x^2/df	2.021	Good fit
RMSEA	0.058	Adequate fit
p-value for test of close fit (RMSEA < 0.05)	0.097	Close fit
RMSEA Confidence interval	(0.048; 0.069)	Adequate fit
SRMR	0.0418	Adequate fit
RMR	0.018	Good fit
TLI	0.949	Good fit
NFI	0.918	Good fit
CFI	0.957	Good fit
ECVI	1.032	Good fit
Bollen-Stine bootstrap p- value	0.096	Model is correct
CN	182	Model is not correct

5.4.5 Convergent and discriminant validity

Convergent validity is estimated using average variance extracted (AVE). When the AVE value is less than 0.5 it is an indication that on average there is more error in the items than the variance explained by the latent factor structure imposed on the measure. For each latent structure the AVE was calculated to assess convergent validity in the measurement model. From the results the AVE of all the dimensions are more than 0.5 indicating convergent validity. Convergent validity is also assessed using the Composite Reliability (CR) which was also conducted for the third wave datum. The value of CR is greater than 0.7 indicating convergent validity.

Discriminant validity is used to assess the degree to which a measure of a construct is distinct from measures of other constructs that are theoretically related. Discriminant validity is confirmed when the AVE of a construct is greater than the shared variance between the constructs. The AVE values are greater than the shared correlations between the constructs confirming discriminant validity. Discriminant validity and reliability is confirmed for the three-factor model proposed for measuring Ubuntu for wave three datum. Table 41 shows the calculated AVE for each dimension. Discriminant validity is also assessed using the HTMT ratio which is less than 0.85 also confirming discriminant validity.

Table 41: Convergent and discriminant validity assessment wave three

	CR	AVE	MSV
Compassion	0.871	0.532	0.375
Humanness	0.913	0.639	0.375
Interconnectedness	0.836	0.505	0.27

Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV)

Table 42: Discriminant validity assessment using factor correlation matrix with square root of AVE on the diagonal

	Compassion	Humanness	Interconnectedness
Compassion	**0.729**		
Humanness	0.613***	**0.8**	
Interconnectedness	0.52	0.442	**0.711**

Table 43: Discriminant validity assessment using HTMT Analysis

	Compassion	Humanness	Interconnectedness
Compassion			
Humanness	0.615		
Interconnectedness	0.519	0.455	

Table 44: Convergent and discriminant validity results interpretation for wave three

Test	Acceptable ranges	Results Interpretation
Reliability	CR > 0.7	Reliability confirmed all CR values greater than 0.7
Convergent Validity	AVE > 0.5	Convergent validity confirmed all AVE values greater than 0.5
Discriminant Validity	MSV < AVE	Discriminant validity confirmed by all three tests for all the constructs
	Square root of AVE greater than inter-construct correlations	
	HTMT < 0.85	

5.4.6 Discriminant Validity – Collectivism Scale

Some scholars have argued that Collectivism is related to the Ubuntu concept (Malunga, 2009; Ncube, 2010; Poovan et al., 2006). Ubuntu has some similarities to the concept of collectivism but these two concepts have distinct differences as discussed in section 2.7. It was therefore important for this research to show discriminant validity for Ubuntu and collectivism. While there are similarities with the Ubuntu concept, it is important to note that collectivism dimensions are not the same as the dimensions of the Ubuntu concept.

Research conducted by Poovan et al. (2006) indicated that Ubuntu is a collective value system and it is impossible to practice the social values of Ubuntu without a collective mind set hence Collectivism was concluded to be a pillar of Ubuntu lifestyle. This research therefore aims to show that Ubuntu construct has discriminant validity with Collectivism construct. The researcher used the Individual-Collectivism scale by Triandis and Gelfand (1998) to measure Collectivism and assess discriminant validity. The Individual-Collectivism scale by Triandis and Gelfand (1998) has 16 items which are split into four dimensions as shown in table 45:

Table 45: Individualism-Collectivism Scale

Horizontal Individualism
I would rather depend on myself than others
I rely on myslef most of the time; I rarely rely on others
Often do my own thing
My personal identity independent of others is very important to me
Vertical Individualism
It is important that I do my job better than others
Winning is everything
Competition is the law of nature
When another person does better than I do, I get tense and aroused
Horizontal collectivism
If a coworker gets a prize, I would feel proud
The well-being of my coworkers is important to me
To me, pleasure is spending time with others
I feel good when I cooperate with others
Vertical collectivisim
Parents and children must stay together as much as possible
It is my duty to take care of my family, even when I have to sacrifice what I want
Family members should stick together no matter whar sacrifices are required
It is important to me that I respect the decions made by my groups

Datum for collectivism was collected during the third wave of datum collection. The datum collected was to test disciminant validity with collectivism as well as normological validity and measurement invariance.

Test for dicriminant validity was conducted with two models
1) Collectivism constructs (Figure 9)
2) Individualism and collectivism constructs (Figure 10).

The results for the two models are discussed and reported.

1. Discriminant validity with Collectivism constructs

The model for testing dicriminant validity of Ubuntu and collectivism only construct is shown in figure 9 and the results of the assessment is shown in tables 46 – 48.

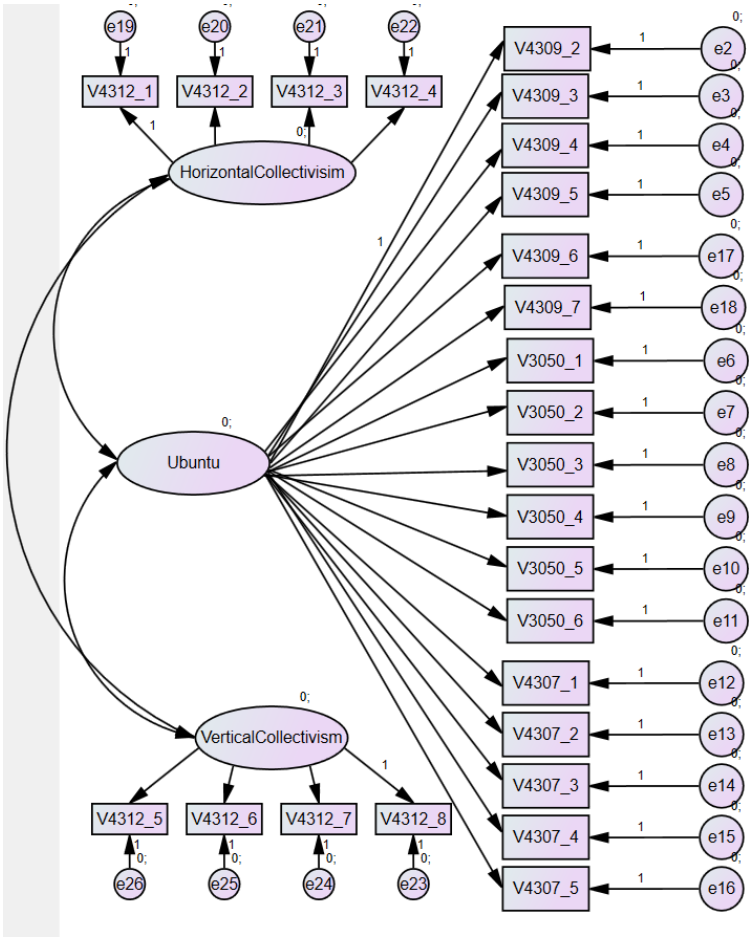

Figure 8: **Fitted CFA Model for Discriminant Validity with Collectivism in AMOS**

**Index of the code variable names is shown in Appendix 3*

Table 46: Discriminant validity assessment using AVE and MSV comparison

	AVE	MSV
Ubuntu	0.380	0.473
Horizontal Collectivism	0.430	0.473
Vertical Collectivism	0.340	0.443

Average Variance Extracted (AVE), Maximum Shared Variance (MSV)

Table 47: Discriminant validity assessment factor correlation matrix with square root of AVE on the diagonal

	Ubuntu	Horizontal Collectivism	Vertical Collectivism
Ubuntu	**0.616**		
Horizontal Collectivism	0.688***	**0.656**	
Vertical Collectivism	0.462	0.666	**0.583**

Table 48: Discriminant validity assessment with Collectivism scale using HTMT Analysis

	Ubuntu	Horizontal Collectivism	Vertical Collectivism
Ubuntu			
Horizontal Collectivism	0.715		
Vertical Collectivism	0.483	0.729	

Table 49: Discriminant validity results interpretation

Test	Acceptable ranges	Results Interpretation
Discriminant Validity	AVE > MSV	Discriminant validity confirmed by HTMT test.
	Square root of AVE greater than inter-construct correlations	
	HTMT < 0.85	

It can be concluded that there is discriminant validity with collectivism. HTMT test confirms discriminant validity. Considering the AVE-SV test is very conservative it can be concluded that discriminant validity can be confirmed for Ubuntu and collectivism scales.

2. Discriminant validity with Individualism-Collectivism constructs

The model for testing dicriminant validity of Ubuntu and individualism and collectivism constructs is shown in figure 10 and the results of the assessment are shown in tables 50 – 52.

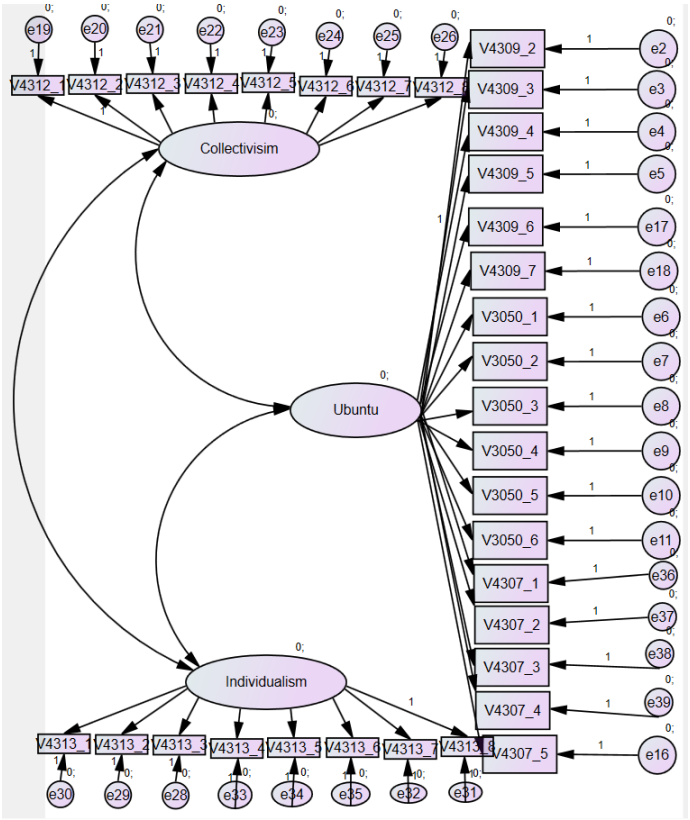

Figure 9: Fitted CFA Model for Discriminant Validity with Individual-Collectivism in AMOS
**Index of the code variable names is shown in Appendix 4*

Table 50: Discriminant validity assessment using AVE and MSV comparison

	AVE	MSV
Ubuntu	0.380	0.450
Collectivism	0.322	0.450
Individualism	0.257	0.195

Average Variance Extracted (AVE), Maximum Shared Variance (MSV)

Table 51: Discriminant validity assessment using factor correlation matrix with square root of AVE on the diagonal

	Ubuntu	Collectivism	Individualism
Ubuntu	**0.616**		
Collectivism	0.671***	**0.567**	
Individualism	0.242	0.442	**0.507**

Table 52: Discriminant validity assessment with Individual-Collectivism scale using HTMT Analysis

	Ubuntu	Collectivism	Individualism
Ubuntu			
Collectivism	0.660		
Individualism	0.259	0.527	

Table 53: Convergent and discriminant validity results interpretation

Test	Acceptable ranges	Results Interpretation
Discriminant Validity	AVE > MSV	Discriminant validity confirmed by HTMT test.
	Square root of AVE greater than inter-construct correlations	
	HTMT < 0.85	

It can also be concluded that individualism-collectivism scale is distinct from Ubuntu.

5.4.7 Nomological Validity

Nomological validity refers to the degree to which a construct behaves as it should within a system of related constructs called a nomological net (Wepener, 2014, p 97). The position of a construct should be evaluated in a nomological net when assessing the construct's nomological validity (Churchill, 1979; Hair et al., 2006, p 778). Nomological validity is an extension of predictive validity (Rossiter, 2002). Nomological validity is tested by specifying hypothetical linkages between Ubuntu and measures of other constructs. The researcher used two different constructs for testing nomological validity namely self-report altruism scale (Wilhelm & Bekkers, 2010) and charitable behaviour (Winterich & Zhang, 2014).

The researcher hypothesised that high levels of Ubuntu will result in charitable behaviour as well as self-report altruism in a nomological net. Charitable behaviour and self-report altruism scales were thus used to assess nomological validity.

5.4.7.1 Nomological Validity Assessment with Self-Report Altruism scale

Self-report altruism behaviour was used to demonstrate predictive validity of the measurement. The researcher took 10 items that measure self-report altruism as modified by Wilhelm & Bekkers (2010) based on the 20-item scale originally by Rushton, Chrisjohn & Fekken (1981) shown in table 54 and used this to assess nomological validity of the measurement instrument.

Table 54: Self-Report Altruism scale

In the past year; have you personally …		
	Yes	**No**
Donated money to a charity	1	0
Done volunteer work for a charity	1	0
Helped a stranger or someone you did not know who needed help	1	0
Returned change to a cashier after getting too much change	1	0
Lent money or things to other people	1	0
Looked after another person's plants, mail, or pets while they were away	1	0
Volunteered to help or take care of those who are in need	1	0
Given food or money to a homeless person	1	0
Spent time with a friend who was feeling lonely	1	0
Donated blood	1	0

The fitted SEM model is shown in figure 11.

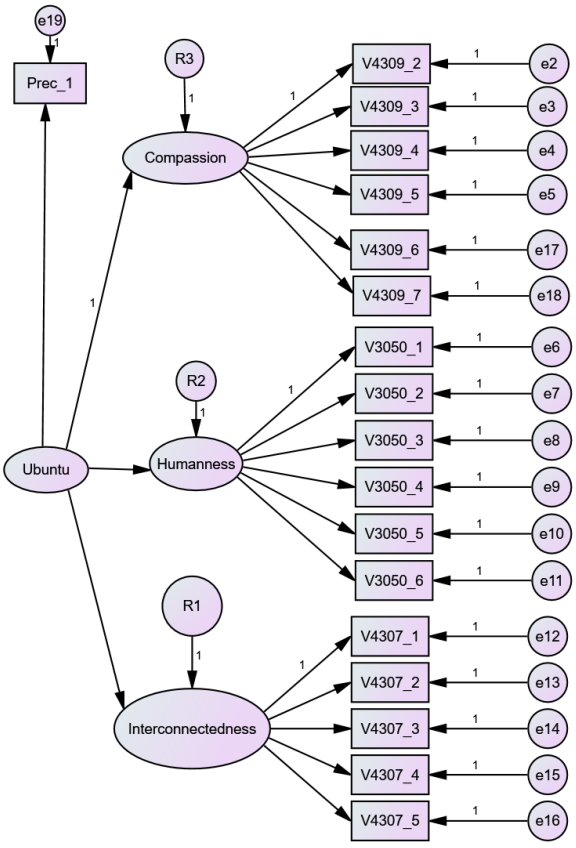

Figure 10: SEM Model for Predictive Validity of Self-Report Altruism scale in AMOS

Where Prec_1 is the Self-Report Altruism variable. The variable names are shown in Appendix 2.

Table 55 shows that there is a statistically strong relationship between the variables in the nomological net ($p < 0.001$). The Ubuntu scale is positively associated with altruism behaviour. These results show evidence of nomological validity of the scale.

Table 55: Nomological validity assessment with self-report altruism scale

			Estimate	S.E.	C.R.	P	Label
Prec_1	<--	Ubuntu	1.906	0.480	3.969	***	par_17

Table 56 shows the descriptive statistics for the self-report altruism scale. The self-report altruism score is a mean of 6.75.

Table 56: Descriptive statistics of self-report altruism scale

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Prec_1	300	1	10	6,750	1,729

5.4.7.2 Nomological Validity Assessment with Charitable Behaviour

Charitable behaviour was also used to demonstrate predictive validity of the measurement. Three items were taken by the researcher that measure charitable behaviour (Winterich & Zhang, 2014) shown in table 56 and used this to assess nomological validity of the measurement instrument. These three separate questions were included as part of Gallup's World Poll Initiative.

Table 57: Charitable Behaviour scale

In the past year; have you personally …		
	Yes	**No**
Donated money to a charity	1	0
Done volunteer work for a charity	1	0
Helped a stranger or someone you did not know who needed help	1	0

The fitted SEM model for assessing nomological validity with charitable behaviour is shown in figure 12.

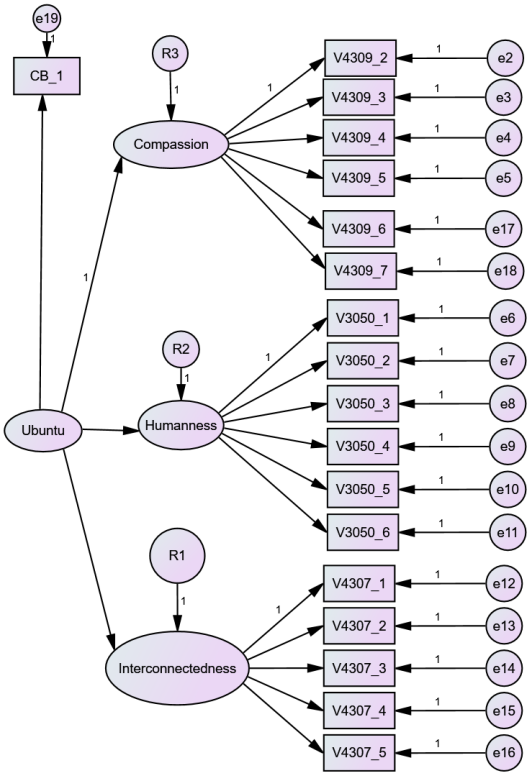

Figure 11: SEM Model for Predictive Validity of Charitable Behaviour Scale in AMOS

Where CB_1 is the Charitable behaviour variable. The variable names are shown in Appendix 2.

Table 58 shows that there is a statistically strong relationship between the variables in the nomological net (p = 0.009). The Ubuntu scale is positively associated with charitable behaviour. These results show evidence of nomological validity of the scale.

Table 58: Nomological validity assessment with charitable behaviour scale

	Estimate	S.E.	C.R.	P	Label
CB_1 <--- Ubuntu	.591	.225	2.628	.009	par_17

Table 59: Descriptive statistics of charitable behaviour scale

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CB_1	300	0	3	1.877	.859

5.4.8 Measurement Invariance testing

Measurement invariance was assessed to test whether the proposed measurement model is invariant across two sample groups (Online – wave two datum and Telephonic – wave three datum). If evidence of invariance across the two samples could be found, the results will imply that the measurement parameters of the scale have the same meaning in more than one group (Wepener, 2014).

The first step in the invariance assessment was to assess the configural invariance of the model in the Online and telephonic samples. Configural invariance evaluates the invariance of the factor structure of the model (Wepener, 2014). The test of a close fit ($p < 0.05$) was 0.981 suggesting that there is a close fit to the model. The results indicate sufficient evidence of configural invariance.

The second invariance assessment was the weak invariance (metric invariance). To assess metric invariance a model in which the factor loadings are constrained to be equal in both samples should show a close fit to the datum. The p-value to test for close fit was 0.988 thereby indicating sufficient evidence of metric invariance. The results of the scalar invariance test ($p < 0.05$) of the proposed instrument suggested that the intercepts of the items in the model in the two samples were not invariant ($p = 0.000$). Similarly, the invariance test for factor covariances and error variance suggested that the two samples were not invariant ($p = 0.000$). The p-value of close fit hypothesis for scalar and factor covariance however indicated that the models are close fit. The p value for the chi-square statistics however indicated that the two samples were not invariant.

Table 60: Measurement invariance assessment

Hierarchical level of invariance	CMIN	df	*χ2/df* ratio	RMSEA	*p*-value for close fit	CFI	ECVI	P (Chi-Square Difference test)	Decision on model invariance
Configural	443,202	232	1.910	0.043	0.981	0.956	1.311		Do not reject close fit hypothesis – Model invariance
Weak	465,132	246	1.891	0.042	0.988	0.954	1.298	0.080	Do not reject close fit hypothesis – Model invariance
Scalar	549,359	263	2.089	0.047	0.849	0.940	1.398	0.000	Do not reject close fit hypothesis - Not invariant
Factor covariance	636,055	269	2.365	0.052	0.250	0.924	1.547	0.000	Do not reject close fit hypothesis - Not invariant
Error variance	1049,544	286	3.670	0.073	0.000	0.841	2.301	0.000	Reject close fit hypothesis - Not invariant

The results from table 60 show that configural and weak/metric invariance can be confirmed for the two samples.

5.4.9 Final instrument

After three waves of datum collection with a series of steps to purify and refine the measure for each wave the final instrument developed for the study is shown in table 61. The model consists of three dimensions with 17 items after having removed, “You wish the best for other people” to improve the model fit of the CFA.

Table 61: Final Instrument

Dimension	Items	Factor loadings		
		Wave one	Wave two	Wave three
Humanness	You treat other people with dignity	0.692	0.839	.862
	You recognise other people	0.732	0.830	.841
	You treat other people the way that you want to be treated	0.717	0.818	.719
	You value other people	0.731	0.789	.724
	You believe in the humanity of other people	0.717	0.781	.777
	You respect other people	0.677	0.744	.789
Dimension	**Items**	**Factor loadings**		
		Wave one	**Wave two**	**Wave three**
Interconnectedness	Your life is interconnected with the lives of other people		0.802	.756
	You share possessions with other people	0.510	0.753	.772
	You like living together with other people	0.650	0.741	.713
	Your life is richer because you share it with other people		0.732	.780
	When you are connected to other people you feel a sense of harmony		0.730	.756
Compassion	You have a caring attitude towards other people	0.700	0.804	.710
	You are concerned about the well-being of other people	0.719	0.800	.691
	You are thoughtful of other people	0.726	0.775	.734
	You try to be a blessing to other people	0.733	0.738	.732
	You exhibit good will to other people	0.696	0.731	.785
	You are helpful to other people	0.744	0.718	.659

5.5 Summary and conclusion

Chapter five presented the empirical results of the study. A rigorous process of three wave datum collection was used to assess the validity and reliability of the measurement instrument. The chapter discusses how the datum was collected in the three waves as well as the purification and refinement of the measurement instrument. Wave one datum was used to reduce the datum using EFA. The fit indices for the wave two and wave three datum provided evidence of construct validity. The CFA and reliability tests for wave two and wave three datum are reported. Evidence of construct validity of the datum was explained in some detail for both wave two and three datum. The analyses performed to demonstrate nomological validity, reliability, goodness of fit and measurement invariance were explained for wave two and three datum. The resulting outcome was a three-dimension measure of Ubuntu. The three dimensions established are: Humanness, Interconnectedness and Compassion.

The next and final chapter will provide an interpretation of the empirical results. The theoretical implications and contributions of the study are also discussed with the limitations of the study.

6 Discussion, contributions and conclusions

6.1 Introduction

Chapter five presented the empirical results of the study. A series of extensive scale development procedures was conducted, and a three-dimension instrument with 17 items emerged. The resulting dimensions of Ubuntu are Humanness, Interconnectedness and Compassion. This final chapter of the study provides an overview of the study. Key research considerations as well as major results are discussed. The chapter highlights the theoretical implications of the study as well as the implications of the research for managerial practice. This closing chapter discusses previous research that has been conducted about measuring Ubuntu. A detailed explanation of the limitations of the study is also provided. Discussions on some of the directions for future research are reported and concluding remarks provided.

6.2 Overview of the study

Ubuntu is defined as an African philosophy reflecting the belief that a person's humanity is expressed in relationship to other people. The concept Ubuntu has faced challenges in terms of a clear definition. Several scholars have defined Ubuntu with different indicator values which have been obtained with no clear grounding rules. The indicator values across the various scholars are very different creating challenges in applying the concept. Lack of a clear definition of Ubuntu has resulted in difficulty in applying and use the concept to advance knowledge. The main objective of this research was to develop a psychometrically reliable and valid scale for measuring Ubuntu.

The term Ubuntu was first used in literature in 1846 (Gade, 2011). Ubuntu is illustrated by a Nguni proverb, "umuntu ngumuntu ngabantu" which translates as "A person is a person through other persons" (Kastern & Illa, 2005; Lutz, 2009; Mangaliso, 2001; Mbigi, 1997; Metz & Gaie, 2010; Poovan et al., 2006; Taylor, 2014).

To develop a psychometrically reliable and valid scale to measure Ubuntu generation of items involved the use of both deductive and inductive approaches to capture adequately the domain construct. The initial step of the scale development process was a literature review which yielded 82 indicator values of Ubuntu. A frequency analysis of all the indicator values of Ubuntu was conducted. The process involved determining how many articles mentioned each indicator value. This process allowed the researcher to understand which indicator values are most frequently mentioned to

represent Ubuntu. The list of the indicator values of Ubuntu identified was used to establish the actual items to measure using qualitative research. These indicator values of Ubuntu were used as the starting point to establish the dimensions and items of measuring Ubuntu.

After a comprehensive literature review and analysis of the indicator values of Ubuntu, qualitative research was conducted in the form of in-depth interviews and focus groups. Datum was generated using a semi-structured setting and discussions were facilitated by trained moderators for both the focus groups and in-depth interviews. Six out of the 82 indicator values obtained from literature were regarded as not part of Ubuntu by the participants in the focus groups and in-depth interviews resulting in 76 indicator values of Ubuntu. Participants were asked to q-sort the derived indicator values of Ubuntu into similar groups. From this process the researcher postulated a reflective second order latent construct with three first order observable dimensions namely: Humanness, Interconnectedness and Compassion.

Items were developed for each of the 76 indicator values of Ubuntu. Each item generated for each of the three dimensions was expressed by a statement which describes an aspect of the dimension which reflects the main construct of Ubuntu. The items were developed such that they were clear, unambiguous measures of the construct and cover the entire domain. The initial process yielded a total of 85 items to represent the three dimensions from the literature review, focus groups and in-depth interviews.

Once a draft instrument was established from the literature review, in-depth interviews and focus groups, a panel of experts was used to evaluate the dimensions and items in the first draft of the questionnaire. The panel was used to ensure face validity as well as refine the generated items. Experts reviewed the content validity and evaluated the items for clarity, conciseness, grammar, reading level, face validity and redundancy. The panel of experts included academics and senior research practitioners. Experts were selected based on experience with the subject Ubuntu or scale development. Each expert was provided with the definition and items of each dimension and requested to establish for each dimension the relevancy of each item for the construct, phrasing of the statement and if items sufficiently represent the construct. The experts were lastly asked to identify if any aspects of Ubuntu were missing from the identified dimensions and items. The input from all experts was combined and a final draft instrument was generated. Based on the feedback solicited from the panel of experts, the initial measures were revised with duplicate items removed, unclear statements rephrased and new items that reflected the construct better added. The final instrument comprised of three dimensions and 87 items.

A questionnaire was developed to collect datum from the target population. A five-point Likert scale was utilised for the study and respondents expressed the extent to which they agree with each statement. The questionnaire also included demographic questions such as race, income, age and gender to allow for comparison of the results in all three datum collection phases. Before datum collection, a pilot study was conducted to detect if there were any potential problems in how the questions were interpreted by the respondents, problems with understanding the instructions as well as the wording of the items. A total of twenty telephonic pilot interviews were conducted. This datum did not form part of the main survey datum. No changes were made after the pilot study.

The datum was collected using telephonic interviews for the first and third waves and online surveys for the second wave. The telephonic interviews were conducted using Plus 94 Research's call centre. Research consultants phoned potential respondents from a database and interviewed them using the questionnaire. A link to the online survey was distributed to different people by email for the second wave datum collection. The research was administered among the adult population (18 years and above) in South Africa through a database which was sourced by the researcher. The researcher sourced a list of the adult population database from an existing panel of respondents at Plus 94 Research which consists of about 64 000 potential respondents. The panel is generated by asking any respondents who participate in any study if they are willing to take part in future studies.

Three waves of datum collection and analysis were used to develop and purify the scale for Ubuntu. The first wave of datum collection was used to reduce the scale. A total of 500 telephonic interviews were achieved. Wave two datum was used to purify and refine the instrument and a total of 205 online interviews was achieved. Wave three datum was used to confirm and validate the final instrument.

6.3 Major findings

This thesis develops and validates a scale to measure Ubuntu using a mixed-methods, multiple study approach. First, a literature review identifies 82 indicator values of Ubuntu. Next, using focus groups, depth interviews, and q-sorting, three nascent components of Ubuntu emerge: humanness, interconnectedness, and compassion. While many scholars discuss Ubuntu as a unidimensional construct the initial qualitative research established Ubuntu as a multidimensional construct.

The main research findings for the first wave datum was a five-factor solution for the datum. Five dimensions emerged from the initial datum, measured by 30 items (compared with three factors and 87 items from the initial instrument). Both Humanness and Compassion dimensions were as initially

hypothesised but the Interconnectedness dimension split into three factors. Many scholars link Ubuntu to Humanness (Khoza, 2006; Murove, 2014; Shutte, 2001; Taylor, 2014) and the results indicate that Humanness is one of the dimensions of Ubuntu. Humanness and Compassion are part of the most mentioned indicator values of Ubuntu.

A three-dimension solution with 19 items emerged from the wave two datum analysis. The three dimensions, Humanness, Interconnectedness and Compassion were as initially hypothesised in wave one. Confirmatory factor analysis indicated that further purification and development was not necessary as convergent validity, discriminant validity and reliability were confirmed for the three-factor model for measuring Ubuntu. Across the three quantitative studies, the scale is purified to seventeen items which exhibit a three-factor structure that is psychometrically reliable and valid. The most mentioned indicator values of Ubuntu from literature are respect, caring as well as relationship with others and dignity which were categorised in q-sorting under Humanness (respect, relationship with others as well as dignity) and compassion (caring).

Discriminant validity was also assessed for the collectivism scale and a total of three tests were conducted one of the three tests confirmed discriminant validity with collectivism. The two tests which did not confirm discriminant validity the AVE-SV comparison method are thought to be a very conservative test of discriminant validity (Voorhees et al., 2016). The Ubuntu scale therefore can be concluded to have discriminant validity relative to a collectivism scale.

Nomological validity was also tested by specifying hypothetical linkages between Ubuntu and self-report altruism as well as charitable behaviour. These results showed evidence of nomological validity. The Ubuntu scale has discriminant validity and demonstrates predictive validity in terms of charitable and altruistic behaviours. The Ubuntu scale is positively associated with both altruism and charitable behaviour. Broodryk (2006) associates Ubuntu to charitableness. Furthermore, Muchiri, (2011) asserts that compassion makes people desire to be generous and be willing to make sacrifices in order to help others.

Measurement invariance was assessed to test whether the proposed measurement model is invariant across two sample groups (Online – wave two datum and Telephonic – wave three datum). The results indicated evidence of configural and metric invariance. From the results it can be concluded that the outcome of the research is a psychometrically valid reliable scale which has been developed using extensive scale development procedures. A three-dimension solution with 17 items and demonstrated evidence of construct validity (including unidimensionality, reliability, convergent

validity, discriminant validity and nomological validity), model fit and invariance of the Ubuntu instrument. The scale also is distinct from the collectivism scale.

6.4 Comparison of results to literature

The extensive scale development procedures resulted in a three-dimensional scale for measuring Ubuntu. These procedures included an assessment of the construct validity which included unidimensionality, convergent validity, discriminant validity and nomological validity. The instrument was also assessed for model fit and measurement invariance. The outcome of this study was a three-dimension scale with 17 items to measure Ubuntu whereas Ubuntu was previously conceptualised as a unidimensional construct, this research conceptualised a three-dimensional construct.

6.4.1 Humanness

The first dimension of humanness is defined as the belief that all people possess the innate characteristic of being human, which is to say being aware of self and of other people. This dimension is the primary one used by several scholars (Khoza, 2006; Murove, 2014; Shutte, 2001; Taylor, 2014) to define Ubuntu. Humanness is linked to the Nguni proverb that defines Ubuntu. Humanness is defined as "those features that are typically, fundamentally, or essentially human, representing those attributes that form the core of the concept "human", (Haslam, Loughnan, Yoshihisa & Bain, 2008). All theories of human rights use humanness as their starting point to determine the value ascribed to human beings (Broodryk, 2006).

The datum analysis indicates that Humanness accounts for more variance than any other factor. The strength of the Humanness dimension suggests that the dimension carries more weight than the other dimensions. This is also supported by the fact that many authors equate humanness to Ubuntu as shown in table 60 below. From the frequency analysis of the indicator values of Ubuntu it can also be noted that the indicator values under Humanness, Respect and Dignity are among the most mentioned indicator values of Ubuntu highlighting the strength of this dimension. Respect appears in 16 of the articles reviewed, while Dignity appears in 11 and Humanness in 9 articles. Respect and dignity are viewed as important values of ubuntu (Mangaliso, 2001). After colonialism, ubuntu was emphasised to restore human dignity as well as the values of humanness (Matolino & Kwindingwi, 2017). Buber, (1970) asserts that relating to the other person as a person of dignity is

by engaging with the person in an “I-Thou” encounter instead of “I-It” encounter. Table 62 shows some of the literature to support that Humanness is a dimension of Ubuntu.

Table 62: Literature on Humanness

Reference	Literature on Humanness
Broodryk (2002)	• Ubuntu is translated as African Humanness
Broodryk (2006)	• Ubuntu is humanness. • Humanness is the key basic value of Ubuntu. • All theories of human rights use humanness as their starting point to determine the value ascribed to human beings
Gade (2011)	• Ubuntu is described as humanness
Kastern & Illa (2005)	• Ubuntu is seen as humaneness • Ubuntu encapsulates humanistic view
Matolino & Kwindingwi (2013)	• Ubuntu philosophy is entrenched in the search for human dignity as well as identity. • After colonialism, ubuntu was emphasised to restore human dignity as well as the values of humanness
Mangaliso (2001)	• Ubuntu is “humaneness, a pervasive spirit of caring and community, harmony and hospitality, respect and responsiveness that individuals or groups display for another”. • Respect and dignity are important values of ubuntu.
Metz & Gaie (2010)	• Ubuntu is Humanness. • In a typical African ethic, the only way to develop one’s humanness is to relate to others in a positive way. • When one is lacking Ubuntu, literally they lack personhood or humanness
Metz (2007a)	• An action is right insofar as it respects a person’s dignity; an act is wrong to the extent that it degrades humanity”.
Mnyaka & Motlhabi (2009)	• Ubuntu is Humanism or Humanness.
West (2014)	• Ubuntu is understood as be-ing human (humanness) • A human, respectful and polite attitude towards others constitutes the core meaning of Ubuntu.

6.4.2 Interconnectedness

The second dimension of interconnectedness is defined as the belief that all people are bound together by virtue of their shared humanity. This dimension appears four times from the articles and books reviewed however the indicator values that were associated with interconnectedness are more frequently mentioned such as interdependence and collectivism. The underlying belief in African society is the fact that all human beings are interconnected and share a common and communal responsibility for each other (Metz & Gaie, 2010). Africans learn from an early age that they are interconnected with each other and that sharing and giving is the only way one can receive (Poovan et al., 2006).

Human beings live as part of a community with relationships and interdependence among each other (Lutz, 2009). African communities possess a communal and shared way of survival to overcome challenges they experience, and this happens through the bond which allows the sharing of knowledge and skills. According to Buber (1970) human beings have a sense of loving responsibility when they encounter the eternal, and everything is bounded by others. This also supports the other items for interconnectedness that are mostly to do with sharing and living together. The community sets aside their differences and works together because of personhood. Table 63 shows some of the literature to support that interconnectedness is a dimension of Ubuntu.

Table 63: Literature on Interconnectedness

Reference	Literature on Interconnectedness
Kastern & Illa (2005)	• Social effect on conversation is emphasized with primary given to establishing and reinforcing relationships. • Ubuntu is the collective solidarity in Africa • Ubuntu is the commitment and loyalty to social group • Ubuntu embraces a set of social behaviours like sharing, seeking consensus and interdependent helpfulness
Msila (2008)	• Interconnectedness among people is espoused by Ubuntu • Several African languages reflect humanness, inter-dependence among people. • Ubuntu fosters a culture of interconnectedness and interdependence
Msila (2015)	• Expectations are to see cohesive teamwork, interconnectedness, caring and being held by a collective vision in the workplace. • Ubuntu inspired workplace focusses on Interconnectedness among other areas
Nussbaum (2003)	• Interconnectedness in community is a key characteristic of African way of thinking. • The world should embrace a sense of interconnectedness as a global community to survive • Ubuntu speaks to our interconnectedness, our common humanity and the responsibility to each other that flows from our deeply felt connection. • “If we acknowledge the common good and our interconnectedness, surely, we can look to the wisdom of Ubuntu to inform our lives”?

6.4.3 Compassion

The third dimension of compassion is defined as the belief that other people should be treated with concern due to a common humanity. Compassion is the most frequently mentioned dimension as an indicator value of Ubuntu among the three dimensions. Compassion is mentioned in ten articles while caring is the second most mentioned indicator value of Ubuntu mentioned in twelve articles. One of the items retained in the final instrument is, “You have a caring attitude towards other people” which is in line with literature.

Poovan et al., (2006) asserts that compassion is about the care people have for each other as well as understanding each other. Furthermore, Broodryk (2006) identifies that caring is associated with helpfulness, empathy, sympathy, friendliness and charitableness. Compassion is related to empathy or the ability to share the feelings or suffering of another person (Broodryk, 2006). Compassion makes people desire to be generous and be willing to make sacrifices in order to help others (Muchiri, 2011). This is supported by the items retained in the final instrument which are to do with helpfulness, goodwill and concerned about the well-being of other people. Table 64 shows some of the literature to support that Compassion is a dimension of Ubuntu.

Table 64: Literature on Compassion

Reference	Literature on Compassion
Broodryk (2002)	• Compassion is a human quality of understanding the dilemmas of others and wanting to help them. • In the African milieu, compassion is the reaching out to others and practising humanism so that relationships and friendships can be formed.
Broodryk (2006)	• Compassion is a key value of ubuntu which is associated with love, spontaneity, forgiveness, cohesion and informality
Matolino & Kwindingwi (2013)	• Pillars that hold society together are the principles of ubuntu, such as caring, empathy, compassion, hospitality, honesty and equal respect for all among others
Mangaliso (2001)	• The main consideration with Ubuntu is having compassion for others, high levels of harmony and communality
Muchiri (2011)	• Compassion makes people desire to be generous and be willing to make sacrifices in order to help others
Nussbaum (2003)	• Ubuntu could include any actions that express an individual, organizational, corporate or governmental commitment to expressing compassion, caring, sharing and responsiveness to the community as a whole
Poovan et al, (2006)	• Compassion is about the care people have for each other as well as understanding each other.
Tutu (1999)	• Ubuntu emanates from belonging to a greater whole and enables people to be compassionate and to appreciate others without feeling threatened.
West (2014)	• The African philosophy of Ubuntu is typically characterised as a communitarian philosophy that emphasises virtues such as compassion, tolerance and harmony.

6.5 Implications of the study for theory

Advancement of knowledge and theory on the Ubuntu concepts suffer due to lack of a clear definition for the concept. Lack of a clear definition with vagueness and ambiguity of the concept is a major obstacle for advancement of theory and knowledge in this field. This study contributes towards the development of theory through conceptualisation of Ubuntu using a robust scale development method. Ubuntu is presented in literature as a unidimensional concept and the theoretical contribution of this research is the development of the dimensions of Ubuntu and showing that it is a multidimensional construct. Any further research on the concept of Ubuntu should now treat Ubuntu as a multidimensional construct.

Scholars have argued that Ubuntu has some similarities with Collectivism (Ncube, 2010; Poovan et al., 2006). This research has shown that Ubuntu scale has discriminant validity relative to collectivism scale. Subsequent work should therefore treat Ubuntu and collectivism as two different constructs. Poovan et al. (2006) views Collectivism as a backbone for Ubuntu way of life. West (2014) states that a society that maintains the values of Ubuntu would be expected to favour collectivism. According to Triandis' (1996) with the collectivism concept an individual's personal goals support the goals for the survival of the group. Collectivism is therefore a concept that occurs in a group. Ubuntu is a concept which is applicable even to strangers and people that one does not necessarily know (Mandela, 2006; Samkange & Samkange 1980).

6.6 Implications of the study for methodology

The rigorous scale development methodology followed by this study strengthens the results emanating from this research. A mixed method approach with a combination of qualitative and quantitative was used for this study which is a significant contribution as previous studies have mainly been qualitative research as well as some literature review with little quantitative research being conducted on this construct. This research will pave a way for further quantitative research to be conducted. The implication of the study is a final scale which is shortened with seventeen items. Brevity of the scale implies that researchers have a scale which is not very demanding or difficult to use making it easy to advance knowledge on the arguments made about the impact of the concept on organisational success.

Previous empirical studies were characterised by small sample sizes and did not follow robust scale development procedures. The current study utilised large sample sizes to replicate the factor

structure, reliability, and construct validity of the measure. Three waves of studies were conducted with different sample sizes. Furthermore, qualitative research in the form of focus groups and in-depth Interviews as well as literature review was used to generate items of the scale. Multifaced quantitative studies were conducted. EFA was also used to establish the dimensions of Ubuntu while CFA was used to confirm the model. The current study therefore followed a rigorous scale development process in which contemporary scale development was utilised with reflective measurement. Three studies were done to validate the scale. The use of convergent validity, discriminant validity, nomological validity in assessing construct validity and invariance testing in scale development has not been done in developing an Ubuntu scale. This has therefore added to the rigour of the study.

From the study measurement invariance was confirmed for configural and metric invariance. This is an indication that conducting the study using telephonic or online interviews will yield similar results. For scholars it therefore does not matter which methodology is administered as results will not be different. Methodologically practitioners will therefore have similar results which ever method they use online or telephonic. These results may also imply that measurement invariance can also be confirmed using personal interviews considering that online and telephone interviews confirmed measurement invariance.

6.7 Implications of the study for managerial practice

Various scholars have argued that Ubuntu is a crucial element in the workplace for enhancing productivity in the African context (Karsten & Illa, 2005; Mangaliso, 2001; Mbigi, 1997; Msila, 2015; Poovan et al., 2006). Msila (2015) posits that Ubuntu engenders team unity and solidarity among employees which enhances organisational performance and Mbigi (1997) argues that it helps to strengthen a culture of empowerment, teamwork and unity of purpose with the aim of achieving mutual benefits. Mangaliso (2001) urges organisations to link the reward systems to the performance of the team to ensure that individuals uphold the Ubuntu spirit in organisations. Msila (2015) further encourages leaders in organisations to cultivate Ubuntu in the workplace, arguing that the resultant solidarity and teamwork enhances good work ethics.

Proponents of ubuntu associate it with increases in production and organisational performance through better staff morale, improved working conditions, loyalty of employees to group goals, and enhanced competitive advantage (Mangaliso, 2001) as well as better team ethics and relationships which ultimately lead to elevated work commitment (Msila, 2015). Poovan et.al (2006) thus suggests that Ubuntu is key to driving organisational success.

Scholars have also pointed out several disadvantages of the Ubuntu philosophy in an organisational setting (Lutz, 2009; Msila (2015). Msila (2015) suggests that it encourages mediocrity and unproductivity by prioritising concern for people rather than organisational goals, by rendering objective assessment of performance less effective thus encouraging poor work ethics and reduced team effort. This in turn can lead to reduced staff morale among employees that are performing well with a negative impact on organisational performance. Ubuntu may encourage groupthink, where employees adopt an idea or suggestion with which they do not agree for the sake of group consensus and solidarity (Lutz, 2009) which can be detrimental to the success of the business.

The arguments on impact of Ubuntu in the workplace cannot be advanced in knowledge if there is no scale to measure Ubuntu. Considering the arguments of the role of Ubuntu on organisational success and failure, the scale can be utilised by managers and academic practitioners to measure the extent to which people have Ubuntu and further use the measure in organisational context and establish if the concept is good or bad for organisational success. In establishing the impact of Ubuntu on organisational success managers and academic practitioners will be able to formulate strategies that are in line with whether the concept is good or bad for the organisation's success.

The scale has predictive validity with charitable behaviour which has implications on market segmentation of consumers where Ubuntu is important. The implication of this research is that organisations such as Non-Profit Organisations can use the scale to target consumers that have Ubuntu, and this can also be further used in advertisement that are more appealing to consumers that have Ubuntu. Organisations such as red cross and churches can use this research for segmentation and targeting of consumers especially consumers who see Ubuntu as important.

6.8 Limitations

This study has made significant contribution to the body of knowledge with regards to the development of a scale for Ubuntu. It is important to note that in all empirical research there are limitations that should be considered when interpreting results and drawing of conclusions from the empirical findings. The study was conducted in South Africa and the sample was not representative of the South African population and therefore cannot be generalised to the South African population. Ubuntu is regarded as an African concept and the study was conducted only in South Africa hence these results cannot be generalised to the African population. No generalisations can therefore be made that the measurement instrument developed could be used in all contexts although the instrument was developed for all contexts but only tested in South Africa.

The research also had a very low response rate for the study. This can also impact on the validity of the research and hence causing limitations on the accuracy of the results of the study. Ubuntu is also a highly nuanced phenomenon and Ojiako et al., (2014) found from qualitative research that it may be premature to demand clearly articulated dimensions and clear expectations from Ubuntu concept. The study therefore concluded that it may be more beneficial to the notion of Ubuntu to have a clearer articulation of the guiding modality of Ubuntu (Ojiako et al., 2014) which therefore is a limitation to the study on the concept of Ubuntu.

The research also adopted a cross sectional approach which implies that datum was collected using a completely different sample for each of the waves of datum collection. When conducting longitudinal studies datum is gathered for the same subjects repeatedly over a period of time. With the cross-sectional datum collection, the research is not able to establish if the extent of Ubuntu changes over time while longitudinal study would have allowed the researcher to evaluate if there were any changes over time. The longitudinal study will help understand the evolving understanding of Ubuntu especially if the same demographic group is interviews as it gets older. Considering Ubuntu is a concept that can be influenced by the environment it would have been important to also have a longitudinal study to see the impact of migrating from rural to urban areas as well as understanding the impact of changing jobs or career to a better level.

Another limitation for the study is that the research did not examine organisational antecedents or consequences of Ubuntu. The research is therefore not able to establish whether Ubuntu is bad or good for organisations. The study is therefore not able to provide guidelines in whether there should be less or more Ubuntu in an organisation as well as what happens if there is less or more Ubuntu.

6.9 Directions for future research

It will be valuable to extend this research to a nationally representative of the South African population. The extent of Ubuntu will differ among various groups of people and it will be important to have a good representation of all population groups in the sample. Considering that Ubuntu is an African concept, future research should extend this study beyond South Africa to at least Southern Africa. This will also enable analysis to be conducted at country level and establish if the same underlying structure of Ubuntu exists for the different countries.

The research took a cross sectional approach to Ubuntu and future research could adopt a longitudinal design or panel design approach to the study. This will enable future research to establish if Ubuntu scores evolve over time. The research will establish if migrating from rural to

urban area will impact the extent of Ubuntu someone has or if a person changes their status on wealth if the levels of Ubuntu will change.

Considering that the research did not examine organisational antecedents or consequences of Ubuntu future research should therefore study the antecedents and consequences of Ubuntu in organisational context. Various scholars have argued that Ubuntu is a crucial element in the workplace for enhancing productivity in the African context. This further research will help organisations to derive strategies that will help cultivate Ubuntu among employees and thereby increasing productivity in the organisations. In organisations where Ubuntu can drive productivity, further research can be used in recruiting individuals that suite the organisation thereby improving the success of the organisation. The management of the extent to which employees have Ubuntu is therefore important for organisations to understand how Ubuntu can therefore be cultivated in the employees, when Ubuntu can be cultivated and under what circumstances the concept can be beneficial to organisational success hence future research will be useful to help answer these questions.

6.10 Concluding remarks

A lot of work has been done on the concept of Ubuntu which has mainly been conceptual and philosophical. Basically, no empirical work has been conducted to develop a scale for Ubuntu. To this researchers knowledge, this is the first study to conduct rigorous quantitative multifaced approach to measure Ubuntu assessing convergent validity, discriminant validity, nomological validity, model fit and measurement invariance with three large scale surveys. Ubuntu has been defined as unidimensional concept and this research is the first to established that Ubuntu is multidimensional with three dimensions namely Humanness, Interconnectedness and Compassion. This research is also the first to examine through empirical research that Ubuntu is distinct from Collectivism. The researcher calls on scholars to start using the scale to make empirical support on the antecedents or consequences of Ubuntu in organisational context.

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7 Appendices

Appendix 1: Figure 7 Variable names

Code	Variable name
B3_SQ008	You exhibit good will to other people
B3_SQ004	You wish the best for other people
B3_SQ005	You are helpful to other people
B3_SQ007	You try to be a blessing to other people
B3_SQ012	You feel sorry for people who are suffering
B3_SQ010	You are thoughtful of other people
B3_SQ006	You are concerned about the well-being of other
B3_SQ011	You have a caring attitude towards other people
B2_SQ011	When you are connected to other people you feel a sense of harmony
B2_SQ010	Your life is richer because you share it with other people
B2_SQ006	You like living together with other people
B2_SQ007	You share possessions with other people
B2_SQ008	Your life is interconnected with the lives of other people
B1_SQ001	You respect other people
B1_SQ006	You believe in the humanity of other people
B1_SQ005	You value other people
B1_SQ004	You treat other people the way that you want to be treated
B1_SQ003	You recognise other people
B1_SQ002	You treat other people with dignity

Appendix 2: Figure 8, 12, and 13 Variable names

Code	Variable Name
V4309_2	You are helpful to other people
V4309_3	You are concerned about the well-being of other people
V4309_4	You try to be a blessing to other people
V4309_5	You exhibit good will to other people
V4309_6	You are thoughtful of other people
V4309_7	You have a caring attitude towards other people
V3050_1	You respect other people
V3050_2	You treat other people with dignity
V3050_3	You recognise other people
V3050_4	You treat other people the way that you want to be treated
V3050_5	You value other people
V3050_6	You believe in the humanity of other people
V4307_1	Your life is interdependent with the lives of other people
V4307_2	You like living together with other people
V4307_3	You share possessions with other people
V4307_4	Your life is richer because you share it with other people
V4307_5	When you are connected to other people you feel a sense of harmony

Appendix 3: Figure 9 Variable names

Code	Variable Name
V4309_2	You are helpful to other people
V4309_3	You are concerned about the well-being of other people
V4309_4	You try to be a blessing to other people
V4309_5	You exhibit good will to other people
V4309_6	You are thoughtful of other people
V4309_7	You have a caring attitude towards other people
V3050_1	You respect other people
V3050_2	You treat other people with dignity
V3050_3	You recognise other people
V3050_4	You treat other people the way that you want to be treated
V3050_5	You value other people
V3050_6	You believe in the humanity of other people
V4307_1	Your life is interdependent with the lives of other people
V4307_2	You like living together with other people
V4307_3	You share possessions with other people
V4307_4	Your life is richer because you share it with other people
V4307_5	When you are connected to other people you feel a sense of harmony
V4312_1	If a co-worker gets a prize, you would feel proud.
V4312_2	The well-being of your co-workers is important to you
V4312_3	To you, pleasure is spending time with others
V4312_4	You feel good when you cooperate with others
V4312_5	Parents and children must stay together as much as possible
V4312_6	It is your duty to take care of your family even if you have to sacrifice what you want
V4312_7	Family members should stick together, no-matter what sacrifices are required
V4312_8	It is important to you that you respect the decisions made by your groups

Appendix 4: Figure 10 Variable names

Code	Variable Name
V4309_2	You are helpful to other people
V4309_3	You are concerned about the well-being of other people
V4309_4	You try to be a blessing to other people
V4309_5	You exhibit good will to other people
V4309_6	You are thoughtful of other people
V4309_7	You have a caring attitude towards other people
V3050_1	You respect other people
V3050_2	You treat other people with dignity
V3050_3	You recognise other people
V3050_4	You treat other people the way that you want to be treated
V3050_5	You value other people
V3050_6	You believe in the humanity of other people
V4307_1	Your life is interdependent with the lives of other people
V4307_2	You like living together with other people
V4307_3	You share possessions with other people
V4307_4	Your life is richer because you share it with other people
V4307_5	When you are connected to other people you feel a sense of harmony
V4312_1	If a co-worker gets a prize, you would feel proud.
V4312_2	The well-being of your co-workers is important to you
V4312_3	To you, pleasure is spending time with others
V4312_4	You feel good when you cooperate with others
V4312_5	Parents and children must stay together as much as possible
V4312_6	It is your duty to take care of your family even if you have to sacrifice what you want
V4312_7	Family members should stick together, no-matter what sacrifices are required
V4312_8	It is important to you that you respect the decisions made by your groups
V4313_1	You would rather depend on yourself than others
V4313_2	You rely on yourself most of the time; you rarely rely on others
V4313_3	You often do your own thing
V4313_4	Your personal identity, independent of others, is very important to you
V4313_5	It is important that you do your job better than others
V4313_6	Winning is everything
V4313_7	Competition is the law of nature
V4313_8	When another person does better than you do, you get tense

Appendix 5: Wave one Instrument

INTRODUCTION		
Good day, my name is …. I work for Plus 94 research an independent market research company. We are conducting research on behalf of a PhD student at Gordon Institute of Business Science (GIBS). The purpose of the research is to learn more about how people live and interact with other people. By completing this study, you will help me understand these relationships better. It will take approximately 30 minutes of your time to complete the study. Please note that everything you say will be kept absolutely confidential and will only be used for research and analysis. If you have any questions or comments, please contact Itayi at itayi@plus94.co.za . Respondent Name…….. Telephone Number (Home)…….. (Work)…… Email……. Mobile Phone Number…….		
Q1 Would you be interested in taking part in this interview?		
Yes	1	**CONTINUE**
No	2	**THANK & CLOSE**
Q2 For statistical purposes may I please confirm your gender?		
Male	1	**CONTINUE**
Female	2	
Q3 For statistical purposes may I please confirm your ethnic group?		
White	1	**CONTINUE**
African	2	
Asian/Indian	3	
Coloured	4	
Other	5	
Q4 Which of the following age groups do you fall in? READ OUT. SMO		
Under 18 years	1	**CLOSE**
18 – 24 years	2	**CONTINUE**
25 – 34 years	3	
35 – 49 years	4	
50 years and above	5	
Q5 What language would you prefer for this Interview? DO NOT READ OUT. SMO.		
English	1	**CONTINUE**
Afrikaans	2	**CLOSE INTERVIEW**
IsiZulu	3	
IsiXhosa	4	
Setswana	5	
Sesotho	6	
IsiNdebele	7	
Sepedi	8	
Siswati	9	
TshiVenda	10	
Tsonga	11	
Other (specify)……..		

SECTION B: UBUNTU SCALE

B1

To what extent do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You accept other people regardless of their circumstances or status	1	2	3	4	5
You consider other people to be your brothers and sisters	1	2	3	4	5
You see everyone as equal	1	2	3	4	5
You treat everyone the same	1	2	3	4	5
You believe that everyone has the same rights	1	2	3	4	5
You recognise other people	1	2	3	4	5
You value other people	1	2	3	4	5
You tolerate other people regardless of their morals	1	2	3	4	5
You do not discriminate against other groups of people	1	2	3	4	5
We are not separate because of our differences	1	2	3	4	5
You promote the well-being of other people	1	2	3	4	5
You identify with other people	1	2	3	4	5
You believe people are people because of their identity	1	2	3	4	5
You believe in the humanity of people	1	2	3	4	5
You believe in the value of other people	1	2	3	4	5
You put the desires of other people first	1	2	3	4	5
You treat other people the way that you want to be treated	1	2	3	4	5
You treasure human beings ahead of anything else	1	2	3	4	5
You treat other people with dignity	1	2	3	4	5
You respect other people	1	2	3	4	5

B2

Next, I am going to read out some more statements. To what extent do you agree that they describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You work well with other people	1	2	3	4	5
You are committed to other people	1	2	3	4	5
You like living together with other people	1	2	3	4	5
You share responsibilities with other people	1	2	3	4	5
You share possessions with other people	1	2	3	4	5
You live in community with other people	1	2	3	4	5
You enjoy being in community with other people	1	2	3	4	5
You feel connected to other people	1	2	3	4	5
You cooperate with other people	1	2	3	4	5
You feel bound to other people	1	2	3	4	5
Your life is interdependent with the lives of other people	1	2	3	4	5
You like having good relationships with other people	1	2	3	4	5

You like sharing what you have with other people	1	2	3	4	5
You celebrate other people's success	1	2	3	4	5
You want other people to share your success	1	2	3	4	5
You feel that other people's loss is your loss	1	2	3	4	5
Your loss is shared by other people	1	2	3	4	5
You can interact with people at every level	1	2	3	4	5
You are sensitive to other people's feelings	1	2	3	4	5
You enjoy working as part of a team with other people	1	2	3	4	5
You are one with other people	1	2	3	4	5
You are willing to sacrifice for the benefit of other people	1	2	3	4	5
It is important for you to try and have consensus in the community	1	2	3	4	5
You lead a peaceful coexistence with other people	1	2	3	4	5
Other people can rely on you for their survival	1	2	3	4	5
You communicate well with other people	1	2	3	4	5
As long as it hurts no one else, people should have the freedom to make their own choices in life	1	2	3	4	5
People should have the right to express themselves	1	2	3	4	5
People should be free to participate as they see best	1	2	3	4	5
It is important for people in the community to interact with each other	1	2	3	4	5
It is important to be able to express oneself	1	2	3	4	5

B3

Now I am going to read out a final set of statements. To what extend do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You are generous to other people	1	2	3	4	5
You enjoy doing good deeds for others for no gain	1	2	3	4	5
You exhibit good will to other people	1	2	3	4	5
You have a caring attitude towards other people	1	2	3	4	5
You are concerned about the well-being of other people	1	2	3	4	5
You would rather suffer yourself than to see someone else suffering	1	2	3	4	5
You offer support to those in need	1	2	3	4	5
You share the joy of other people even if you do not know them	1	2	3	4	5
You are considerate of other people's circumstances	1	2	3	4	5
You get upset when you see someone being hurt	1	2	3	4	5
You feel sorry for people who do not have the things that you have	1	2	3	4	5
You are friendly to other people	1	2	3	4	5

You are helpful to other people	1	2	3	4	5
You are hospitable to other people	1	2	3	4	5
You are kind to other people	1	2	3	4	5
You love other people	1	2	3	4	5
You feel sorry for people who are suffering	1	2	3	4	5
You are thoughtful of other people	1	2	3	4	5
You try to understand other people's circumstances	1	2	3	4	5
You try to be a blessing to other people	1	2	3	4	5
You wish the best for other people	1	2	3	4	5
You forgive others when they do wrong	1	2	3	4	5
You like being in harmony with other people	1	2	3	4	5
You are honest with other people	1	2	3	4	5
You trust other people	1	2	3	4	5
Other people can trust you	1	2	3	4	5
You are a person of integrity	1	2	3	4	5
You easily acknowledge your mistakes	1	2	3	4	5
You are open to other people's ideas	1	2	3	4	5
It is hard for you to accept other people's praise	1	2	3	4	5
You place the interests of others above your own interests	1	2	3	4	5
You deal with other people in a moral manner	1	2	3	4	5
You treat other people in a just way	1	2	3	4	5
You are patient when dealing with other people	1	2	3	4	5
You are polite to other people	1	2	3	4	5
You consider yourself to be a person of good character	1	2	3	4	5

SECTION C: DEMOGRAPHICS

C1

What is your country of residence?

.....

C2

What is your nationality?

.....

C3

What is your highest level of education?

No schooling	1	**CONTINUE**
Some primary schooling	2	
Primary school completed	3	
Some high schooling	4	
High school completed	5	
Some college/technikon education	6	
College/technikon education completed	7	
Some university education	8	
Undergraduate university education completed	9	
Postgraduate university education completed	10	
Other post-matric qualifications	11	

C4		
Which of the following best describes your working status?		
Scholar	1	**CONTINUE**
Student (Part-time)	2	
Student (Full-time)	3	
Employed full-time	4	
Employed part-time	5	
Self employed	6	
Unemployed	7	
Housewife/Househusband not working outside the home	8	
Retired/Pensioner	9	
C5		
Which of the following best describes your Marital Status?		
Married	1	**CONTINUE**
Single	2	
Co-habitating	3	
Separated	4	
Divorced	5	
Widow/widower	6	
C6		
What is your gross monthly personal income before deductions?		
Up to R8000	1	**CONTINUE**
R8001 – R15000	2	
R15001 – R25000	3	
R25001 – R42000	4	
R42001 – R60000	5	
R60001+	6	
THANK YOU FOR TAKING TIME TO TAKE PART IN THE SURVEY.		

Appendix 6: Wave two Instrument

Good Day, I am conducting research as part of my PhD at Gordon Institute of Business Science (GIBS). The purpose of the research is to learn more about how people live and interact with other people. By completing this study, you will help me understand these relationships better. It will take approximately 10 minutes of your time to complete the study. Please note that everything you say will be kept absolutely confidential and will only be used for research and analysis. If you have any questions or comments, please contact Itayi at itayi@plus94.co.za .

Q1

Would you be interested in taking part in this interview?

Yes	1	**CONTINUE**
No	2	**THANK & CLOSE**

Q2

For statistical purposes may I please confirm your gender?

Male	1	**CONTINUE**
Female	2	

Q3

For statistical purposes may I please confirm your ethnic group?

White	1	**CONTINUE**
African	2	
Asian/Indian	3	
Coloured	4	
Other	5	

Q4

Which of the following age groups do you fall in? READ OUT. SMO

Under 18 years	1	**CLOSE**
18 – 24 years	2	**CONTINUE**
25 – 34 years	3	
35 – 49 years	4	
50 years and above	5	

Q5

What language would you prefer for this Interview? DO NOT READ OUT. SMO.

English	1	**CONTINUE**
Afrikaans	2	**CLOSE INTERVIEW**
IsiZulu	3	
IsiXhosa	4	
Setswana	5	
Sesotho	6	
IsiNdebele	7	
Sepedi	8	
Siswati	9	
TshiVenda	10	
Tsonga	11	
Other (specify)……..		

SECTION B: UBUNTU SCALE

B1

First, the following statements are about how you might view other people. To what extent do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You respect other people	1	2	3	4	5
You treat other people with dignity	1	2	3	4	5

You recognise other people	1	2	3	4	5
You treat other people the way that you want to be treated	1	2	3	4	5
You value other people	1	2	3	4	5
You believe in the humanity of other people	1	2	3	4	5
You believe in the value of other people	1	2	3	4	5
You identify with other people	1	2	3	4	5
You believe that everyone has the same rights	1	2	3	4	5
You see everyone as equal	1	2	3	4	5
We are not separate because of our differences	1	2	3	4	5

B2

Next, the following statements are about what you might have in common with other people. To what extent do you agree that they describe you on a seven-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You enjoy being in community with other people	1	2	3	4	5
You live in community with other people	1	2	3	4	5
You feel connected to other people	1	2	3	4	5
Your life is interdependent with the lives of other people	1	2	3	4	5
You feel bound to other people	1	2	3	4	5
You like living together with other people	1	2	3	4	5
You share possessions with other people	1	2	3	4	5
Your life is interconnected with the lives of other people	1	2	3	4	5
You share a common purpose with other people	1	2	3	4	5
Your life is richer because you share it with other people	1	2	3	4	5
When you are connected to other people you feel a sense of harmony	1	2	3	4	5

B3

Finally, the following statements are about how you might behave towards other people. To what extend do you agree that the following statements describe you on a seven-point scale where 1 is strongly disagree and 5 is strongly agree.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
You are kind to other people	1	2	3	4	5
You are hospitable to other people	1	2	3	4	5
You love other people	1	2	3	4	5
You wish the best for other people	1	2	3	4	5
You are helpful to other people	1	2	3	4	5
You are concerned about the well-being of other	1	2	3	4	5
You try to be a blessing to other people	1	2	3	4	5
You exhibit good will to other people	1	2	3	4	5
You are friendly to other people	1	2	3	4	5
You are thoughtful of other people	1	2	3	4	5
You have a caring attitude towards other people	1	2	3	4	5
You feel sorry for people who are suffering	1	2	3	4	5

SECTION C: DEMOGRAPHICS

C1

What is your country of residence?

……

C2

What is your nationality?

……

C3		
What is your highest level of education?		
No schooling	1	**CONTINUE**
Some primary schooling	2	
Primary school completed	3	
Some high schooling	4	
High school completed	5	
Some college/technikon education	6	
College/technikon education completed	7	
Some university education	8	
Undergraduate university education completed	9	
Postgraduate university education completed	10	
Other post-matric qualifications	11	
C4		
Which of the following best describes your working status?		
Scholar	1	**CONTINUE**
Student (Part-time)	2	
Student (Full-time)	3	
Employed full-time	4	
Employed part-time	5	
Self employed	6	
Unemployed	7	
Housewife/Househusband not working outside the home	8	
Retired/Pensioner	9	
C5		
Which of the following best describes your Marital Status?		
Married	1	**CONTINUE**
Single	2	
Co-habitating	3	
Separated	4	
Divorced	5	
Widow/widower	6	
C6		
What is your gross monthly personal income before deductions?		
Up to R8000	1	**CONTINUE**
R8001 – R15000	2	
R15001 – R25000	3	
R25001 – R42000	4	
R42001 – R60000	5	
R60001+	6	
THANK YOU FOR TAKING TIME TO TAKE PART IN THE SURVEY.		

Appendix 7: Wave three Instrument

INTRODUCTION		
Good day, my name is …. I work for Plus 94 research an independent market research company. We are conducting research on behalf of a PhD student at Gordon Institute of Business Science (GIBS). The purpose of the research is to learn more about how people live and interact with other people. By completing this study, you will help me understand these relationships better. It will take approximately 20 minutes of your time to complete the study. Please note that everything you say will be kept absolutely confidential and will only be used for research and analysis. If you have any questions or comments, please contact Itayi at itayi@plus94.co.za . Respondent Name…….. Telephone Number (Home)……... (Work)…… Email……. Mobile Phone Number……..		
Q1 Would you be interested in taking part in this interview?		
Yes	1	**CONTINUE**
No	2	**THANK & CLOSE**
Q2 For statistical purposes may I please confirm your gender?		
Male	1	**CHECK QUOTA**
Female	2	
Q3 For statistical purposes may I please confirm your ethnic group?		
White	1	**CONTINUE**
African	2	
Asian/Indian	3	
Coloured	4	
Other	5	
Q4 Which of the following age groups do you fall in? READ OUT. SMO		
Under 18 years	1	**CLOSE**
18 – 24 years	2	**CONTINUE**
25 – 34 years	3	
35 – 49 years	4	
50 years and above	5	
Q5 What language would you prefer for this Interview? DO NOT READ OUT. SMO.		
English	1	**CONTINUE**
Afrikaans	2	**CLOSE INTERVIEW**
IsiZulu	3	
IsiXhosa	4	
Setswana	5	
Sesotho	6	
IsiNdebele	7	
Sepedi	8	
Siswati	9	
TshiVenda	10	
Tsonga	11	
Other (specify)……..		

SECTION B: UBUNTU SCALE					
B1					
First, I am going to read out some statements about how you might view other people. To what extent do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.					
You respect other people	1	2	3	4	5
You treat other people with dignity	1	2	3	4	5
You recognise other people	1	2	3	4	5
You treat other people the way that you want to be treated	1	2	3	4	5
You value other people	1	2	3	4	5
You believe in the humanity of other people	1	2	3	4	5
B2					
Next, I am going to read out some statements about what you might have in common with other people. To what extent do you agree that they describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.					
Your life is interdependent with the lives of other people	1	2	3	4	5
You like living together with other people	1	2	3	4	5
You share possessions with other people	1	2	3	4	5
Your life is richer because you share it with other people	1	2	3	4	5
When you are connected to other people you feel a sense of harmony	1	2	3	4	5
B3					
Now I am going to read out some statements about how you might behave towards other people. To what extend do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.					
You wish the best for other people	1	2	3	4	5
You are helpful to other people	1	2	3	4	5
You are concerned about the well-being of other people	1	2	3	4	5
You try to be a blessing to other people	1	2	3	4	5
You exhibit good will to other people	1	2	3	4	5
You are thoughtful of other people	1	2	3	4	5
You have a caring attitude towards other people	1	2	3	4	5
You feel sorry for people who are suffering	1	2	3	4	5

SECTION C: DEMOGRAPHICS		
"To help us understand your answers a bit better, I'd like to ask you a few more questions about your background"		
C1		
What is your country of residence?		
……		
C2		
What is your nationality?		
……		
C3		
What is your highest level of education?		
No schooling	1	**CONTINUE**
Some primary schooling	2	
Primary school completed	3	
Some high schooling	4	
High school completed	5	
Some college/technikon education	6	
College/technikon education completed	7	
Some university education	8	
Undergraduate university education completed	9	
Postgraduate university education completed	10	
Other post-matric qualifications	11	
C4		
Which of the following best describes your working status?		
Scholar	1	**CONTINUE**
Student (Part-time)	2	

Student (Full-time)	3	
Employed full-time	4	
Employed part-time	5	
Self employed	6	
Unemployed	7	
Housewife/Househusband not working outside the home	8	
Retired/Pensioner	9	

C5

Which of the following best describes your Marital Status?

Married	1	**CONTINUE**
Single	2	
Co-habitating	3	
Separated	4	
Divorced	5	
Widow/widower	6	

C6

What is your gross monthly personal income before deductions?

Up to R8000	1	**CONTINUE**
R8001 – R15000	2	
R15001 – R25000	3	
R25001 – R42000	4	
R42001 – R60000	5	
R60001+	6	

OUTCOME VARIABLES

Now I would like to ask you some questions about things that you personally might have done in the past year.
For each question, please tell me if you personally have done this in the past year.

D1

In the past year; have you personally …

	Yes	**No**
Donated money to a charity	1	2
Done volunteer work for a charity	1	2
Helped a stranger or someone you did not know who needed help	1	2
Returned change to a cashier after getting too much change	1	2
Lent money or things to other people	1	2
Looked after another person's plants, mail, or pets while they were away	1	2
Volunteered to help or take care of those who are in need	1	2
Given food or money to a homeless person	1	2
Spent time with a friend who was feeling lonely	1	2
Donated blood	1	2

COLLECTIVISM SCALE

D2

Finally, I am going to read out some statements about how you might relate with other people. To what extent do you agree that the following statements describe you on a five-point scale where 1 is strongly disagree and 5 is strongly agree.

If a co-worker gets a prize, you would feel proud.	1	2	3	4	5

The well-being of your co-workers is important to you	1	2	3	4	5
To you, pleasure is spending time with others	1	2	3	4	5
You feel good when you cooperate with others	1	2	3	4	5
Parents and children must stay together as much as possible	1	2	3	4	5
It is your duty to take care of your family even if you have to sacrifice what you want	1	2	3	4	5
Family members should stick together, no-matter what sacrifices are required	1	2	3	4	5
It is important to you that you respect the decisions made by your groups	1	2	3	4	5
D3					
You would rather depend on yourself than others	1	2	3	4	5
You rely on yourself most of the time; you rarely rely on others	1	2	3	4	5
You often do your own thing	1	2	3	4	5
Your personal identity, independent of others, is very important to you	1	2	3	4	5
It is important that you do your job better than others	1	2	3	4	5
Winning is everything	1	2	3	4	5
Competition is the law of nature	1	2	3	4	5
When another person does better than you do, you get tense	1	2	3	4	5

THANK YOU FOR TAKING TIME TO TAKE PART IN THE SURVEY.

Appendix 8: Demographic Information for Wave 1 participants

Q3. For statistical purposes may I please confirm your ethnic group?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	75	15.0	15.0	15.0
	African	354	70.8	70.8	85.8
	Asian/Indian	37	7.4	7.4	93.2
	Coloured	31	6.2	6.2	99.4
	Other	3	.6	.6	100.0
	Total	500	100.0	100.0	

Q4. Which of the following age groups do you fall in? READ OUT. SINGLE MENTION ONLY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 24 years	2	.4	.4	.4
	25 - 34 years	77	15.4	15.4	15.8
	35 - 49 years	206	41.2	41.2	57.0
	50 years and above	215	43.0	43.0	100.0
	Total	500	100.0	100.0	

C6. What is your gross monthly personal income before deductions? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up to R8000	82	16.4	16.4	16.4
	R8001 - R15000	34	6.8	6.8	23.2
	R15001 - R25000	82	16.4	16.4	39.6
	R25001 - R42000	144	28.8	28.8	68.4
	R42001 - R60000	81	16.2	16.2	84.6
	R60001+	72	14.4	14.4	99.0
	Refusal DO NOT READ OUT	5	1.0	1.0	100.0
	Total	500	100.0	100.0	

Q2. RECORD GENDER:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	322	64.4	64.4	64.4
	Female	178	35.6	35.6	100.0
	Total	500	100.0	100.0	

C3. What is your highest level of education? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some primary schooling	1	.2	.2	.2
	Some high schooling	21	4.2	4.2	4.4
	High school completed	56	11.2	11.2	15.6
	Some college/technikon education	34	6.8	6.8	22.4
	College/technikon education completed	79	15.8	15.8	38.2
	Some university education	47	9.4	9.4	47.6
	Undergraduate university education completed	70	14.0	14.0	61.6
	Postgraduate university education completed	174	34.8	34.8	96.4
	Other post-matric qualifications	18	3.6	3.6	100.0
	Total	500	100.0	100.0	

C4. Which of the following best describes your working status? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Scholar	5	1.0	1.0	1.0
	Student (Part-time)	4	.8	.8	1.8
	Student (Full-time)	3	.6	.6	2.4
	Employed full-time	298	59.6	59.6	62.0
	Employed part-time	28	5.6	5.6	67.6
	Self employed	65	13.0	13.0	80.6
	Unemployed	35	7.0	7.0	87.6
	Housewife/Househusband not working outside the home	2	.4	.4	88.0
	Retired/Pensioner	60	12.0	12.0	100.0
	Total	500	100.0	100.0	

C5. Which of the following best describes your Marital Status? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	305	61.0	61.0	61.0
	Single	99	19.8	19.8	80.8
	Co-habitating	24	4.8	4.8	85.6
	Separated	9	1.8	1.8	87.4
	Divorced	37	7.4	7.4	94.8
	Widow/widower	26	5.2	5.2	100.0
	Total	500	100.0	100.0	

Appendix 9: Demographic Information for Wave 2 participants

For statistical purposes may I please confirm your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	76	37.1	37.1	37.1
	Female	129	62.9	62.9	100.0
	Total	205	100.0	100.0	

For statistical purposes may I please confirm your ethnic group?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	28	13.7	13.7	13.7
	African	158	77.1	77.1	90.7
	Asian/Indian	12	5.9	5.9	96.6
	Coloured	7	3.4	3.4	100.0
	Total	205	100.0	100.0	

Which of the following age groups do you fall in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 – 24 years	34	16.6	16.6	16.6
	25 – 34 years	89	43.4	43.4	60.0
	35 – 49 years	61	29.8	29.8	89.8
	50 years and above	21	10.2	10.2	100.0
	Total	205	100.0	100.0	

What is your highest level of education?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No schooling	1	.5	.5	.5
	Some high schooling	2	1.0	1.0	1.5
	High school completed	30	14.6	14.6	16.1
	Some college/technikon education	34	16.6	16.6	32.7
	College/technikon education completed	31	15.1	15.1	47.8
	Some university education	15	7.3	7.3	55.1
	Undergraduate university education completed	34	16.6	16.6	71.7
	Postgraduate university education completed	55	26.8	26.8	98.5
	Other post-matric qualifications	3	1.5	1.5	100.0
	Total	205	100.0	100.0	

Which of the following best describes your working status?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Scholar	1	.5	.5	.5
	Student (Part-time)	8	3.9	3.9	4.4
	Student (Full-time)	6	2.9	2.9	7.3
	Employed full-time	123	60.0	60.0	67.3
	Employed part-time	30	14.6	14.6	82.0
	Self employed	10	4.9	4.9	86.8
	Unemployed	24	11.7	11.7	98.5
	Housewife/Househusband not working outside the home	1	.5	.5	99.0
	Retired/Pensioner	2	1.0	1.0	100.0
	Total	205	100.0	100.0	

Which of the following best describes your Marital Status?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	86	42.0	42.0	42.0
	Single	100	48.8	48.8	90.7
	Co-habitating	8	3.9	3.9	94.6
	Separated	1	.5	.5	95.1
	Divorced	9	4.4	4.4	99.5
	Widow/widower	1	.5	.5	100.0
	Total	205	100.0	100.0	

What is your gross monthly personal income before deductions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up to R8000	67	32.7	32.7	32.7
	R8001 – R15000	35	17.1	17.1	49.8
	R15001 – R25000	34	16.6	16.6	66.3
	R25001 – R42000	33	16.1	16.1	82.4
	R42001 – R60000	19	9.3	9.3	91.7
	R60001+	17	8.3	8.3	100.0
	Total	205	100.0	100.0	

Appendix 10: Demographic Information for Wave 3 participants

Q2. RECORD GENDER:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	150	50.0	50.0	50.0
	Female	150	50.0	50.0	100.0
	Total	300	100.0	100.0	

Q3. For statistical purposes may I please confirm your ethnic group?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	36	12.0	12.0	12.0
	African	223	74.3	74.3	86.3
	Asian/Indian	18	6.0	6.0	92.3
	Coloured	21	7.0	7.0	99.3
	Other	2	.7	.7	100.0
	Total	300	100.0	100.0	

Q4. Which of the following age groups do you fall in? READ OUT. SINGLE MENTION ONLY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 24 years	1	.3	.3	.3
	25 - 34 years	46	15.3	15.3	15.7
	35 - 49 years	112	37.3	37.3	53.0
	50 years and above	141	47.0	47.0	100.0
	Total	300	100.0	100.0	

C3. What is your highest level of education? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some primary schooling	3	1.0	1.0	1.0
	Primary school completed	1	.3	.3	1.3
	Some high schooling	11	3.7	3.7	5.0
	High school completed	37	12.3	12.3	17.3
	Some college/technikon education	26	8.7	8.7	26.0
	College/technikon education completed	45	15.0	15.0	41.0
	Some university education	29	9.7	9.7	50.7
	Undergraduate university education completed	39	13.0	13.0	63.7
	Postgraduate university education completed	100	33.3	33.3	97.0
	Other post-matric qualifications	9	3.0	3.0	100.0
	Total	300	100.0	100.0	

C4. Which of the following best describes your working status? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student (Part-time)	1	.3	.3	.3
	Student (Full-time)	1	.3	.3	.7
	Employed full-time	198	66.0	66.0	66.7
	Employed part-time	12	4.0	4.0	70.7
	Self employed	43	14.3	14.3	85.0
	Unemployed	17	5.7	5.7	90.7
	Housewife/Househusband not working outside the home	1	.3	.3	91.0
	Retired/Pensioner	27	9.0	9.0	100.0
	Total	300	100.0	100.0	

C5. Which of the following best describes your Marital Status? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	180	60.0	60.0	60.0
	Single	66	22.0	22.0	82.0
	Co-habitating	6	2.0	2.0	84.0
	Separated	9	3.0	3.0	87.0
	Divorced	25	8.3	8.3	95.3
	Widow/widower	14	4.7	4.7	100.0
	Total	300	100.0	100.0	

C6. What is your gross monthly personal income before deductions? READ OUT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up to R8000	40	13.3	13.3	13.3
	R8001 - R15000	32	10.7	10.7	24.0
	R15001 - R25000	57	19.0	19.0	43.0
	R25001 - R42000	89	29.7	29.7	72.7
	R42001 - R60000	50	16.7	16.7	89.3
	R60001+	30	10.0	10.0	99.3
	7	2	.7	.7	100.0
	Total	300	100.0	100.0	