

LEADERSHIP IN NATURAL CAPITAL ACCOUNTING

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DECLARATION

I declare that this Doctoral dissertation, which I hereby submit for the degree PhD: Leadership at the University of Pretoria, is my own work and has not been submitted by me for a degree at another university.

Kiruben Naicker

Pretoria, South Africa

March 2020

DEDICATION

To my sons Khaiuren and Thashar Naicker
Pappa loves you boys very much!

Your young lives, filled with so much promise and opportunity, have inspired me to undertake this journey.

Always persevere, embrace opportunity with open arms and always give your best. You are indeed the future Leaders of Tomorrow.

In the famous words of our great leader of our time
“... ***It always seems impossible until it's done*** ...”

Nelson Mandela

To the Reader

2020 has been an epic year in the history of humanity
During this unprecedented time, Co-creation and unlimited Optimism will lead us through Complexity.

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A PhD is an elaborate undertaking that does not go without a lot of sacrifice, dedication, endurance and the assistance of many people along this journey of self-discovery. It is a journey that can at times be very lonely and wearisome, where the easiest thing to do would be to give it up before completion. I am therefore sincerely grateful to a number of people who have been very supportive and encouraging.

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ABSTRACT

Leadership research has transitioned from studying the character traits, position and background of individuals towards an exploration of the process of leadership. This transition has been welcomed by many scholars who claim that leadership is an ongoing combination of actions that are socially co-constructed by several actors (Crevani, Lindgren & Packendorff, 2010). Previous scholarship has recognised that co-construction of leadership emergence has taken place through the pursuit of common goals, meaning-making and joint outcomes (Bennis, 2007; Drath, McCauley, Palus, Van Velsor, O'Connor & McGuire, 2008; Uhl-Bien, 2006). Research on how leadership is co-created was insufficient to understand how co-creation was happening within the processes of leadership.

The study investigated how leadership was co-created within a specific case context. This research was conducted on a global scale but undertaken in South Africa. It was further decided to locate the research during the evolving process of the concept of Natural Capital Accounting (NCA) (the emergent case context), which is one of many multidisciplinary approaches to sustainable development. NCA, however, has been pitched as an innovative tool to bring about well-needed systemic transformative change in society. Relational leadership theory, which is the study of both relationships and relational dynamics of leadership (Uhl-Bien, 2006), in the same breath, has been earmarked as an important mechanism for improving our understanding of the growing need for integration of processes, actions and tenets across disciplines in sustainability research (Nicholson & Kurucz, 2019). Relational leadership was the chosen theoretical frame for the study which provided the evidence of how co-creation happened.

Five (5) key themes that underpinned relational leadership were identified and provided the structure for the emerging results of the study. These included "Context", "Value creation", "Communication", "Partnerships and relationships", and "Emotion." Key experts from around the world within the emergent case context of NCA were interviewed to provide insights into the micro-dynamics of co-creation. Five (5) key tenets have emerged from the study. These were "Ambiguity", "Credibility", "Conversation and/or dialogue", "Structures and

systems”, and “Optimistic”. These tenets, interacting with each other and with other identified elements, contributed to our understanding of how co-creation in relational leadership was taking place. Relational leadership theory has been advanced by presenting a construct of co-creation, where the key tenets and other interacting elements identified were developed into a co-creation model that served as a modest theoretical contribution specifically to the relational leadership trajectory and to other relationship centred leadership theories and philosophies. The model served as an integrated mechanism to improve understanding of leadership and advance the implementation of NCA.

Key words: Relational, leadership, Natural Capital Accounting, co-creation

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LIST OF ABBREVIATIONS AND ACRONYMS

AMCEN	African Ministerial Conference on Environment
ANCA	Advancing Natural Capital Accounting also referred to as Advancing SEEA Experimental Ecosystem Accounting
AU	African Union
CAQDAS	Computer-Assisted Qualitative Data Analysis
CBD	Convention on Biological Diversity
CEEPA	Centre for environmental Economics and Policy in Africa
CICES	Common International Classification System
CNCA	Corporate Natural Capital Accounts
COP	Conference of Parties
CSIR	Council for Scientific and Industrial Research
DAC	Direction, Alignment and Collaboration
DART	Dialogue, Access, Risks/benefits and Transparency
DBSA	Development Bank of Southern Africa
DEA	Department of Environmental Affairs
EEA	Environmental Economic Accounting
EFTEC	Economics for the Environment Consultancy Ltd
ENCA	Ecosystem National Capital accounts
ENCORE	Exploring Natural Capital Opportunities, Risks and Exposure
EPA	Environment Protection Agency
EU	European Union
EUROSTAT	European Statistical Office
FAERE	French Association of Environmental and Resource Economists
FASB	Financial Accounting Standards Board
FEGS-CS	Final Ecosystem Goods and Services Classification System
FSSD	Framework for Strategic Sustainable Development
GAAP	Generally Accepted Accounting Principles
GASB	Governmental Accounting Standards Board
GDP	Gross Domestic Product
GDSA	Gaborone Declaration for Sustainability in Africa

GRI	Global Reporting Initiative
IDEEA	Institute for Development of Environmental-Economic Accounting
IHDP	International Human Dimensions Programme
IIED	International Institute for Environment and Development
IIRC	International Integrated Reporting Council
IMF	International Monetary Fund
INEGI	National Institute of Statistics and Geography
InVEST	Integrated Valuation of Ecosystem Services and Trade-offs
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
ISEE	International Society for Ecological Economics
IUCN	International Union for Conservation of Nature
KPI	Key Performance Indicator
LMX	Leader-member exchange
MA	Millennium Assessment
NBSAP	National Biodiversity Research and Action Plan
NCA	Natural Capital Accounting
NCAVES	Natural Capital Accounting and Valuation of Ecosystem Services
NCC	Natural Capital Committee
NCD	Natural Capital Declaration
NCFA	Natural Capital Finance Alliance
NCP	Nature's contribution to people
NDPs	National Development Plans
NESCS	National Ecosystem Services Classification System
ODA	Organisational Discourse Analysis
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
ONS	Office of National Statistics
PVA	Perception formation – value creation – achievement realization
Rio+20	United Nations Conference on Sustainable Development
RKL	Relational Knowledge Leadership
RLT	Theory for relational leadership
SADC	Southern African Development Community

SANBI	South African National Biodiversity Institute
SANPARKS	South African National Parks
SDGs	Sustainable Development Goals
SDL	Service dominant logic
SEEA	System for Environmental Economic Accounting
SEEA CF	System for Environmental Economic Accounting Central Framework
SEEA-EEA	System for Environmental Economic Accounting Experimental Ecosystem Accounting
SESYNC	National Socio-Environmental Synthesis Center
SNA	System of National Accounts
SRUC	Scotland's Rural College
TEEB	The Economics of Ecosystems and Biodiversity
ToL	Tripod of Leadership
UIA	Union of International Associations
UN	United Nations
UNCEEEA	United Nations Committee of Experts on Environmental-Economic Accounting
UNEA	United Nations Environment Assembly
UNEP	United Nations Environmental Programme
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNSD	United Nations Statistical Division
UP	University of Pretoria
VANTAGE	Valuation and Accounting of Natural Capital for Green Economy
WAVES	Wealth Accounting and the Valuation of Ecosystem Services
WEF	World Economic Forum
WRC	Water Research Commission

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Challenges of the 21st century are complex and require a multidisciplinary approach to address them (Kurucz, Colbert, Ludeke-Freund, Upward & Willard, 2017; Pearce & Manz, 2005). These complex issues are creating a radically different and diverse context for the present leadership in society, which subsequently requires an equally radical change in perspective. One such complex issue that encapsulates and links these problems is environmental sustainability¹, within which biodiversity loss and ecosystem collapse are rated as one of the major risks in terms of likelihood and impact facing the world today (WEF, 2016:11; 2017b; 2020). Addressing such complexity, however, is still characterised by its relational nature, where leaders or people in positions of authority and power interact and engage with the broader society to address these complex issues. The World Economic Forum (2020) calls for joint action to address the complex problems that the world is currently facing. Such an approach requires leaders and stakeholders working in a multidisciplinary, collaborative manner to integrate their interests, which forms the basis of enquiry needed to advance leadership in environmental sustainability.

Leadership can be framed in different ways. Varying schools of thought have expressed leadership as a continuum, where one far end of the continuum highlights individual dimensions of leadership and the other end focuses on the “social constructionist approach” that emphasises the collective or interactive nature of leadership (Ospina & Uhl-Bien, 2012). Integration and engagement along the continuum between the two extreme ends therefore provide the research agenda for numerous scholars to contribute to the body of knowledge on leadership. Foti, Coyle, Epitropaki and Hansbrough (2017) discover that there is

¹ Sustainability is defined as the “persistence in the long indefinite term of essential features of the human subsystem and the ecosystem” (Hodge in Pater & Christea, 2016:364). As a simple concept to understand, sustainability can be broken down into strong and weak sustainability, where the former refers to the accumulative stock and suite of functions nature provides for humans and itself that cannot be replaced and should be given adequate protection, whilst the latter implies that the stock and functions of the natural environment can be replaced by any of the other forms of capital, most commonly produced capital (Dietz & Neumayer, 2007).

an implicit interconnected relationship between the leader, the follower and the outcomes due to the changing, context-specific and time-specific attributes of leadership. These various constructs reiterate the continuum as an ongoing focus of scholarship.

1.1.1 Leadership as a phenomenon

1.1.1.1 *Rational leadership*

Many schools of thought have also conceptualised leadership through individual action, i.e. through the skills, abilities and/or character of the individual leader. The continuum mentioned above also builds on the philosophy of the individual leader. Fletcher (1999) speaks of a traditional belief system or what he refers to as a 'rational logic of effectiveness'. This is simply a way of interpreting leadership with a focus on the importance of the individual self. The individual, however, is dependent on other factors in order to emerge as a leader. A leader can be a position in an organisation or he or she can be a role that they assume or is ascribed to. Notwithstanding, there is an action of someone leading and someone following. Bennis (2007) describes this process in its most fundamental form as the 'tripod of leadership', where there is a leader, a follower and the pursuit or achievement of a common goal, with all three elements unable to survive without the others. Leadership may be a combination of leading and following. This combination, however, creates leadership but simultaneously it also produces followership (Uhl-Bien, Riggio, Lowe & Carsten, 2014). Leadership is therefore the combined acts of leading and following.

The rational 'logic of effectiveness' positions the leader in a hierarchical set-up, where the main objective of the company is how well it can compete; profit maximization, top-down or hierarchical management over followers and subordinates exists, and accountability of individuals is important, together with improvements of the self, reward and promotion that are evident (Nicholson & Kurucz, 2019). Applying context to the 'rational logic of effectiveness' highlights that relationships exist, but no or very little collective or shared leadership emerges when trying to achieve the shared or common goal as reflected in the 'tripod of

leadership.’ Context² is nevertheless important, as it discloses the numerous aspects of leadership which emphasise the characteristics, actions, acts, and traits of heroic individuals, but it may be insufficient to explore the ontology of leadership and differentiate it as a special phenomenon (Kelly, 2013).

Context can have a varied impact on research findings, meaning or sense-making at various levels, as well as affecting the outcomes of the relationship between the leader and the follower (Johns, 2006). Pearce and Manz (2005) argue a case for self and shared leadership, which is the future direction of the way leadership is progressing in order to address complex issues that the world currently faces. However, this self-leadership has its beginnings in the early manifestation of ontologia, where leadership, leaders and practice were self-induced (Erhard, Jensen & Granger, 2013). Fundamentally, individuals saw themselves as leaders and practised leadership. This was evident in bureaucratic top-down command and control organisational structures. In today’s organisational structures, which are in a state of flux and are structurally flatter and team-based, self-leadership is again presenting itself where members of a particular organisational system are competent to self-lead (Pearce & Manz, 2005).

1.1.1.2 Leadership as a process

Leadership is more frequently considered as a process that is socially constructed where our understanding of leadership is given consideration as the preferred ontology (Uhl-Bien, 2006). Meindl (1995) argues that the relationship between leaders and followers is fundamentally a constructed one, influenced significantly by context mentioned above. The ‘continuum’ between the personal agency or individual leader on the one extreme end and the constructionist approach on the other end allows for the convergence of these two end points. The constructionist approach therefore highlights the collective nature of leadership with a consideration for both the process that is socially determined and the context (Nicholson & Kurucz, 2019).

² Context can be defined as situational opportunities and constraints that affect the occurrence and meaning of organisational behaviour as well as functional relationships between variables (Johns, 2006).

The continuous social flow along the 'continuum' provides the opportunity to observe how leadership may emerge in different contexts. Paunova (2015) claims that leadership is produced in small groups through ascription and in other instances it is produced through hard work. The focus, however, is still on the individual, where individuals in a group excel and demonstrate leadership when team members in their group afford them the confidence or ascription of leadership. Individuals in a group can also work hard and emerge as leaders anyway. However, such instances may be as a result of group dynamics, practices, processes and interactions, and not necessarily only as a result of the interplay between leaders and followers. This social process of group dynamics illuminates the notion of leadership as a continuous social flow (Crevani *et al.*, 2010). At this point, clarity is needed on how the group or collective defines the necessary path forward for this socially constructed process of leadership emergence. Drath *et al.* (2008) introduce what is known as the DAC ontology, where a shared sense of *direction*, an *alignment* of purpose and values, and a *collaborative* spirit of commitment towards the said goal constitute leadership as an ongoing outcome of collaborative organisational processes. However, this focus on outcomes is useful but limited, as it may interpret outcomes as products of an incomplete leadership process rather than as a continuous flow and evolving modes of interaction (Crevani *et al.*, 2010). In addition, the DAC ontology may not capture diverging processes and interactions that may emerge in the leadership process. This is problematic when researching the notion of co-creation in relational leadership. Drath *et al.*'s (2008) view of the 'continuum', however, includes the individual leader with a focus on developing leadership abilities whilst simultaneously enhancing the capacity of the group or collective. This means that the entire group, even the individuals who are not formally designated or attributed leadership roles, produces leadership. This viewpoint lends itself to leadership being viewed as gaseous or fluid and distributed, which emerges within relations (Nicholson & Kurucz, 2019; Uhl-Bien, 2017). The notion of co-creation in this context becomes more invisible.

The ebbs and flows of this social process (Johns, 2006) can, however, result in leadership being almost anything and non-existent at the same time (Alvesson & Sveningsson, 2003). We can therefore make the assumption that leadership would

always exists. Calder (1977) argues that leadership has its origins in everyday discourse. Kelly (2013) claims that leadership does not have anything specific but consists of a number of elements that interact, take on many forms at different levels whilst suppressing and advancing a variety of outcomes. Such arguments lend themselves to leadership being interpreted as a routine everyday occurrence which happens to still be present. The move outwards, from a preoccupation of whether or not leadership exists, to a shared socially constructed reality, where leadership exists as a social and relational phenomenon, means that the emerging relationships and interactions become more important. A deeper understanding of the dynamics of relationships within this socially constructionist approach will further establish and anchor leadership in practice as a relational phenomenon.

1.1.1.3 Relational leadership

Relational leadership is described as a means of being in the presence of someone else, interacting, learning and growing from the experience of being present in someone else's space (Cunliffe & Eriksen, 2011). However, such a description of relational practice of leadership was not historically well received. Fletcher (1999) argues that although the practice of relational leadership warranted more collaboration and interactions within a team context, the whole system still supported individual achievement, functioning as an entity, and specialization which were recognised and celebrated more than any other practice. The field of human development has originally underpinned the development of relational leadership practice which produced interactions that had merit (Jordan, Kaplan, Miller, Stiver & Surrey, 1991). The theory was originally developed by a feminist psychologist as a frame for human development that challenged gender-based traditional views of what originally constituted good behaviour or being a good worker (Nicholson & Kurucz, 2019). However, placing this gender-based perspective aside and focusing on relational leadership practice, a certain value system emerged where there was support within a networked context allowing further growth, effectiveness and achievement. Uhl-Bien (2006) argues that the self is ultimately a combination of all the interactions and relationships that allows an individual to emerge in its own entirety. Understanding relational leadership would entail observing the daily occurrences

as having value to further understand better the relational phenomenon. Uhl-Bien (2006) puts forward a definition of relational leadership where change and output based on coordination were developed further and produced. Kelly (2013) strongly reaffirms that when leadership was viewed in a relational context, collaborative and collective leadership took precedence over other elements. As a result of the engagement and interactions within the process, individuals were then viewed as leaders.

Marchiondo, Myers and Kopelman (2015) show that through a process that is socially constructed, individuals, through the ability and knowledge to do so, can claim or grant positions of leadership within a team context. Hence, there are many aspects of relational leadership identification construction that inform the body of knowledge on leadership.

Co-creation

Co-creation can be viewed as an implicit tenet of relational leadership. The different belief systems that surface within relational leadership may activate the identity construction of relational leadership, subsequently providing a deeper understanding of what underpins the perceptions of leadership. It can be dependent on how the individual within the group perceives him or herself in the context of either a leader or follower. The relationships itself would determine the construction of the identity (Gabriel, 2015). The intended purpose of the group constructs was based on the identity of the leader, whether it was for the purpose of the company or the intention for collective actions (Uhl-Bien, Marion & McKelvey, 2007). The intention of mutual growth and combined outcomes can also determine the identity construction (Nicholson & Kurucz, 2019).

Slote (2007) argues that emotion is an unpredictable factor that affects the joint meaning-making or co-creation process, where emotion can either be expressed openly and the subsequent vulnerability embraced, or alternatively the emotion can be controlled as it could be perceived as affecting the judgement of the individual in some way. Emotion may therefore be one of the key indicators for co-creation. In this instance, leaders engage empathetically and are responsive to the needs of others (Nicholson & Kurucz, 2019). In this context, leadership can be

interpreted as servant leadership, which focuses on the needs and wants of the follower as opposed to anything else (Chiniara & Bentein, 2017). It can therefore be argued that the distinction and navigation between entity or individual construction and socially constructed perspectives have implications for the co-construction of leadership (Dugan, 2017; Uhl-Bien, 2006). The embedded role of co-creation within relational leadership as a socially constructed process may therefore allow leaders to deal with complex issues. One such complex issue that is widely contentious is the issue of sustainability, with the three interacting areas of ecological, social and economic that interact to protect and govern jointly held resources such as biodiversity, climate, water, and energy.

Relational leadership has been earmarked as an important mechanism in sustainability for implementing tangible actions between sectors, regions and disciplines (Nicholson & Kurucz, 2019). Kurucz *et al.* (2017) argue that integration is a key driver and demonstrate the role of integration through using two trans-disciplinary case studies intended to achieve sustainability, where the practice of relational leadership has been demonstrated successfully. Relational leadership theory therefore provided a suitable overarching framework to explore the notion of co-creation in the relational dynamics of sustainability and therefore provided the research agenda for this research. Subsequently, in so doing, the research outcomes of this study have made a theoretical contribution to the body of knowledge on relational leadership theory and inadvertently contributed to the emerging relational elements within other leadership styles and theories, including but not limited to new contemporary perspectives on leadership, including global, complexity, shared, followership, collaborative, servant and responsible leadership theories and frameworks.

1.1.2 Natural Capital Accounting as a case context

Considering the fact that NCA is a relatively new concept, it can be argued that limited understanding exists amongst key role players (public, private and civil society sectors) on their respective roles in the successful implementation thereof. Whilst the innovation and diversity of practice of NCA may be recognised for its role in advancing the concept of NCA, it somehow has inhibited the widespread

consistency, comparability, and mainstream implementation of the various approaches (Hein, Obst, Edens & Remme, 2015). Edens and Hein (2013:50) attempt to address the technical issues and inconsistencies in accounting for natural capital and further suggest that the actual account development, which is part of the NCA process, takes place within a measurement framework that is clear and precise to inform decision-making, especially when engaging with policy makers and the public. Hein *et al.* (2020) confirm that the pursuit of a standardised framework has resulted in progress towards bringing everyone onto the same level of understanding, resulting in positive outcomes.

The myriad of ways of application of NCA may have had an impact on the decision-making process and leadership emergence at various scales (Sullivan, 2014). The case context of NCA has provided multiple contexts where leadership emergence, change and development could be expressed. Walumbwa, Maitique and Atamanik (2014:288) interpret the environment as a social space where different social dimensions interact at multiple levels, impacting on the stakeholders, employees and the organisation in numerous ways.

Leadership theory is, however, unclear on the role of co-creation in the process of relational leadership. The intention with co-creation as one of the tenets of relational leadership is to result in added value, enhanced stakeholder experience and increased success of processes, and in this context, it would be to provide a deeper understanding of the process of leadership. Scholarship on hierarchical leadership (Shondrick, Dinah & Lord, 2010), servant leadership (Chiniara & Bentein, 2017), authentic leadership (Algeria & Lips-Wiersma, 2012), collaborative leadership (VanVactor, 2012), and stakeholder theory (Reypens, Lievens & Blazevic, 2016), has alluded to various aspects of co-creation in leadership processes. The research therefore warranted an investigation into the relevance of co-creation, using the multidisciplinary process of NCA.

1.1.2.1 *The need for standardisation to improve public and private sector decision-making*

The value and contributions of nature to the economy are therefore inadequately accounted, which results in the deterioration of the environment, spiralling biodiversity loss, and increased climate change, amongst other global issues. Subsequently, the natural capital approach has come about as a way to reconcile the environment with economics in order to facilitate better decision-making for managing, protecting and restoring natural capital. Ban (2013), in his address to the Inaugural World Forum on Natural Capital, reiterated that "... human and natural capital are every bit important as financial capital ...". An economic perspective on nature is therefore deemed by many role-players as essential for decision-makers who are concerned about diminishing resources and sustainability. Natural capital can therefore be considered as a critical value driver for many concerned and taking action on natural capital requires leadership. A better understanding of this call for leadership is necessary to advance the implementation of the natural capital approach according to an accepted standard. All role-players, including government, business and civil society, are unable to independently address the challenges related to natural capital issues, largely because of its complex nature (Kill, 2015). The private sector is a main driver of biodiversity loss and climate change. Governments, however, are unable to promote growth, drive sustainability, develop the green economy, and address environmental problems such as biodiversity loss and climate change. Therefore, the public and private sectors have a shared responsibility towards securing a sustainable future for all. Interaction and engagement amongst the public and private sectors are important as both these sectors are responsible for reporting on progress and contributing to national imperatives.

1.1.2.2 *The need to standardise diverse approaches and tools for effective coordination*

Private and public sectors around the world are attempting to address the challenges and opportunities related to natural capital management in many different ways and to varying extents. Actions for improved measurement of sustainability on the ground warrant a better understanding to advance and

standardise best practices. One such pragmatic mechanism is that of Natural Capital Accounting (NCA), which has emerged as a mechanism to address the integration of the value of nature and its contributions to the economy in a regular and systematic manner. NCA is therefore a value driver across organisations, particularly since it is considered to determine the indicators for the widespread implementation of the sustainable development goals (Setlhogile, Arntzen & Pule, 2016). A number of approaches exist. These include the Environmental Goods and Services Sector Handbook (European Commission, 2016), Users and Uses of Environmental Accounts (Smith, 2014), Designing Pilots for Ecosystem Accounting (Ahlroth, 2014), Ecosystem Natural Capital Accounts Quick Starter Package (CBD, 2014), and the Final Ecosystem Goods and Services Classification (Landers & Nahlik, 2013), amongst others. All of these approaches have contributed towards the official adoption in 2012 by the public sector of the United Nations System for Environmental Economic Accounting Central Framework (SEEA CF) as the global statistical standard for NCA (UN, 2012b). In addition, the Natural Capital Coalition, inspired by The Economics of Ecosystems and Biodiversity (TEEB) process, was launched in 2012, with the aim to bring together global stakeholders to study and standardise methods for measurement and valuation of natural capital in business (Natural Capital Coalition, 2015). To further catalyse the momentum and interest of the private sector, the Natural Capital Coalition launched the Natural Capital Protocol in July 2016. The main aim of the Natural Capital Protocol is to provide a standardised methodology to assist businesses to measure and value their impacts and dependencies on natural capital, and enhance their decision-making for a range of applications, including the management of risk, exploring multiple revenue streams, enhancing products and encouraging innovation throughout the value chain, as well as ensuring that disclosure and integrated reporting become mainstream practices (Natural Capital Coalition, 2015). Taking action on natural capital therefore requires both public and private sector leadership with clear objectives, sound measurement, valuation and application in decision-making.

1.1.2.3 Key attributes of the Case Context

Case study research attracts criticism regarding its ability to produce knowledge that is general in nature which is based on individual cases (Yin, 2009). Multiple case studies are recommended as they are more robust and do not attract the negative feedback that information is general, as is the case for single case studies (Yin, 2009). Horlings, Collinge and Gibney (2017) and Kurucz *et.al.* (2017) have used more than one case study to investigate leadership. This research, however, used the case context of NCA, which provided multiple, multi-level contexts within the case. The case context covered numerous dimensions of natural capital, including carbon, water, minerals, land, tourism, biodiversity and ecosystems. NCA therefore served as a unique exemplary case context for the investigation of how leadership was being co-created within the evolution of NCA within the relational leadership framework. The key attributes and features were derived from the selection and use of the case for the research (Table 1.1).

Table 1.1: Key attributes of the case context

• Multidisciplinary
• Multi-level
• Multi-dimensional
• Emergent and Evolutionary
• Expert-based
• Stakeholder-driven
• Context sensitive
• Value-based
• Relational

1.2 PROBLEM STATEMENT

Uhl-Bien (2006) argues that leadership needs to be understood better through more focus on the processes – the important activities of arranging and contributing to the shaping of the relationships and their interactions. Several scholars have investigated leadership as an activity of the collective, where the ongoing social process is co-constructed by a number of different actors (Crevani

et al., 2010). Uhl-Bien and Arena (2017) claim that people are able to coalesce with unexpected benefits because of a bigger interconnectedness and power that is redistributed. However, the notion of co-creation within the process of leadership is unclear. Bennis (2007) refers to the tripod of leadership, where there is a leader, a follower and the shared goal that they both want to achieve. Drath *et al.* (2008) highlight the co-construction of a sense of common direction in social interaction. It therefore may be apparent that co-creation is taking place at a macro level towards the achievement of shared goals and outcomes. However, it is inadequate to claim that leadership is sufficiently distributed between leader and follower because they have engaged in a process to attain common goals and aspirations, particularly if the process of leadership has been taken into consideration (Crevani *et al.*, 2010).

The research therefore aimed to gain a better understanding of how leadership was co-created, using one of the many multidisciplinary methods used to achieve sustainability, such as that of NCA as a unique case context.

NCA, because of its multidisciplinary nature, therefore provided a suitable case context to ask the overarching research question of this study:

How is leadership co-created in the emergent case context of NCA?

1.3 RESEARCH OBJECTIVES

The primary research objectives deduced from the problem statement, and from the overall research question, are presented in Table 1.2.

Table 1.2: Primary objectives of the study

Research Question	How leadership is co-created in the emergent case of NCA?	
OBJECTIVE NUMBER	OBJECTIVE	OUTCOME
1	Improved understanding of the role of co-creation in relational leadership theory	The key tenets of co-creation.

2	Added evidence to relational leadership theory as the lens for investigating co-creation	A construct of co-creation for relational leadership.
3	Identified principles under which Natural Capital Accounting emerged as a concept.	A list of core principles for leadership in Natural Capital Accounting.

Pre-defined themes based on their relevance and saliency within relational leadership theory, as well as within the case context of NCA, were identified and set the scene for the presentation of the discussions and results of the research as per respective themes throughout the thesis. Each of the themes had a sub-objective linked to it which has been developed based on the role of the theme in the leadership and co-creation schematic. The themes were colour-coded for easy navigation throughout the thesis (Table 1.3).

Table 1.3: Secondary objectives of the study as per pre-defined themes

Themes	Sub-objective
CONTEXT	How leadership functioned in the context of NCA?
VALUE CREATION	How value was co-created within and between relationships?
COMMUNICATION	How communication between the various emerging relationships promoted or impeded the co-creation process?
PARNERSHIPS AND RELATIONSHIPS	What was the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA?
EMOTION	What was the role of emotion in the co-creation process of leadership?

1.4 IMPORTANCE AND BENEFITS OF THE STUDY

Leadership research has frequently in the past been allowed to occur from a top-down manner, emphasising individuals as great people who had the necessary abilities, skills and traits (Wood, 2005). Leadership research has, however, changed from a focus on individuals to a focus on relationships, in what Bennis

(2007) called the tripod of leadership. Bennis (2007) admits that leadership will become more collaborative, where complex challenges can only be addressed through intelligent people working collaboratively together. Many scholars of leadership have welcomed the move from studying the characteristics of people historically called leaders, their actions or even their behaviour, towards the collaborative, relational aspects of leadership (Bennis, 2007; Horlings, Collinge, & Gibney, 2017; Kurucz *et al.*, 2017; Paunova, 2015; Uhl-Bien, 2006), and they reiterate that leadership should be viewed as collective processes and practices arranged and shared by people as they interact with each other, rather than the actions and thinking of formal individuals who are perceived as leaders (Crevani *et al.*, 2010).

Relational leadership theory, which is the study of both relational dynamics and relationships within leadership (Uhl-Bien, 2006), provided the theoretical framework for this study. The theory is not very strong on whether co-creation or co-development or co-orientation or co-construction, terms that are used interchangeably, is actually embedded throughout the process of leadership emergence. Oral (2019) confirms these inadequacies and limitations of leadership theories in addressing the burgeoning relational dynamics of relational leadership. The present study therefore contributed towards a deeper understanding of how co-creation was taking place in the relational dynamics of leadership. An improved understanding of the process of co-creation not only addressed some of the research gaps on co-creation within relational leadership, but further strengthened the body of knowledge on relational leadership theory, unearthing the key elements of the co-creation process. Additional insight and a better understanding of the process of the interacting key elements of co-creation within relational leadership would also have benefited and contributed towards other relationship centred leadership theories and ontologies.

Kurucz *et al.* (2017) explore the relevant role of relational leadership for two existing mechanisms or tools to achieve sustainability: the Framework for Strategic Sustainable Development (FSSD) and the Planetary Boundary approach, which further highlight the required capacity, implementation experience and principles needed to advance these approaches to sustainability.

To date, no study has deeply investigated how leadership was being co-created within the multidisciplinary process of NCA as an exemplary case context. The study therefore specifically:

- Improved understanding of the role of co-creation in relational leadership theory, the outcome of which was the key tenets of co-creation;
- Added evidence to relational leadership theory as the lens for investigating co-creation, the outcome of which was a construct of co-creation for relational leadership, presented as a co-creation model for relational leadership theory, and
- Identified principles under which NCA emerged as a concept, the outcome of which was a list of core principles for leadership in NCA.

NCA has numerous steps and processes that require political, scientific and technical knowhow. Therefore, it could be argued that leadership in the evolution of the concept of NCA has taken on many different forms, consisting of multiple actors and processes. It may have substituted characteristics of individual leaders for burgeoning relationships or what is referred to as relational leadership. Uhl-Bien (2006) confirms that there is still a lot that is unknown about relational leadership and, as such, its meaning or the way one can define it is changing. However, relational leadership can be described as a process that is socially constructed and socially spread where interpersonal interactions amongst actors within an organisation emerge (Uhl-Bien & Ospina, 2012). It is noteworthy to add that there is co-production of these relationships where joint meaning-making within varying roles and contexts takes place (Shamir, in Uhl-Bien & Ospina, 2012), which provided the basis of enquiry for this research. It can therefore be argued that by investigating leadership in the context of the emergent case of NCA, the research required making sense of these complex processes and thereby improved our understanding of co-creation in leadership theory. The research specifically contributed to relational leadership theory enhancing and complementing existing leadership ontologies: Tripod of Leadership (TOL); Direction, Alignment, Commitment Model (DAC), and more recently, the Perception formation – Value creation – Achievement realization Model (PVA).

1.5 DELIMITATIONS AND LIMITATIONS

1.5.1 Delimitations

The research investigated how co-creation took place in relational leadership in the evolution of the concept of NCA as a case context. The focus of the research was on investigating the co-creation elements of relational leadership. Its theoretical contribution was intended to enhance the body of knowledge on co-creation within the relational dynamics of relational leadership theory. Relational elements are, however, found in other leadership theories, including but not limited to Responsible, Collective and/or Collaborative; Transformational, Inclusive, Authentic, Complexity, Shared, Servant and Global leadership amongst others. Whilst the emphasis of the research has been on relational leadership as a socially constructed process, the scope and potential of the research outcomes inadvertently added to the myriad of leadership styles, theories, schools of thought and scholarship.

Leadership, as a process, is seen as a flow that is continuously socially constructed (Crevani *et al.*, 2010). As such, to make it possible to research co-creation within the processes of leadership, the research was delimited to specific practices and interactions of key people. In order to obtain a deeper understanding of how co-creation took place, these key people were considered discipline experts who had in one way or another participated in the process of the evolution of the concept of NCA. NCA is a multidisciplinary process, involving stakeholders from various disciplines and sectors, and the research included selected actors and processes from public, private, parastatal and non-governmental organisations, especially those targeted sectors that have been instrumental in the evolution of NCA. The study was conducted from a global pool of experts. Several authors argue that when conducting qualitative research studies, particularly on specialised case contexts, experts are sufficient as a data sample and one data gathering method particularly if the chosen approach is semi-structured interviews, is also adequate to validate the data (Bird & Mendenhall, 2016; Bogner, Littig & Menz, 2009:11; Rosenthal, 2016). To complement the main source of data of conducting targeted interviews with NCA experts, the research followed a method

of triangulation³, administering a targeted survey and conducting focus groups where necessary, or aligning the research to selected public participatory events related to the case context were also considered. The unit of analysis was at the individual level but the context was the evolution of the multidisciplinary concept of NCA.

In summary, the delimitations of the study were:

- A global study conducted in South Africa within the case context of NCA.
- The unit of analysis was at the individual level focussing on the specific practices, interactions and experiences of discipline experts within the case context of the evolution of the multidisciplinary concept of NCA.
- Discipline experts from a global pool of experts comprised the data sample.
- Semi-structured interviews were the main source of data collection, using snow-balling methodology to reach saturation, whilst other data collection methods facilitated triangulation.
- Relational leadership theory provided the theoretical frame to which the study contributed, with the potential to add value to other relationally focussed leadership ontologies, styles and frameworks.

1.5.2 Limitations

Limitations existed due to the qualitative nature of the study. Firstly, whilst multiple contexts emerged within the case, the research was limited to the evolving process of the concept of NCA. Related to this limitation, the research also attempted to develop a core set of principles for leadership in NCA needed to advance the implementation of NCA prospectively. The context was therefore limited to the evolution of the concept of NCA, particularly because the future context for leadership in NCA was unknown and may have been difficult to predict. However, what happened in the past is likely to be seen as an indication of what will happen in the future (Sandberg & Tsouka, 2015). In addition, all the practices and interactions were context and time-bound (Crevani *et al.*, 2010).

³ Triangulation is a research methodology combining two or more data sources to strengthen the research design, increase validity, reduce bias and improve reliability (Thurmond, 2001).

Secondly, the research has focused on the perspectives and experiences of discipline experts within the case context of NCA. The research involved conducting personal semi-structured interviews. With this type of methodology, availability and access to selected interviewees have been the biggest challenge, as would have been their willingness to participate and contribute confidentially or publicly to the study. Because the study took place from the global pool of experts, it was difficult to ensure consistency of context because of the limited availability and access to the participants. An attempt at data collection triangulation was undertaken, but because of the specific case context of NCA, the added value of data collection triangulation was not realised.

The approach of pre-defining themes for the research provided structure within which the research process was able to unfold. This approach may have limited the exploratory potential of the research, taking into consideration that the phenomenon being investigated has been described as a socially constructed process.

1.6 RESEARCH DESIGN

1.6.1 Theoretical/Analytical framework

A fundamental aspect of the research process is the determination of the research methodology and the analytical and/or theoretical framework to be followed. Qualitative and quantitative research pertains to the different types of data produced in the research process (Garbarino & Holland, 2009). Quantitative research generates volumes of data where numbers are dominant, whilst qualitative research generates data in a form where narrative or contextual presentation is dominant, researching experiences with the specific subject or discipline under investigation (McQuarrie & McIntyre, 2014). Applying mixed methods research uses a blend of both quantitative and qualitative mechanisms to complement and improve both methods (Harrison, 2013). Leadership, which is of relevance to this study, is a complex, multi-level socially constructed process. It becomes a phenomenon of considerable interest but simultaneously difficult to study (Stentz, Clark & Matkin, 2012). Kelly (2013) argues that quantitative studies of leadership through narrow questionnaire and survey items and stilted questions

of structured interviews are inadequate to study leadership. Therefore, to best understand relevant leadership processes and dynamics, the field of leadership research calls for the application of multiple research approaches (Stentz *et al.*, 2012).

Given the transition of leadership research from studying individuals to better understanding the continuous social flows of leadership, the proposed research adopts a relational theoretical framework, as well as a process (social constructionist) understanding of leadership. Relational leadership theory (RLT) therefore offers an overarching framework for a variety of methods, approaches, and even ontologies that explore the relational dynamics that are involved in the production and practice of leadership (Uhl-Bien, 2006). To complement the relational theoretical framework, the study made use of an ontology of critical realism and an epistemology of relational constructionism to improve our understanding of how leadership was co-created in the different micro-processes of relational leadership theory. These three elements, the relational theoretical framework, the critical realism ontology and the relational constructionism epistemology do not exclude the activities and actions of the individual leader, but leadership was researched more for its emergence in the way the actors experienced specific processes within the relational dynamics of the provided context (Table 1.4).

Table 1.4: Summary of research paradigm

Broad research design	Rationale
THEORETICAL FRAMEWORK	The relational dynamics that are involved in the production and practice of leadership
RELATIONAL LEADERSHIP	
SOCIAL CONSTRUCTIONIST APPROACH	The social constructions within context
CASE CONTEXT	MULTIDISCIPLINARY, MULTI-LEVEL
	NATURAL CAPITAL ACCOUNTING (NCA)
	UNIT OF OBSERVATION
KEY TENET OF THEORETICAL FRAMEWORK	CO-CREATION WITHIN RELATIONAL LEADERSHIP
	UNIT OF ANALYSIS

RESEARCH PARADIGM		
KEY ELEMENTS	CHOICE	REASON
Ontology	Critical realism	The pursuit of an understanding of the hidden or embedded relationships and structures that are socially constructed, using a relational leadership lens.
Epistemology	Relational constructionism	Multiple realities within a dynamic case context where knowledge between the self and others is socially constructed, co-evolving, inter-/co-dependent.

The research interrogates leadership as a relational phenomenon using the multi-level processes of NCA as a case context to answer the overall research question of: *How is leadership co-created in the emergent case of NCA?* A case context approach was therefore used for this research. A case study can be described as an empirical investigation of an emerging phenomenon within a real-life context where the boundaries between the context and the phenomenon are not clearly distinguishable (Yin, in Soy, 2004). As a research method, the case study is used in numerous contexts to complement our knowledge of group, individual, organisational, political, social, and related phenomena (Yin, 2009). Case studies can be used to achieve different aims, test theory, provide description, or generate theory (Eisenhardt, 1989; Stentz *et al.*, 2012). Poulis, Poulis and Plakoyiannaki (2013) argue that case studies are, however, inherently context sensitive and advocate for the use of case contexts which can accommodate multiple case studies within a case. The NCA case context was therefore a good strategy for this research as the research question aimed to reveal the ontology of co-creation in relational leadership in the evolution of the concept of NCA as a case context.

1.6.2 Sample selection and data collection

The multidisciplinary, multi-level case context of NCA that has emerged globally provided the data sample for the research which was the unit of observation for the study. Since the study took place at multiple levels, the selection of

participants was guided by the literature review to identify key organisations that have been champions, proponents and/or participants in the evolution of the concept of NCA. For the full list of selected participants from the respective organisations located in different parts of the world see Chapter 4 section 4.4.2, Tables 4.2 and 4.3.

In order to ensure that the study took on a multidimensional, multi-perspective and multi-level approach towards leadership as a relational phenomenon, a method of triangulation was followed where discipline experts from the global pool of experts were selected to participate in three types of data gathering methods. These included:

- Semi-structured interviews;
- A focus group; and
- An anonymous survey to a targeted audience.

Table 1.5 presents a summary of the approach used to select discipline experts to participate in the research.

Table 1.5: Summary of research methodology

Methodology	Selection	Reason
Qualitative case context	Qualitative case context approach using a relational leadership theoretical framework to research discipline experts within the case context of NCA.	Illuminates in-depth specific relational tensions and experiences of experts in a dynamic context of NCA within relational leadership theory, which provides the evidence of how co-creation took place.
RESEARCH METHOD	TYPE OF DATA COLLECTION	REASON
	In-depth, semi-structured interviews	Data collection triangulation to strengthen the research design, reduce bias and increase validity and reliability.
	Focus group	
	Anonymous survey	
DATA COLLECTION		
TYPE	SAMPLE SELECTION	EXPLANATION
Semi-structured interviews	The sample of experts was chosen from the global	Main data source for the study to obtain primary

	pool, including regional and national experts. Representative sampling of the case context was maintained through categorisation of participants into three broad schools of thought: SEEA, TEEB & WAVES.	data from NCA expert participants which, according to scholarship, is sufficient as a data collection method for a study of this nature. Interview instrument Skype/Personal/Telephone interviews Recording Transcriptions
Focus group	Focus group convened at Statistics SA, comprising six participants from the Department of Environmental Affairs and Statistics SA, including two discipline experts.	To complement semi-structured interviews and to obtain a perspective of group dynamics within the case context Focus group instrument Facilitated group discussion Recording Transcriptions
Anonymous stakeholder survey	The survey was administered to a combined pool of 512 NCA stakeholders who were participants/delegates of events/platforms (period June to December 2018) where NCA was a confirmed agenda item or the main subject matter of the event/platform.	To complement semi-structured interviews and to obtain a broader stakeholder perspective Surveys/E-mail requests Returned, completed surveys

1.6.3 Data analysis

The data from all three sources were analysed applying the social constructionist approach within the relational leadership theoretical framework. A social constructionist paradigm advocates how the respondents experience the different processes of NCA rather than their actions. However, as stated in the assumptions, subtleties existed between respondents' experiences and their actions. Kurucz *et al.*, (2017) reaffirm this subtlety through the relational leadership conceptual model that was recently developed for strategic sustainability, which describes specific approaches and practices to advance these strategic sustainability mechanisms going forward.

The process that was followed for the data analyses is summarised in Table 1.6.

Table 1.6: Summary of data analysis

Data analysis			
Social constructionist paradigm	METHOD	CODING	PRESENTATION
	Thematic analyses	Deduction: (Manual coding; Pre-defined themes) Open coding: Atlas.ti (Version 8)	Atlas.ti network outputs, Microsoft Excel graphs and tables Frequency/Density (measured by number of times); Patterns and relationships of dominant themes, constructs and tenets (measured by number of times indicating strength/groundedness)

The research aimed to investigate the different dimensions of leadership that have generated tensions and/or opportunities in the evolution of the concept of NCA. The research found key tensions and/or opportunities that have been developed further in the construct of relational leadership in the evolution of NCA. Drath *et al.*, (2008), Kurucz *et al.* (2017), Nicholson and Kurucz (2017), and Uhl-Bien (2006), including other literature, provided some possible constructs when investigating the tenet of co-creation in relational leadership for sustainability.

A method of thematic analysis was adopted and applied to the data. This process involved manual coding, the use of pre-defined themes, and an additional coding process using Atlas.ti, which is computer-assisted data analysis software, referred to as Computer-Assisted Qualitative Data Analysis (CAQDAS). For a detailed account of the data analysis process, see Appendix D.

A process of overlaying the relevant dimensions of relational leadership theory and the attributes of co-creation that were common to relational leadership theory, has focused the object of enquiry of this research on five (5) identified pre-defined themes: context, value creation, communication, partnerships and relationships,

and emotion. These five (5) pre-defined themes were replicated in the data collection instruments and thereafter throughout the thesis in the results, discussion and conclusion of the thesis.

1. Context:

The multidisciplinary processes of NCA are an exemplary case context that provided the context for this research. Meindl (1995) argues that the interactions and relationships between leaders and followers are constructed socially and context plays an important role in influencing these relationships. Taking into consideration the different social processes within interpersonal relationships, context becomes more relevant (Uhl-Bien, 2006).

The research therefore aimed to investigate how leadership functioned in the context of NCA, which provided the opportunity to explore the interaction between the tenets of co-creation and other emerging social processes.

2. Value creation:

Value systems from around the world have been found to be very different and, as such, have had a significant impact on the purpose, practice and function of leadership. The numerous leadership theories that have embraced the focus on relationships, collaboration and the aspirations to achieve common goals, are moving in the direction to increasingly achieve co-creation (Nicholson & Kurucz, 2019). The tenet of values underpins numerous processes that have been found to be a key ingredient for co-production and collective gains (Kurucz *et al.*, 2017).

For this research, exploring how value was co-created within and between relationships improved our understanding of relational leadership theory.

3. Communication:

Kurucz *et al.* (2017), Nicholson and Kurucz (2017), Uhl-Bien (2006) and other scholars introduce the idea of meaning-making that is jointly achieved in the relational process of leadership. Communication, conversation and/or dialogue and language, are important elements of the meaning-making process (Uhl-Bien, 2006). Uhl-Bien and Arena (2017) highlight that the flow of information enhances

social interactions, where context facilitates people grouping together and creating.

Communication is therefore an important tenet of relational leadership and hence the research explored how communication between the various emerging relationships promoted or impeded the co-creation process.

4. Partnerships and relationships:

Partnerships and relationships are tangible outputs of social engagement, interactions and other socially constructed processes (Uhl-Bien, 2006).

Relationships tend to be dynamic when people work together to define and develop their relationships. This research aimed to highlight the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA.

5. Emotion:

New forms of leadership are emerging where emotion is playing a bigger role in the interactions and relational dynamics of human interactions (Ashkanasy, Hartel & Zerbe, 2000).

Uhl-Bien (2006) argues that emotion is also constructed socially and how it spreads is a worthwhile scholarly pursuit. Nicholson and Kurucz (2019) found that decision-making is underpinned by emotions that emerge during the meaning-making process.

The research aimed to highlight the role of emotion in the co-creation process of leadership.

1.7 ASSUMPTIONS

The relational leadership framework, through a social constructionist (leadership as a process) perspective and using a case context, gave rise to a number of

assumptions for the research. Analysis of the current literature in preparation for the research has highlighted the following assumptions:

- Leadership relationships were not restricted to hierarchical structures but occurred throughout the organisation.
- Leadership relations were identified by interactive dynamics.
- Context was important for the study of relational dynamics but for this study, which took place at multiple levels, globally, context was therefore assumed to be constant. However, given the stepwise multi-layered processes of the case context under investigation, including the overarching research question how co-creation amongst all related stakeholders was taking place, context may have had increased significance for the interpretation of the findings. It is assumed that discipline experts have provided their own perspectives as experts on their role in NCA and not that of their organisational affiliations.
- There was an assumption that the relationship between the leader and follower was primarily a constructed one.
- It may have been difficult to differentiate between leadership that emerged from actions and/or processes.

Within the social constructionist paradigm, the intention with semi-structured interviews was to gain deeper insights into co-creation in relational leadership from the participants' lived experience and perspectives. It was therefore assumed that during such interactions, the researcher's values, beliefs and biases have not unintentionally influenced the participants' responses. It was also assumed that reality in this paradigm was subjective.

1.8 THESIS LAYOUT

Chapter 1: Introduction

Chapter 1 provided the problem statement of how leadership was co-created within the emergent case of NCA. It provided a background to the problem statement and proposed a way of addressing the problem of improving understanding of the co-creation process of leadership. The chapter showed

briefly how the research on leadership within the selected case context of NCA was undertaken.

It further rationalised the selection of relational leadership as the theoretical lens for the study.

Chapter 2: Leadership

Chapter 2 presented the various schools of thought on leadership and the associated leadership theories. The focus was on the relational leadership theory as the chosen theoretical lens for the study. The chapter focused on the notion of co-creation as the unit of analysis, where the scholarship of leadership was overlaid with that of co-creation to develop the object of inquiry for the research.

Chapter 3: Natural Capital Accounting as an exemplary case context

Chapter 3 on NCA described the rationale for choosing the case context of NCA in more detail and highlighted the various dimensions of NCA as a multidisciplinary, multi-sector, collaborative process that provided the context for undertaking the research study on how leadership was co-created within the case context. The chapter provided the key attributes of the use of a case context, such as NCA, in undertaking qualitative leadership research. The chapter concluded with the summary of the chapter.

Chapter 4: Methodology

A comprehensive account of the methodology of how the research was executed was presented in Chapter 4. A detailed account of the data analysis process was provided in Appendix D.

Chapter 5: Results

Chapter 5 presented the key results in each of the pre-defined themes, highlighting the dominant construct within the theme and the emergent dominant tenet within each dominant construct. The chapter concluded with cumulative results of the research where the dominant tenets from each theme were presented comparatively.

Chapter 6: **Discussion**

Chapter 6 discussed and interpreted the findings presented in Chapter 5 against the primary objectives, the sub-objectives within each pre-defined theme, and overall research question of the study. The results were discussed against the sub-objectives per theme, in order to answer the overall research question of how leadership was co-created within the emergent case of NCA.

Chapter 7: **Conclusion**

Chapter 7 provided the concluding remarks based on the results presented in Chapter 5 and the discussion presented in Chapter 6 of the thesis. A quick reflection of the previous chapters was included. The overall research question and the objectives of the study were addressed against the results of the research. The importance of the study included the contributions to the academic scholarship and the chapter also included the principles for leadership in NCA, the integrated co-creation model and concise recommendations. Limitations of the study were addressed and recommendations for future research were included.

Final remarks on outcomes of the research conclude the chapter.

CHAPTER 2: LEADERSHIP

2.1 INTRODUCTION

The previous chapter provided the problem statement of how leadership was co-created within the emergent case of NCA. It provided a background to the problem statement and proposed a way of addressing the problem of improving our understanding of the co-creation process of leadership. The chapter showed briefly how the research on leadership within the selected case context of NCA was undertaken.

This chapter provided an account of leadership styles, theories and practice. It described some of the challenges with undertaking leadership research and further rationalised the selection of relational leadership as the theoretical lens for the study.

The chapter concluded with a description of co-creation as a tenet of relational leadership theory. Uhl-Bien and Arena (2017) reiterate that the global society is faced with complex issues and increased uncertainty and this, together with the speed with which society has to deal with these challenges, makes the situation urgent, requiring immediate action by multiple actors. At a time when joint and collaboration action is needed to address the issues adequately, deteriorating economic and political conditions are deepening the fractures within society (WEF, 2020).

2.1.1 What is the problem?

Many scholars have highlighted the complex and grand challenges that the world is currently facing. The latest population growth projections indicate that the world population will grow to 9.7 billion as we approach the year 2050, with 11 billion expected by the end of the century (UN, 2019). Hitt, Haynes and Sherpa (2010) argue that society is at the cusp of an epoch where technological advancements and globalization are driving change. The onset of the 4th industrial revolution is moving with rapid speed and this pace has not been anticipated by society (Gallo & Hlupic, 2019). Climate change, biodiversity loss, urbanization and security of

food systems, amongst other sustainability issues, are considered wicked issues that society has to face (Grin, Hassink, Karadzic & Moors, 2018). A fundamental part of the challenge is that the environment is being affected and is deteriorating, indicating that the present rate of change is unsustainable. These sustainability challenges that are underpinned by the interactions between environmental, economic and social issues (Nicholson & Kurucz, 2019) are transforming natural systems at an alarming rate (Kurucz, *et al.*, 2017). Efforts and interventions to address the issues have been varied, with different levels of success. Within the interactions between the environment, economic and social issues lie the challenge to adequately capture the value of nature as a means to attain sustainability.

Numerous authors have expressed that these global issues, which have cross-cutting implications for sustainability, have increasing challenges and opportunities for leadership (Grin *et al.*, 2018; Hitt *et al.*, 2010; Kurucz *et al.*, 2017; Nicholson & Kurucz, 2019; Uhl-Bien & Arena, 2017). Individuals, and people in society who are considered leaders by virtue of their positions and power, need to understand how to lead when faced with these complex problems (Uhl-Bien & Arena, 2017). Others had to adapt accordingly, challenging the status quo to find new ways to address the issues (Grin *et al.*, 2018). Public and private sectors were reacting differently to the upcoming challenges, with usual business operations no longer suitable, whilst the calls for joint and collaborative action were many and on the increase (Leach *et al.*, 2019; Nicholson & Kurucz, 2019; WEF, 2020). The joint call for action raises the question of how the present leadership would address the collective call for action, as it would require a shift from traditional hierarchical responses from leaders to collaborative ways of reacting. Oral (2019) argues that the expectations on leadership to address complex global issues have implications for how leadership is studied, the practice of leadership and the contributions to leadership theory going forward.

2.1.1.1 Leadership research

Fairhurst and Uhl-Bien (2012) argue that leadership scholarship is focused predominantly on hierarchical top-down structures, where the emphasis is still on

people and organisations being led by certain individuals, often called leaders. The methodology for studying leadership needed to be changed due to the increasing complexity of leadership, from studying individuals to studying the socially constructed multi-level processes within leadership (Stentz *et al.*, 2012). Dionne *et al.* (2014) argue that leadership research at multiple levels improves the effectiveness of organisations.

Blom and Alvesson (2015) claim that this shift in research is not necessarily going to increase the knowledge base and improve leadership practice. Cullen-Lester and Yammarino (2016) claim that research on the network and collective aspects of leadership are advancing to improve understanding of its theoretical contributions. Oral (2019) concurs that there is a change in leadership scholarship from methodology to epistemology, with a greater focus on complex and sophisticated matters.

2.1.1.2 *The practice of leadership*

Present-day challenges, as articulated above, would require a different approach from leadership. Raelin (2016) argues that a divide exists between leadership theory and practice, where leadership practice does not take place as a result of the actions and instructions of so-called named leaders, but rather as a consequence of the actions of multiple actors that think, talk, act, fight, and play together, based on reality of the context, their own craftsmanship and their willingness to do so. This particular school of thought has underpinned the origins of theoretical models of distributed, shared, complexity and relational leadership, amongst others, where the emphasis is on multiple actors interacting together to go about their routine tasks and activities. Alvesson and Sveningsson (2003) speak of leadership not really manifesting itself; whilst not completely discounting the existence of leadership, they argue that leadership could be comprehensive enough and cover all elements or it can be nothing at all. Kelly (2013) reiterates an ontology of leadership where leadership as a relational and socially constructed phenomenon is diffused amongst routine daily activities of individuals or groups of people achieving their work activities. The practice of leadership has not been adequately researched. The focus of scholarship has been on researching

individuals for their perspectives on leadership and not necessarily focusing on whether or not leadership was actually relevant, but the findings of such research have subsequently informed the present leadership models, frameworks and theories (Alvesson & Sveningsson, 2003). Oral (2019) argues that a plethora of definitions, frameworks and theories exist from contemporary leadership research.

2.1.1.3 Leadership theory

Oral (2019) highlights the challenges with developing leadership theories where existing fundamental theories were found to be limited because of the lack of integration between the various elements, based on its context-sensitive nature and uncertainty associated with these models. Latham (2017) argues that the increased amount of divergence amongst the number of frameworks, theories, limited definitions and the dissociation from context has made the transition from theory to practice difficult. Leadership theories and models are discussed later in the chapter. However, a number of new frameworks and models, including an output from the current research, aim to synergise and address gaps towards a regular process of refinement.

Complex global issues of today have therefore challenged the phenomenon of leadership. Nicholson & Kurucz (2019) argue that sustainability issues, which are underpinned by the environmental, social and the economic factors, provide a suitable platform to explore how leadership would address these issues. Within leadership, sustainability issues have catalysed certain elements of leadership which subsequently provides a context for the leadership research agenda. Kurucz *et al.* (2017) reiterate that leadership in sustainability matters has not been sufficiently researched. Because of this gap in the literature, the full potential of leadership in sustainability issues, such as the contributions to conservation science, have not been explored enough, contributing very little to sustainability of people and nature (Manolis *et al.*, 2008). The interactions between people and the environment have subsequently triggered a call for research on the ethical dimensions of leadership in sustainability issues (DesJardins, 2016). More information on the social dimensions is needed to improve our understanding of sustainability (Broman & Robert, 2015).

2.2 LEADERSHIP AS A SOCIALLY CONSTRUCTED PHENOMENON

Leadership is described as some sort of phenomenon where the underpinning reality is not fully known, understood or in any way complete (Oral, 2019). As a phenomenon of some sorts, there are often a number of assumptions that relate to the way reality is perceived. The key elements that shape the reality include the epistemological ontological, axiological, and methodological considerations and these elements are important for any evolving concept (McNamee & Hosking, 2012; Mertens, 2005). These elements interact with each other to shape the reality. Ontology, which is the theory of whether or not something exists (Bullock & Trombley, 1999:609), informs the epistemology, which is described as where and how knowledge is created (Bullock & Trombley, 1999:279). The epistemology is therefore underpinned by the methodological choices which are reaffirmed by the necessary ethical underpinnings. The way the reality is shaped around an evolving concept such as leadership implies that leadership is constructed socially emerging as a multidimensional, multi-level, complex phenomenon (Martin & Halsall, 2017).

One of the most significant developments emerging from the numerous theories of leadership is the notion that leadership is a phenomenon that is constructed socially (Spoelstra, 2013). It is a phenomenon that is not necessarily shaped by individuals but involves processes that are relational (DeRue, 2011; Nicholson & Kurucz, 2019; Uhl-Bien, 2011). This movement or phenomenon is multidimensional, having not only theoretical underpinnings but also pragmatic implications (Dinh & Lord, 2012). Vivier (2019) claims that there is growing scholarship for gaining a better understanding of the various elements of how leadership is constructed within a context-sensitive situation, where the different relationships unfold to implement and practise leadership. With a deeper understanding of the various elements of this construction process, leadership can be interpreted and theorised as being a collective or relational process where it is shared or distributed amongst the actors (Carroll, Levy & Richmond, 2008:336). Sharing implies that two or more actors interact to influence others (Bergman, Rentsch, Small, Davenport & Bergman, 2012). The notion of distribution is similar

to sharing where the functions, roles and responsibilities are shared (Cannatelli, Smith, Giudici, Jones & Conger, 2017). Collective approaches in practice refer to actors functioning as networks (Scott, Jiang, Wildman & Griffith, 2018). McNamee and Hosking (2012) argue that everything is relational and that various processes interact to highlight the relational dynamics within these processes.

Osborn, Uhl-Bien and Milosevic (2014) highlight the significant impact of contextual factors on leadership itself and its subsequent effectiveness. Bryman, Stephens and à Campo (1996) reiterate the significant effect of contextual impact on leadership effectiveness. Context is not just a passive factor on the periphery of leadership, but rather an embedded constituent of leadership (Bryman *et al.*, 1996; Fairhurst & Grant, 2010; Haricharan, 2015; VanVactor, 2012). Martin and Halsall (2017) reaffirm the constitutional elements of context that have resulted from the shift in focus on individuals to how individuals interact within a specific situation. Tourish (2014) argues that the interactions between various actors leads to influence that is mutually beneficial whilst fuelling the emergence of leadership through a socially constructed process. Getha-Taylor, Holmes, Jacobson, Morse and Sowa (2011) argue that leaders, by virtue of their physical and visual presence within top-down structures, are able to act as catalysts for collective and collaborative leadership. Approaching leadership from a social constructionist perspective illuminates the dynamics of how collaboration takes place (VanVactor, 2012). These social construction processes within leadership imply that interacting individuals are exercising their influence on others, producing a particular outcome; however, this creates the impression that both leaders and followers constitute leadership (De Klerk, 2019; Uhl-Bien *et al.*, 2014). Meindl (1995) highlights views that focus on the followers in relation to the interactions with the leader. Chen *et al.* (in Shamir, Pillai, Bligh & Uhl-Bien, 2007) argue that leadership theories have been dominated by perspectives on the leader, with limited focus on the follower.

2.2.1 The ontology of leadership

Leadership, which has become a discipline of considerable interest, requires a solid ontological foundation in order to accomplish the desired impact in society

(Oral, 2019). Exploring a definition of leadership is, however, considered an ineffective undertaking as there are numerous descriptions and definitions of what leadership is and what it is not and whether it exists or not (Bass, 1990; Stogdill, 1974). Despite the interests from multidisciplinary scholars and practitioners, the definition of leadership is complex and in a state of constant flux. Leadership is not only about the interactions and relations between people, but it includes the interaction between people in pursuit of a common objective. Bennis (2007) argues that leadership is deeply rooted in relationships such that in its most basic form it is a tripod of inter-dependent interactions between the leader, follower and the pursuit of common goals, as illustrated in Figure 2.1.



Figure 2.1: Tripod of leadership (TOL) (Adapted from Bennis, 2007)

The Bennis tripod view of leadership is focused on the collective, where the leader is assisting the group or team to succeed in attaining a common objective. Jones and York (2016) argue that the leader is not a superior being nor a self-proclaimed hero.

Bryman *et al* (1996) concur with the notion that leadership is defined as relationships that are framed by context and a specific point in time.

Kelly (2013) argues that leadership research has emphasised the study of various character traits and real-life realities of heroic persons that have informed the interactions between leaders and followers. Blom and Alvesson (2015) concur that the comprehensive scope of leadership is problematic for academic pursuit. Day and Antonakis (2012) argue that the notion of influence appears to surface in many definitions of leadership. Kort (2005) relates that a common feature in the literature is the aspect of power or influence of the leader that is exercised over the followers. Bass (1990) suggests that one of the outcomes of leadership is the achievement of effecting change. Vivier (2019) and Crevani *et al.* (2010) claim that the different expressions of leadership are likely to transform across contexts and change with time.

Because of the dynamic nature of leadership and the numerous definitions that have provided limited guidance on the scope of leadership, many scholars have questioned the presence and absence of leadership and its relevance in numerous social construction processes (Bass, 1990; Blom & Alvesson, 2015; Crevani *et al.*, 2010; Kelly, 2013; Oral, 2019; Vivier, 2019).

Crevani *et al.* (2010) argue that as the phenomenon of leadership moves from a focus on individuals and static contexts to an emphasis on the ongoing social currents involving a number of interacting elements, more work is needed on understanding the process. It can be argued that individuals and static scenarios may, however, be the only proxies for researching leadership and improving our understanding of the phenomenon (Kelly, 2013).

The scope of leadership was therefore expanding to include the social relational processes between the followers and leaders, within teams and other social cohesive groupings where leadership was being constructed, producing the necessary desired outcomes (Vivier, 2019). Crevani *et al.* (2010) argue that there was a shift in focus towards the cultural context where the social relational dynamics within groups which included the leader as an integral part of the group, were given prominence. Vivier (2019) highlights the importance of context, where the interactions and communication between systems, structures and relations were important for the practice and construction of leadership. The tripod ontology

by Bennis (2007), although a significant development within leadership theory, was found to be limited for the expanding scope of leadership, where the focus was discretely on the leader, follower and common goals in that sequential order of importance, with little room for integration (Crevani *et al.*, 2010; Oral, 2019).

To this effect, to address some of the inadequacies of the tripod, the Direction, Alignment and Commitment (DAC model) was developed in a response to replace the tripod (Drath *et al.*, 2008). Drath *et al.* (2008) argue that with new emerging developments, such as complexity, relational and shared leadership theories, the DAC model, with an emphasis on the common goals or outcomes, would serve as an integrative ontology for leadership (Figure 2.2).

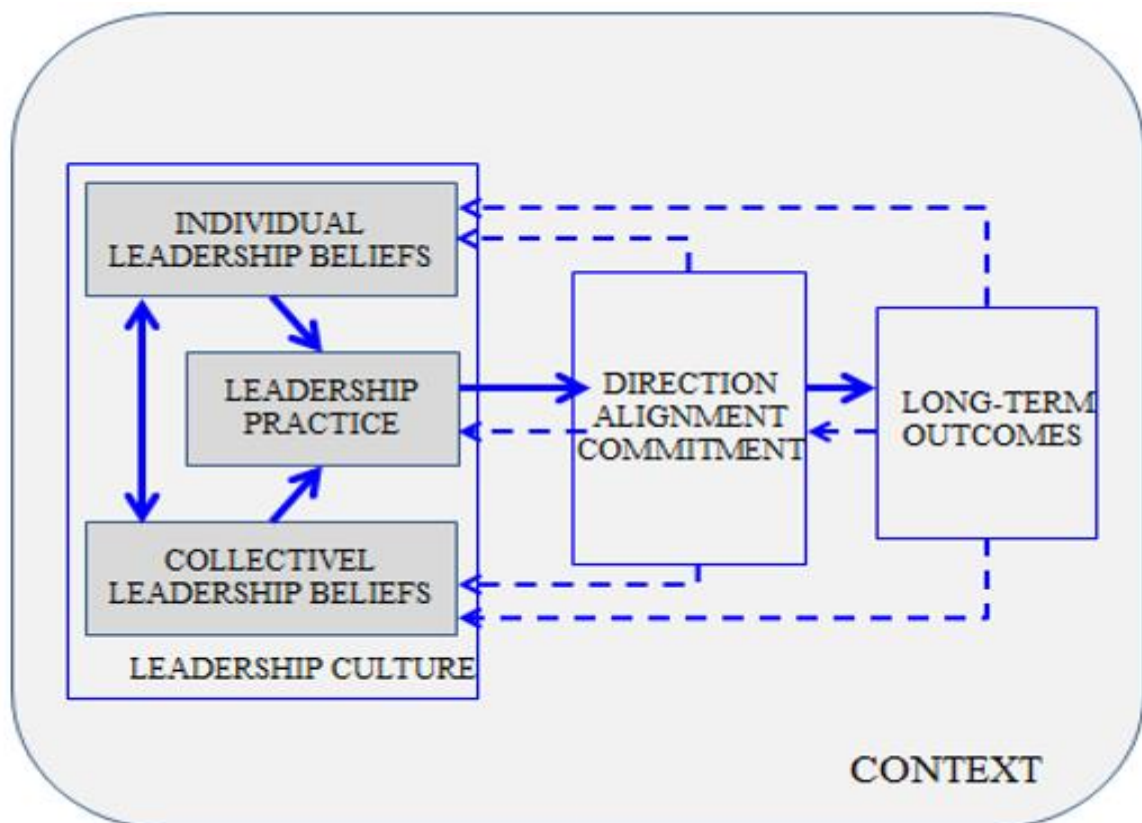


Figure 2.2: Direction, Alignment, Commitment (DAC Model) (Adapted from Drath *et al.*, 2008)

The expected outcomes on the DAC model were:

1. Direction: broad consensus within the collective on overall goals, objectives aims, vision and mission;

2. Alignment: the arrangement, planning and coordination of knowledge and evidence work within a collective; and
3. Commitment: the willingness of members of a collective to align and combine own interests with that of the collective.

The expectations on the DAC model have resonated well with the imperatives of both the public sector and with leadership researchers and officials, for them to better understand the role and responsibilities of leadership in the public sector to collaborate effectively to produce shared goals, align practices across organisations, and sustain commitment (Vivier, 2019).

Crevani *et al.* (2010) raise concerns on the DAC model:

- The first is that the emphasis of the DAC model is on the outcomes as a means to serve as a key integrative mechanism, which is challenging from an ontological perspective, as outcomes represent conclusive processes whilst the social construction processes of leadership have been found to be ongoing and continuous.
- Secondly, the DAC model was developed as a mechanism to substitute or supersede the tripod model rather than having an objective or aim of its own from inception.
- Thirdly and similar to the first concern, is that the DAC model may focus only on successful outcomes of leadership emergence and practice, whilst disregarding divergent leadership practices where leadership did not manifest itself or emerged with negative consequences. The DAC model's most redeeming feature is its conclusive nature, which implies that there is an end to the leadership process, whereas the narrative on leadership is ongoing and continuous.

The DAC model was developed in 2008 and the authors Crevani, Lindgren and Packendorff (2010) raised concerns about the implementation and use of the DAC model in 2010 after two years of its existence. The author Oral (2018) reiterated the other authors' concerns 8 years later, about theorising leadership outcomes using existing models. The DAC ontology may therefore be limited in addressing the evolving nature of leadership. The numerous leadership theories that have

emerged may therefore warrant an alternative to the current ontological underpinnings for a more integrated ontology.

To this effect, Oral (2019) proposes an alternative leadership ontology in a similar way as did the DAC ontology that superseded the tripod ontology.

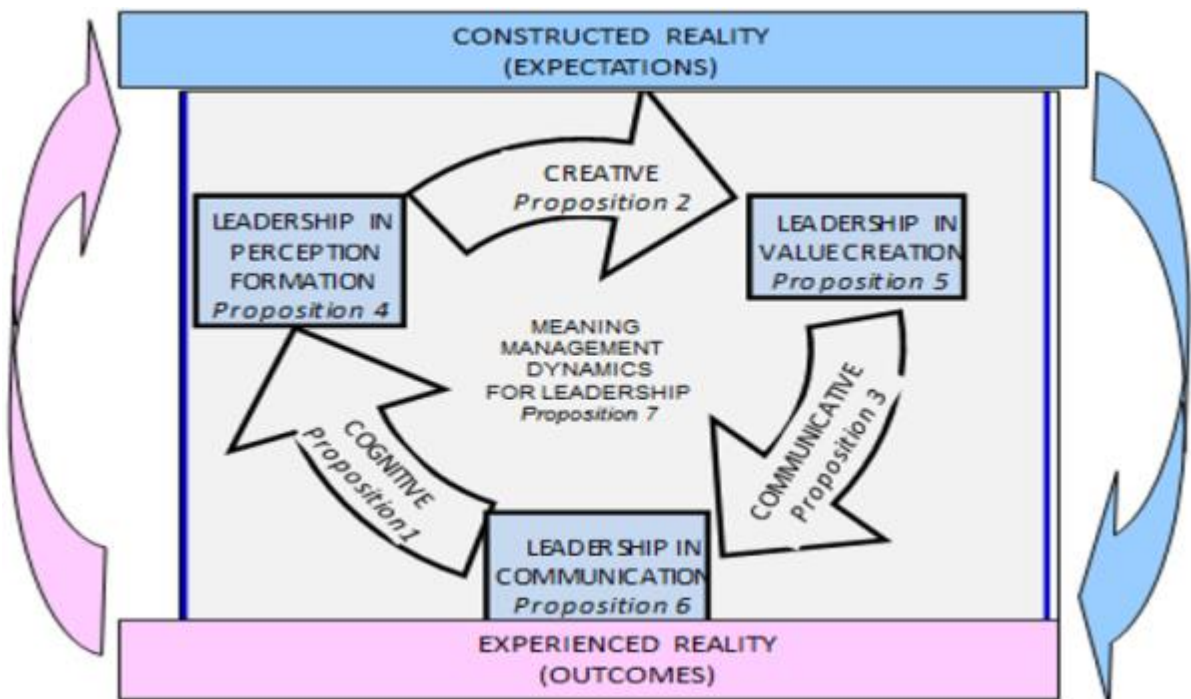


Figure 2.3: Leadership ontology PVA (perception formation – value creation – achievement realization) (Adapted from Oral, 2019)

PVA introduces an alternative theory called meaning management. PVA can be defined as managing an organisation’s ongoing interactions, taking into consideration both the external and internal factors that affect or influence the organisation. This is achieved through three steps:

1. Perception formation: Reality is assessed, scoping the issues that affect both the management and organisation. This is called the cognitive function.
2. Creation of value: Products are developed and services rendered to the stakeholders. This is called the creative function.
3. Communication: The value created in step 2 is integrated into the value proposition of the organisation for elevated levels of achievement. This is called the communicative function.

The arrows in Figure 2.3 indicate that the process is continuous and ongoing with the three functions interacting with each other, allowing graduation to the next level so that achievement is constantly optimised. The three steps are further given effect through the processes of sensemaking, sensegiving, and sensepractising:

- The cognitive function relies on sensemaking to reconcile the expectations from the constructed reality with the outcomes from the experienced reality.
- The creative function relies on all three processes of sensegiving, sensemaking and sensepractising for the value creation process to produce knowledge that would allow for optimal functioning of the organisation.
- The communicative function relies on the sensegiving process to acknowledge the value added and to optimise the levels of achievement.

The PVA outcomes link leadership theory to practice through the three processes of sensemaking, sensegiving, and sensepractising through seven (7) minor propositions.

Oral (2019) argues that PVA may appear to be similar to the DAC model, but it is different from the DAC model in that DAC is essentially at a conceptual stage, whilst PVA is designed in such a way to advance theory to practice. PVA is, however, a new ontological model that is advanced and promoted by its creator. Its impact as an 'epistemology-laden ontology' of leadership is yet to be tested and evaluated. Further, the diverging processes of leadership could be problematic when researching the notion of co-creation in relational leadership. The notion of co-creation in this context is indistinguishable. Lock (in Oral, 2019) argues that leadership models that integrate a mixture of both bottom-up, top-down and models of shared leadership may be more effective as an integrated ontological model for leadership. The current research developed a co-creation model with modest recommendations to complement the PVA model and provide a basis for future development of integrated ontologies for leadership (Figure 2.4).

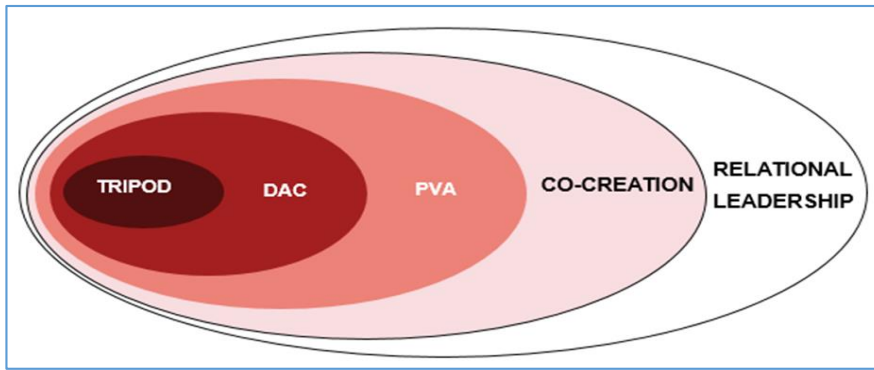


Figure 2.4: Leadership ontologies and their inter-connections

2.2.2 A historical overview of leadership theories

The concept of leadership is an area of immense ambiguity, because there has been very little agreement on what leadership really is and what it entails (Martin & Halsall, 2017). Definitions have also been diverse and varied, with many different perspectives, theories and styles of leadership emerging through time (Khan, Nawaz & Khan, 2016). Because of this complexity, studying and researching leadership has become an area of considerable interests (Stentz *et al.*, 2012). Over the years, several researchers have provided some insights on the progress of leadership as a research discipline (Bass, 1990).

An initial starting point would be to categorise the evolution of the phenomenon into different historical periods. Three historical periods have been identified. This includes the Classical leadership period, the Renaissance period and the Modern leadership period (Bryman, 2011). There is a significant body of knowledge on the Modern leadership period, but very little on the Classical and Renaissance periods. However, earlier accounts point towards political leadership and war that may have shaped leadership during these times. That is not to imply that leadership has its origins stemming from war, but because there are limited accounts of leadership available during these times; political leadership would have informed leadership development. Military strategy, knowledge development through training, and public rhetoric were the highlights during the Classical period. The Renaissance period has been described as a period where vicious acts of immorality were frequent for the greater good of humanity. This notion can be extended to imply that leaders need to be ruthless whilst at other times they

need to be more collaborative. The challenge is to know what constitutes the greater good for society. The Modern leadership period provides the foundations of the present-day leadership theories. This period coincided with the industrial age where there was a shift from great men conceptions or heroic individuals to rational systems and structures that had to cater for the growing industrial needs. With the rising costs of the industrial age and the onset of the Great Depression, attention shifted to cost reduction and in parallel, a shift to individuals who had the knowledge to deal with economics. When the economic boom returned in the late 19th century, the onset of the economic models that we have today emerged to define and shape leadership.

Several authors have over time attempted to categorise the different leadership historical periods, theories, styles and domains within leadership development that have led to different categories and terminologies being used in order to make sense of the history of the phenomenon (Bass, 1990; Bryman, 2011; Khan *et al.*, 2016;). Khan *et al.* (2016) argue that in order to get a better understanding of the plethora of terms and categories, a simple reflection of leadership theories that give rise to leadership styles would suffice.

a. Great-Man theory and trait theory

Great-Man theory arose during the Personality era (1841-1927) when men born with heroic personalities and traits were destined to become leaders. Dobbins and Platz (1986) made the differentiation between individuals that were eventful versus the event-making individuals, where the eventful individuals did not have a historical impact whilst the event-making ones did. The period quickly moved from a focus on being born with these traits to possessing specific character traits that separated individuals from the non-leaders. Stogdill (1974) argued that the trait theory did not adequately differentiate whether or not these identified traits were hereditary, which eventually led to the trait theory falling into disrepute.

b. Contingency theories (situational)

The period 1943-1978, the so-called situation period, saw leadership scholars looking at factors other than traits and personalities where the dynamics of

external and internal factors, including the leader-subordinate relationships, challenged the way leaders operated. The outcome of the contingency theory is to align the origin of leadership with certain aspects of the situation. This led to contingency theorists developing what we know today as group dynamics and leadership. The contingency theory claims that leaders are able to interpret their specific local context and then act accordingly. Bass and Avolio (1997) argue that the leader-subordinate relationship determines the leadership styles.

c. Style and behaviour theory

This theory draws attention to leadership skills and experience where each individual has their own unique style with which they are most familiar. Feidler and House (1994) argue that the interaction between people and their surrounding structures are important variables that are determined by behaviour within relationships and behaviour within the necessary roles and responsibilities.

d. Process leadership theory

Greenleaf (1996) introduces the notion of servant leadership which focuses on the needs of the followers. It aims to empower the follower to be free, independent and knowledgeable. These process-oriented leadership theories, including others such as charismatic leadership, principal-centred leadership and learning environments, aim to please others, ensuring their happiness, well-being and that their moral and ethical needs are addressed (Yammarino, 1999).

e. Transactional theory

By virtue of its term transactional, this theory activated the move from specific aspects of the leader and follower to a greater focus on the exchanges between the two that are based on a number of agreements (House & Shamir, 1993). This theory is based on a reward system between the leader and follower, where the leader influences the follower but is also influenced in the process (Bass & Avolio, 1994).

f. Transformational theory

Leadership, being a socially constructed process, distinguishes transformational theory from the others, through a greater emphasis on the social needs of the followers, where the social dividends are common and widely practised. Transformational leadership, which emerged during the period 1977 to 1989, is one of the contemporary leadership practices that are expected to bring about transformative change through identifying the needs within society, building consensus and creating a vision that would ensure that change is deeply embedded (McGregor, 2003). Engagement between the leader and the follower is guided by the beliefs, values, goals and aspirations of the follower and the leader. The scholarship seems to suggest that personal agendas are put aside for grander goals of the collective (House & Aditya, 1997).

This historical overview of traditional or conventional leadership theories and styles, which have been characterised by conventional or industrial traits, was relevant as it improved our understanding of the emergence of contemporary leadership theories and styles of today that have become increasingly relational, collaborative, authentic and reciprocal in nature (Komives & Dugan, 2010). Contemporary leadership traits which describe and define contemporary leadership theories and styles served as a departure from traditional and/or conventional traits (Figure 2.5).

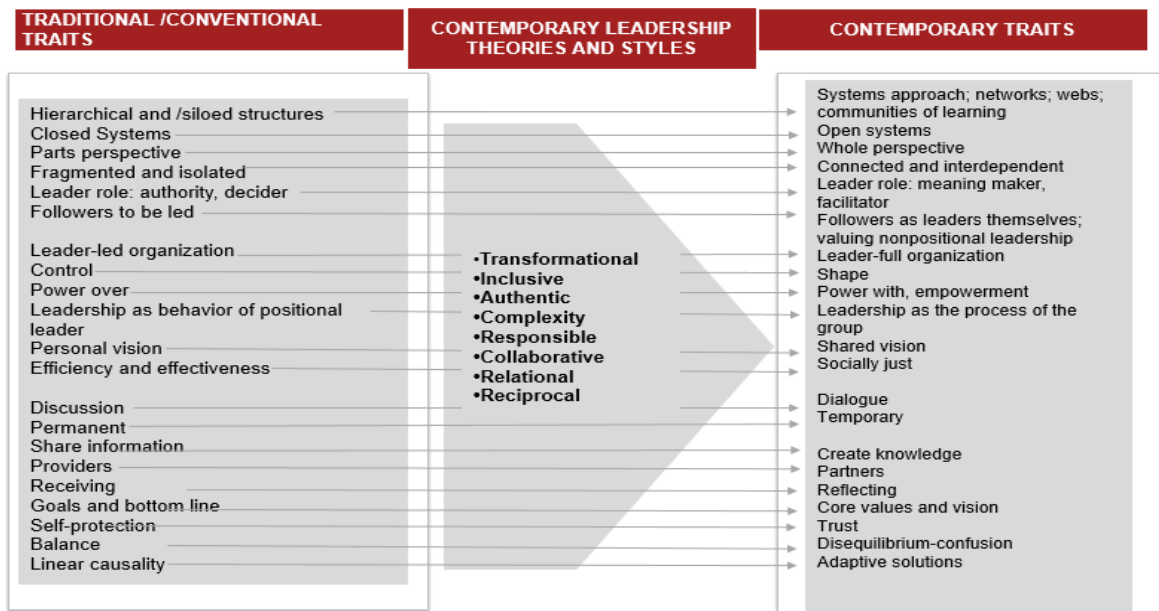


Figure 2.5: Distinction between traditional and contemporary leadership paradigms (Adapted from Komives & Dugan, 2010).

2.2.3 Leadership styles and behaviour

The numerous leadership theories that have had a passage of time have informed a number of leadership styles and behaviour (Day, 2012). The practice of leadership is when one or more individuals are able to mould and shape the reality of others (Raelin, 2016). House and Mitchell (1974) claim that behavioural styles need to be aligned with the related contextual factors in order to optimise desired outcomes. Alvesson and Sveningsson (2003) identified a number of different leadership styles emerging from the leadership theories. Many of the theories have highlighted the notion of charisma in the leadership styles that have been adopted by actors (Bass, 2008; Mumford, Antes, Caughron & Friedrich, 2008). One redeeming quality of charismatic leaders is where people take charge and control their own destiny on topics that are ambiguous and not really fully understood. Shamir *et al.* (2007) argue that there should be a shift from the leader to the follower to harness the follower perspectives on charisma. There are many factors, such as context and socio organisation, that determine charisma in leaders. Charisma has been found to be a dominant factor in transformational leadership, and together they are perceived as outstanding leadership. There are, however, differences between charismatic and transformational leadership and

they share common traits such as shared vision, shared communication, delivery and collaborative engagement (Bass, 1990; Shamir, House & Arthur, 1993).

It has also emerged that what is termed outstanding leadership has come about as a result of ideological and pragmatic leadership (Mumford *et al.*, 2008). There is an emphasis on goals similar to charismatic leaders but there is no attempt to develop systems around future aspirations. However, goals that have been tried and tested in the past resonate better with ideological leaders. Similarly, they engage with followers that internalise values and goals according to some kind of prescriptive mental model. Subsequently, they are not attuned to the masses but rather seek a group of followers that think similarly (Mumford, 2006).

In comparison, pragmatic leaders, do not emphasise goals, rather the goals are determined by the situation that they find themselves in. The mental models adopted by pragmatic leaders are situation specific (Mumford & Van Doorn, 2001). Hence, for pragmatic leaders, a certain event or happening involves interactions with people and context-specific factors that are subject to a certain level of control determined by the situation itself.

Bass (1985) and Burns (1979) highlight the application of transformational and transactional leadership styles which are context-sensitive, varying from one context to the next. Bass (1985) argues that transformational leadership is different to other leadership styles. Transactional leadership is determined by three factors, namely management that is considered exceptional, which merely entails just achieving what is required without any inspiration, management that is absent, where no goals or guidance is provided, and contingent reward, which comprises good management and achieving positive outcomes. Different aspects of these three factors may constitute either transformational or transactional leadership styles. However, the difference between these two leadership styles is stark, considering that the relationships between leader and follower are considered contractual for transactional leadership, and for transformational leadership it is considered a social relationship, where the aspirations of the followers are elevated to the level of the Leader (Bass, 1990). Transformational leadership is considered inspirational with strong future visions.

Another type of leadership that is becoming more prominent is inclusive leadership, where leaders express a freeness, availability and accessibility when they engage with their employees (Nembhard & Edmondson, 2006). A participative approach and transparent behaviour is evident within this type of leadership (Ye, Wang & Guo, 2019). This type of approach sends clear messages to actors that innovation is needed and valued (Hollander, 2009). Relative to transformational leadership, inclusive leadership may be more rewarding and conducive to teamwork and innovation.

Authentic leadership is a growing area of work because of the increase in the number of ethical issues that need to be addressed in society. There is a significant amount of scholarship on authentic leadership (Algera & Lips-Wiersma, 2012; Avolio & Gardner, 2005; Hofman, 2008; Luthans & Avolio, 2003). Authentic leadership is seen as a moral instrument (Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008) that allows organisations to fight ethical debates (Cooper, Scandura & Schriesheim, 2005), whilst in a proactive manner it encourages companies to conduct business in an ethical manner (May, Hodges, Chan & Avolio, 2003). There is significant value in ethical practices as it allows a better connection between people and their work, improving the overall well-being of all its members (Avolio & Gardner, 2005; Nicholson & Kurucz, 2019).

Authenticity is a complex undertaking including the emotional and psychological considerations; however, it is constantly being expanded to include not only the authenticity of the leader but of the collective as a whole and hence its relevance is growing as a relational concept (Algera & Lips-Wiersma, 2012).

Complexity leadership is another process leadership theory (Marion & Uhl-Bien, 2001; Uhl-Bien *et al.*, 2007) that is gaining momentum because of the emerging complexity of the multidimensionality of global issues (Oral, 2019). The three types of leadership, enabling, entrepreneurial and operational, that are needed for adaptability are highlighted within complexity leadership (Uhl-Bien & Arena, 2017). Operational leadership refers to the exploitation of both systems, structures, processes, ideas and people interacting to allow for the production of outcomes.

The exploration of innovative new ideas, growth and learning constitutes entrepreneurial leadership. Enabling leadership is a contemporary type of leadership, coming from complexity thinking, which provides the ongoing space for adaptation where both entrepreneurial and operational leadership are enacted, allowing for greater agility and flexibility of organisations when dealing with complexity. Complexity leadership theory requires a holistic leadership style that can deal with complexity and the subsequent emerging uncertainty (Oral, 2019).

A leadership literature review conducted in the early parts of the twentieth century indicates that accountability and responsibility issues in leadership were not taken into account. Given the infancy of the responsibility style of leadership, limited scholarship is available (Groves & LaRocca, 2011; Maak & Pless, 2006; Stahl & De Luque, 2014; Voegtlin, 2011; Waldman & Balven, 2015). Responsible leadership as a concept started to emerge in the literature in the early parts of the 21st century as a sub-theme of the corporate social responsibility theory and the stakeholder theory movement (Groves & LaRocca, 2011; Waldman & Balven, 2015). Issues of responsibility and accountability are critically relevant during present-day social, environmental and political uprising, which corporate leaders need to address frequently. Maak and Pless (2006) attempt to put forward a definition of responsible leadership as an ethical and relational phenomenon in which social interactions inform the vision and objectives for relational leadership. There is a linkage with this definition and the responsible leadership style with other styles, including the shared, transformational and ethical leadership. Maak and Pless (2006) argue that a fundamental responsibility of leaders, in addition to setting the vision, is to manage the meaning-making process, thereby putting the responsible leader in a position of accountability. It is further suggested that responsible leadership development takes place on the ground, thereby allowing leaders to develop experience and improve their relational and emotional intelligence.

Various choices exist for the responsible leader, including operational and visionary positions, such as that of a change agent, a storyteller, coach, visionary, networker and architect (Maak & Pless, 2006). Waldman and Galvin (2008) argue that the concept of values is supported, as it underpins the interests and needs of

many people who are affected by the decisions, choices and actions of the leader. Kort (2005) reiterates the importance of the ethical considerations of leadership. Mirvis, De Jongh, Googins, Quinn and Van Velsor (2010) describe responsible leadership as an interactive function of the individual leader, namely the “me”, the responsible organisation, namely the “we”, and the context within which the “me” and the “we” interact, namely the “us”. Nicholson and Kurucz (2019) confirm the notion of the responsible leader being empowered with the necessary skills, thereby ensuring value added to the collective. The responsible leader engaging in stakeholder consultation adds value for the growth and well-being of all the actors (Maak & Pless, 2006). It can therefore be argued that in responsible leadership, the emphasis is on balancing rather than integrating the needs of the stakeholders and the leaders and in this way long-term sustainability, which is the desired goal, is targeted. Voegtlin, Frisch, Walther and Schwab (2019) highlight that responsible leadership has evolved to integrate the different stakeholders’ concerns, perceptions, perspectives, needs and interests with sufficient reference to stakeholder theory. Waldman and Galvin (2008) reiterate the long-term sustainability of responsible leadership where both the stakeholder and economic perspectives are considered. Mirvis *et al.* (2010) highlight four areas for developing skills to lead a responsible business to sustainability: self-leadership, shared leadership, enterprise leadership, and ecological leadership, where the focus is on key attributes such as wisdom, integrity, courage, reflection and inclusion, as well as character traits of charisma, emotion, intellect, vision and values.

Self and shared leadership is emerging as a mechanism to deal with global 21st century challenges (Pearce & Manz, 2005). Erhard *et al.* (2013) argue that self-leadership has its earliest beginnings when ontologia first expressed itself. During the ‘great man’ era, individuals proclaimed their superiority either through heritage or being born with the necessary traits, and they assumed positions of power and leadership. Self-leadership is making its re-entry into society, where individuals are able to innovate and lead themselves (Eliason, 2013). Bergman *et al.* (2012) describe shared leadership as an event where two or more members of a team interact to support and influence other members of the team to ensure optimal effectiveness. This implies that many individuals take on a leadership role where

they interact with each other, building greater trust, consensus and social cohesion with less room for any conflict. When operating as such within a shared leadership context, team members are able to self-assess (Pearce, Yoo & Alavi, 2004), reach an acceptable level of satisfaction (Avolio, Jung, Murry & Sivasubramaniam, 1996), whilst at the same time objectively rating their overall team's performance (Mehra, Smith, Dixon & Robertson, 2006). This implies that the shared leader would need to adapt or learn how to function in a dynamic context. Mirvis *et al.* (2010) argue that leaders would be more effective by promoting, harnessing group dynamics and actively listening than directing, speaking at or persuading. Oral (2019) argues that existing leadership models are silent when it comes to dealing with the external and internal dynamics and needs of the process of sharing. Houghton, Neck and Krishnakumar (2016) propose a model where group level performance and caring is increased through psychological enrichment and group cohesion. Several studies have demonstrated that shared leadership yielded positive results, as opposed to top-down, hierarchical leadership.

Mirvis *et al.* (2010) introduce the concept of enterprise leadership, where top-down hierarchical structures are being substituted for flat, collaborative, lateral, multi-cultural, multi-generational workforce structures where skills of innovation, meaning-making and pattern recognition are desired.

Public and private sectors are underpinned by different direct and indirect drivers. As such, they may require different leadership approaches (Haricharan, 2015). Leadership in the public sector can therefore be categorised into political, administrative and collaborative leadership (Van Wart, 2013). Political leadership implies general elections and consequently majority party high-level appointments, whilst administrative leadership, commonly referred to as organisational management, entails public sector appointments through regular human resource management (Chapman, Getha-Taylor, Homes, Jacobson, Morse & Sowa, 2015; Lawler, 2008; Van Slyke & Alexander, 2006; Vogel & Masal, 2015). Collaborative leadership involves consultation and public engagement across all sectors, between public, private, non-governmental and civil society, including networks and cooperation agreements, amongst others (Van Wart, 2013:527; VanVactor, 2012). Other frameworks and emerging formal or semi-formal structures which

comprise a combination of all sectors to varying degrees, include city leadership models and place-based leadership models (Budd & Sancino, 2016; Vivier, 2019).

Looking forward to beyond the present, models of pro-social movements have been born, which are pro-active coalitions, sometimes voluntary and at other times ad hoc, where strong and forward thinking individuals coalesce to address emerging issues both as problem solvers and solution strategists (Mirvis *et al.*, 2010). Heeding the world-wide call for transformative change, and similar in nature to transformative leadership (Khan *et al.*, 2016), servant leadership has come about with a greater focus on the follower's growth and development, facilitated by leader qualities such as empathy, altruism, community stewardship and sense of ethics (Chiniara & Bentein, 2017; Liden, Wayne, Zhao & Henderson, 2008). The leader in servant leadership is perceived as a servant addressing the needs of the follower over and above his or her own needs (Khan *et al.*, 2016; Van Dierendonck, 2011). The core underpinning principle of servant leadership is that the leader exercises his or her influence to foster organisational outcomes through addressing the needs of the follower (Liden *et al.*, 2008). The impact of servant leadership is still to become evident, although some studies have shown positive outcomes on an individual level (Chiniara & Bentein, 2015; Liden *et al.*, 2008), but on a macro level its impact is yet to be discovered (Ehrhart, 2004; Hu & Liden, 2011; Liden, Wayne, Liao & Meuser, 2014).

With the rapid rise in globalisation, another leadership type that is increasing in relevance as the world faces increased complexity is global leadership. Having emerged in the 1990s, global leadership has emerged as a result of research and pragmatic contributions from multifaceted contexts, multifaceted communication ` goals and a common vision (Reiche, Bird, Mendenhall & Osland, 2016). Osland, Li and Mendenhall (2017) argue that global leadership has an impact on a wide variety of multicultural actors in contexts that are characterised by multiplicity and high levels of relationship complexity. The work of global leaders is dependent on experts who serve as change agents (Osland, Ehret & Ruiz, 2017). Key attributes of global leadership include high levels of complexity and ambiguity that relate to multiple contexts and relationships where the key factors include communication and emotion (Huesing & Ludema, in Osland *et al.*, 2017). However, in global

leadership, there appears to be a lack of consensus on what global really means for leadership and hence, more scholarship on global leadership can add to the leadership ontology (Bird & Mendenhall, 2016).

Most theorising frameworks, initiatives, tools and movements are developed to create a sustainable future for all. Underpinning these processes and the science that goes with it is the need to focus on human development, well-being and the ethics of care (Nicholson & Kurucz, 2019). These priorities allow for synergies between public and private sectors and go further in addressing not only human life, but biotic and abiotic elements of our biosphere.

2.3 LEADERSHIP AS A PROCESS

The chapter has presented leadership as a socially constructed phenomenon (Bass, 1990; Martin & Halsall, 2017; Meindl, 1995). Its evolving nature has been a discourse for many years, with attempts to define it and describe it effectively resulting in more divergence, but still it is an area of immense scholarly pursuit (Day, 2012).

Leadership is therefore considered a complex process that is socially constructed, comprising relationships that occur at multiple levels, and it is also a distinguishable process requiring a regular observation and recognition of its emergence, recognition and the acceptance of leadership in others and in one's self. Yammarino and Dansereau (2008) explain the multi-level dynamics of the leadership process, where interactions in dyads at multiple levels take place between leaders and followers as the individuals move through the different levels. Subsequently, an issue emerges as to how to reconcile the interactions between the dyads and inter-linkages, and it may result in division within the leadership process. The process of interaction is a mechanical one and may not be considered as leadership. Similarly, the tripod model is limited as it has a focus on the leader interacting with the follower in pursuit of the common goals, but without taking into consideration all other external and internal factors that the context may provide. The DAC model, which focuses on outputs, has its limitations when

addressing the continuous social flows of the leadership process as discussed in the previous section.

2.4 RELATIONAL LEADERSHIP

Relational theory is a conceptual model that underpins relational leadership, where the core element is meaning-making as an explicit purpose driven outcome, taking place within all facets of the burgeoning relationships that are formulated and re-formulated over time in a continuous flow through context (Dugan, 2017; Graen & Uhl-Bien, 1995; Komives, Lucas & McMahon, 2013; Murrell, 1997; Uhl-Bien, 2006). Uhl-Bien (2006) provides two frameworks for relational leadership:

- An entity approach that highlights the interpersonal interactions that are underpinned by key traits of individuals.
- A relational approach that describes leadership as a socially constructed process whereupon the outcomes are given precedence for theory.

These approaches interact together but their impact for both scholarship and practice are different. The theory for relational leadership, referred to as RLT, provided a holistic frame for the socially constructed process of leadership, where change informed by a number of key attributes interacted with dynamic social imperatives to produce outcomes. The two approaches are complementary and permeate RLT. Uhl-Bien (2006) argues that the entity and relational elements of relational leadership theory are able to coexist despite the tension created between the two elements. Dugan (2017) argues that the strength of the relational leadership model is this tension that allows for co-construction of leadership.

Positive outcomes are achieved when different systems of knowledge and other physical resources interact to facilitate power distribution (Crosby, 2010) that descales leadership as a bottom-up socially constructed process (Bass, 2008; Denis, Langlely & Sergi, 2012). DeRue and Ashford (2010) argue that the social construction process of leadership involves identity construction that is linked to the respective roles and responsibilities of the key interacting actors that are also based on a process of internalisation, relational recognition and collective endorsement. Internalisation involves a self-performed exercise, where individuals

absorb what is happening and internalise it, whilst relational recognition involves a process of relating personally to the role that respective people hold, for example mother, brother, daughter. The collective endorsement is a process where broader social recognition is required, for example from the local community or extended family. This demonstrates that relational leadership is a complex context-sensitive phenomenon (Fairhurst, 2007). As a result of these interactive engagements with the numerous actors, it is assumed that some level of co-production is taking place to produce tangible meaningful outcomes (Day, 2012).

During the late 1970s when there was a shift in focus from situational attributes of leadership theory and practice to relational attributes, another framework emerged, referred to as the Leader Member Exchange (LMX), which started to focus on behavioural theories as opposed to traits theory, which was left aside during that time in favour of an emphasis on relationships. Barling, Christie and Hopton (2011) argue that the quality of these relationships had a bearing on positive or negative organisational outcomes. Qualities of trust, loyalty, and mutual support between leader and follower were favoured, which yielded positive outcomes as opposed to qualities such as distrust, social, contractual obligations and negative influences which impacted negatively on the organisational outcomes. The LMX model, however, was unable to address the dimensional nature of the relationships based on the assumption that there would be depth to these models where achievement, growth and effectiveness were taking place (Dienesch & Liden, 1986).

Relational leadership has also been described as a mechanism to highlight the nuances of being and relating to each other. Gender-based issues were beginning to surface that have challenged the status quo in society. Nicholson and Kurucz (2019) argue that the theory was developed by feminist psychologists as a comprehensive mechanism to challenge stereotypes related to performance, exemplary behaviour and successful organisations. Hogue and Lord (2007) also reiterated that if gender-linked issues were not adequately taken into consideration, this would have real practical implications for organisations.

It has been found that through the context-sensitive nature of relational leadership theory, very strong ideas and concepts have emerged from the relational nature of relational leadership theory, linking the environment, leadership and the organisational issues (Fairhurst & Uhl-Bien, 2012). Fairhurst and Uhl-Bien, (2012) advocate for the use of organisational discourse analysis (ODA) to get more information on the relational nature of the phenomenon, as well as the contextual, language and communicative processes that influence and are associated with leadership where it was found that leadership was not just an isolated activity, but an activity where people were co-creating relationships as they engaged with each other.

Relational Knowledge Leadership (RKL) is another tool that has been designed to capture the spatial extent of relational leadership where leadership is not restricted to administrative or geographical boundaries (Horlings *et al.*, 2017). The tool allows for networking, a number of applications for ideas, methods and beliefs bring about what would be called spatial leadership. Sotarauta, Horlings and Liddle (2012) argue that the impact of the tool at a theoretical level is unknown, as is its application for knowledge management or its impact at finer spatial scales such as sub-national and local levels. RKL can be applied to co-creation as a tenet of leadership.

A place-based approach advocates for an organisational setting to be interpreted as a building or grounds where people live and interact and create history. Guthey, Whiteman and Elmes (2014) claim that this place-based approach works well at a local level, where social and environmental issues can be coordinated and addressed amongst different stakeholders. This place-based approach, because of its fluid or dynamic nature, raises concerns around how governance would operate (Imperial *et al.*, 2016).

Nicholson and Kurucz (2019) advocate strongly for welfare issues and concerns for well-being and the environment where leadership growth has a strong place-based approach. All parties are able to benefit from a “growth in connection” mechanism (Miller, 1976). Here the emphasis is on maintaining a quality of caring which is a benefit for everyone. The meaning of ‘value’ is also considered and

includes the contribution to present and future well-being, considering an integrative view of economic, societal, and environmental flourishing (Ehrenfeld & Hoffman, 2013).

Marchiondo *et al.* (2015) demonstrate how leadership is constructed socially through a mechanism which is influenced by the apparent competence of the team or collective. There may be many facets of relational leadership identity construction that strengthen the evidence base for leadership. For example, the identification and investigation of key belief systems of relational leadership identity construction may provide an improved understanding of what underpins leadership perceptions. The leader could be interested in competitiveness and could also embrace complexity, whilst also encouraging collective outcomes (Uhl-Bien *et al.*, 2007). Here, individuals with a relational belief system would promote joint growth, communication and development for collective benefits (Nicholson & Kurucz, 2019).

The role of emotion has been highlighted, where the particular leader may not want individuals to disclose their emotional state as it would impact on their work, or as an alternative, emotion could be allowed and the associated vulnerability promoted as part of the joint meaning-making processes and co-creation (Slote, 2007). Nicholson and Kurucz (2017) conclude by saying that adopting a dialogic ethic would allow for an emphasis on relational dialogue.

The issue of sustainability has attracted the attention of leaders in the global arena. Relational leadership has been earmarked as an important mechanism in sustainability for effecting actions across sectors, disciplines, and regions (Nicholson & Kurucz, 2019). Relational leadership for sustainability can be interpreted as an ongoing process of meaning-making and reflection within systems of the biosphere and society would allow for integration (of strategies, principles, and actions) to take place.

Furthermore, there is a growing understanding of the relevance of relational capabilities of leaders for 'reconstructing value' in addressing issues of global sustainability to include a focus on well-being, happiness, and sustainability as

legitimate aims and objectives of organisational value creation (Kurucz *et al.* 2017).

Relational leadership theory has been pitched as a useful approach for improving our understanding of the growing need for integration in sustainability research (Nicholson & Kurucz, 2019), and therefore provides a suitable overarching framework to explore the notion of co-creation in the relational dynamics of sustainability and the research agenda for this research. Subsequently, its expansion or evolution into the present day from being defined by individual to a more process-oriented phenomenon has echoed the call for more integrated theories that would allow a progressive understanding of the magnitude of this phenomenon (Oral, 2019).

In summary, key traits and attributes of relational leadership theory (RLT) have been highlighted. These key attributes of RLT emerge from extant literature, traditional leadership theories as well as attributes that have emerged from contemporary leadership theories and styles (see Figure 2.5). At the core of the RLT model is the explicit purpose trait which determines context, focussing on relationships or the relational dynamics of leadership as a socially constructed process (Dugan, 2017).

Uhl-Bien (2006) provides a framework for relational leadership theory where entity and relational attributes coexist, allowing groups to co-construct leadership, emphasising process, context, communication within relationships, and to a lesser degree, extent, as an area of future research, the role of emotions in relational processes. Fairhurst and Uhl-Bien (2012) reiterate the role of communicative processes within relational leadership theory. Nicholson and Kurucz (2019) have considered welfare issues, having developed an ethical framework based on relational leadership theory, where key attributes of context, communication and emotion have emerged. Kurucz *et al.* (2017) have emphasised the role of value creation in relational leadership. Dugan (2017) developed a relational leadership model which comprised the key attributes of relational leadership theory (Figure 2.6).

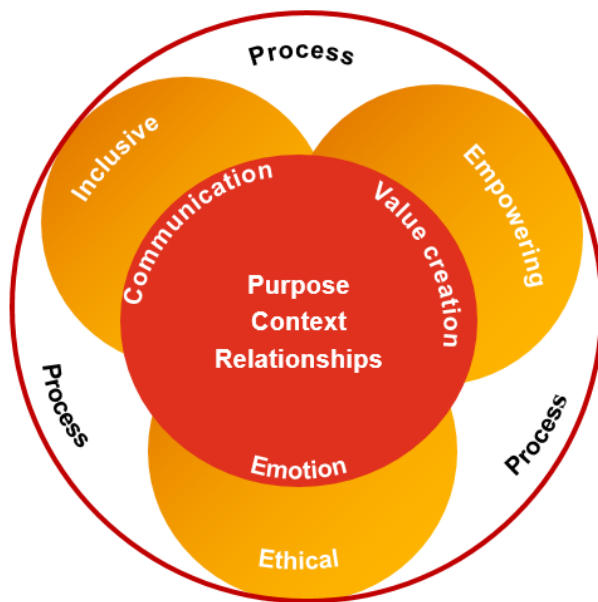


Figure 2.6: Relational leadership model (Adapted from Komives et al., 2013)

Five (5) core elements have emerged from the relational leadership model:

- Purpose: Commitments towards common goals and vision are effectively communicated and secured through collaborative and collective mechanisms.
- Inclusive: Key attributes of inclusiveness appear to emerge which include: engaging with complexity, considering diverse perspectives, recognising social identities, improving understanding, addressing equity and empathy, embracing interconnectedness, interdependency and a willingness to collaborate and include stakeholders.
- Empowering: Operates essentially at the entity level, establishing legitimacy of involvement through value added, efforts to increase involvement, power issues and the building of trust as a tangible outcome.
- Ethical: Allows for welfare, moral issues to surface which serve as standards for the group, guiding behaviour, and decision making.
- Process-oriented: Harnesses the strengths of how group collectives function to achieve meaning making through collaboration and continued cohesion.

These core elements of relational leadership theory allowed for the emergence of other related attributes, traits, themes and sub-themes, not only for relational

leadership theory, but for other relationship-centred leadership theories and philosophies.

2.4.1 Key themes emerging from relational leadership theory

The present research used relational leadership as a theoretical framework to investigate how leadership was co-created within the specific case context of NCA. Section 1.6.3 briefly described a process of overlaying the relevant dimensions of relational leadership theory with the common attributes of co-creation in order to determine and pre-define the key themes for the research. More on this process is discussed in Chapter 4. For ease of reference, the relational leadership model and the co-creation model were presented here (Figure 2.7).

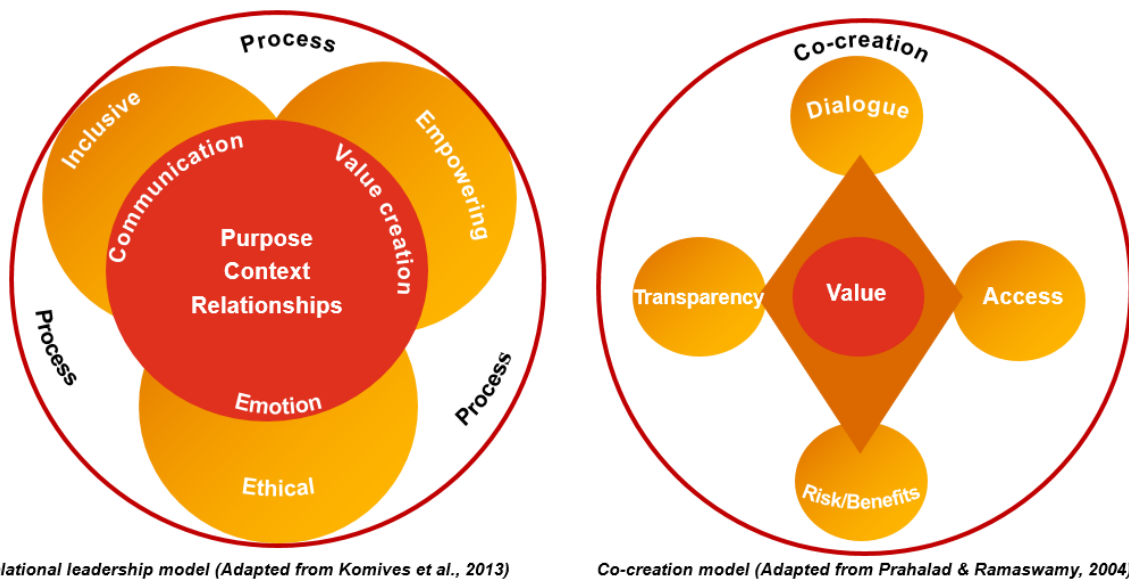


Figure 2.7: Common attributes and synergies between the relational leadership model and the dialogue, access, risks/benefits and transparency (Co-creation DART) model

A process of identifying the key attributes of relational leadership theory and exploring synergies and commonalities with the co-creation DART model facilitated the further categorisation and identification of common themes. The process yielded the following pre-defined themes which included a sub-objective determined for each theme, which further served as a framework for the research:

1. Context:

The interactions and relationship between leaders and followers are constructed and are considerably determined by context (Bryman *et al.*, 1996; Meindl, 1995). When viewing leadership as a process phenomenon, the context of these interpersonal relationships and larger social systems becomes significantly relevant (Uhl-Bien, 2006). All relationships occur in context and therefore context may emerge as an important issue to the study of relational dynamics or social processes. The NCA context was therefore a suitable catalyst for leadership emergence and development.

The research aimed to investigate how leadership functioned in the context of NCA, which provided the space to explore the interaction between the tenets of co-creation and the processes of leadership.

2. Value Creation:

The different world views on value may inform and determine the purpose and function of leadership. Value can be described as the driving principles by which individual choices are made to guide specific outcomes (Barden, 2013; Prahalad & Ramaswamy, 2004). The concept of value has become central to relational and co-creation processes (Prahalad & Ramaswamy, 2004). However, relative values, subjective value judgements, stewardship and fair value measurement have been an area of conflict in accounting and monetary systems and as such a subject of particular interest (Buys, 2009). Relational leadership theory has shifted the purpose of leadership from the individual pursuit to fostering collaboration, allowing the emergence of effective goals and pathways to co-production (Nicholson & Kurucz, 2017). Uhl-Bien (2006) speaks of common understandings, collective meaning-making, the ability to influence and take to heart the needs and interests of others towards a process of social order and change. The tenet of values is therefore a key element of co-production which leads to mutual benefits (Kurucz *et al.*, 2017).

This research explored how value was co-created within and between relationships which would improve understanding of relational leadership theory.

3. Communication:

As per the relevant components of relational leadership theory, communication can be described as a process or an outcome within and between relationships where the transmission of information can take place through a variety of means (Ihlen, 2012, Nicholson & Kurucz, 2019; Voegtlin *et al.*, 2019) The notion of joint meaning-making has been highlighted in the process of relational leadership (Kurucz *et al.*, 2017; Nicholson & Kurucz, 2019; Uhl-Bien, 2006). Communication, language, conversation and/or dialogue are important tenets of joint meaning-making (Uhl-Bien, 2006). Uhl-Bien and Arena (2017) highlight the importance of information flows that promote interaction and provide spaces and resources for people to come together and create. Communication is therefore an important tenet of relational leadership and the outcome may be interpreted as contributing to a process of joint meaning-making and subsequent co-creation.

The research therefore aimed to highlight how communication between the various emerging relationships can promote or impede the co-creation process.

4. Partnerships and relationships:

Partnership and relationships are the outcomes of social interactions or the outcomes of a socially constructed process which underpin relational leadership theory (Uhl-Bien, 2006; Uhl-Bien & Ospina, 2012). Leader-member exchange theory (LMX) affirms the importance of partnerships in leadership when leaders and followers are able to develop effective relationships (partnerships) that result in incremental influence (Katz & Kahn, in Uhl-Bien, 2006). Relationships tend to be dynamic when people work together to define and develop their relationships.

This research aimed to highlight partnerships as a means to understand not only the quality or type of the emerging relationships, but also the social dynamics by which leadership relationships formed and evolved in NCA.

5. Emotion:

Ashkanasy *et al.* (2000) argue that emotion plays a key role in human interactions and dynamics in what is termed as transformational leadership. Uhl-Bien (2006)

suggests that emotion is socially constructed in human interactions and that further research in relational leadership should focus on how emotion in human interactions is spread (emotional contagion). Nicholson and Kurucz (2017) emphasise that emotion is an important part of the co-creation and joint meaning-making process which enables decision-making.

The research aimed to highlight the role of emotion in the co-creation process of leadership.

These pre-defined themes were broad enough to allow for the emergence and further categorisation of other themes and sub-themes during the research process which sufficiently recognised the social constructed nature of relational leadership. Dugan (2017) argues that the tension created between these two approaches of adopting a pre-defined framework and allowing the emergence of social constructs, strengthens the relational leadership framework/model, subsequently allowing co-creation of leadership to occur, which was the object of inquiry of the research.

2.4.2 Co-creation as a tenet of relational leadership

Co-creation is emerging as an important mechanism for jointly addressing complex issues. It goes beyond consultation with different people within society where they can come together and actively contribute to the issues or tasks at hand.

“It’s about the human experience, and I believe it has the power to change our future by creating a better world environment around us, which is badly needed in these times” (Ramaswamy, 2011).

The necessary knowhow, knowledge and credibility to address emerging challenges, both at a technical level and in society generally, are not found in any one place or organisation (Lusch, Vargo & Tanniru, 2010). There is therefore a need to go beyond organisational boundaries for stakeholders from diverse backgrounds to come together and produce collective value so that the challenges can be addressed (Nissen, Evald & Clarke, 2014). Durugbo and Pawar (2014)

argue that companies are developing internal strategies as a management tool to harness the value provided by its customers. Beyerlein, Friedman, McGee and Moran (2003) claim that there is a process of transition where users of products progressed from confirming a product's usefulness to actively engaging in the process of production by providing ideas for its development.

Prahalad and Ramaswamy (2004) developed a co-creation model which highlights the key attributes or building blocks of co-creation comprising the elements, Dialogue, Access, Risk and/or Benefits and Transparency. This model is often referred to as the DART model for co-creation (Figure 2.8).

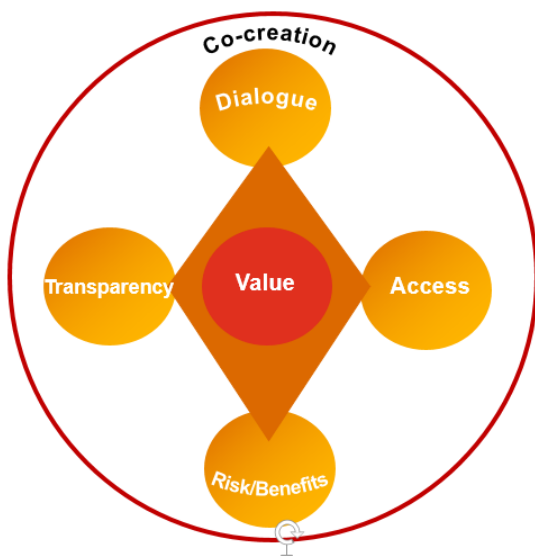


Figure 2.8: Dialogue, access, risk/benefits and transparency (DART) model for co-creation (Adapted from Prahalad & Ramaswamy, 2004)

Five (5) core elements or building blocks have emerged from the DART co-creation model:

- Value: Value is at the centre of the co-creation process where the key elements interact to move actors from being isolated to being more connected, from being unaware to being better informed, and from being passive to actively engaging. Value co-created is entity focused, intentional, context and empowering.
- Dialogue: This is a means of communication that promotes mutual understanding, sharing of knowledge, ideas and perspectives.

- Access: Multiple engagements at different levels include all actors to experience value and promote ownership.
- Risks and/or benefits: Access and transparency of the co-creation process allow actors to make informed choices, improving understanding at the entity level.
- Transparency: Co-creation can allow for better access to information, which creates and improves trust. Trust also underpins communication.

Ramaswamy (2011) asserts that the co-creation process involves the elements of communication, dialogue and language, access, and transparency, interacting on an ongoing basis, which has influences in many ways, both promoting and constraining the co-creation process.

Pearce and Manz (2005) claim that self and shared leadership manifest themselves where a combination of the two types of leadership produces a workforce more suited to a globally competitive context. Van Kerkoff and Lebel (2015) call for better leadership, without which scientific approaches to environmental challenges dominate due to the lack of proper interaction between leaders and technocrats. There is an interplay between professional staff that have the knowledge and management structures that allows leadership and innovation to emerge.

Recent scholarship has focused on how innovation has played a role in co-creation. Midgley and Lindhult (2019) claim that innovation that can be described as systemic can occur when different systems interact to produce joint value. Midgley (2016) highlights the importance of systems thinking where a variety of diverse perspectives are allowed to engage. Before innovation can be considered a valid component of co-creation, its scope needs clarification, as innovation would have an impact on the emergence of leadership. Despa (2014) argues that innovation and invention are different concepts, where invention is a purposeful event that is globally relevant, whilst innovation is locally relevant and taken up and applied by society. Deak (2009) argues that innovation occurs when an invention or a new product is improved and taken to the next level.

Durugbo and Pawar (2014) highlight some of the earlier work on co-creation, where concepts such as innovation that was user-led (Von Hippel, 2005), open innovation (Chesbrough, 2003), customer-led approaches and other convergence and participatory methods, have been developed (Jenkins, 2006). Bogers and West (2012) claim that there has been a transition in the innovation field, from individually-based products towards value creation from many individuals working together. There has been a convergence of many disciplines working together to create synergy and produce innovation (Durugbo & Pawar, 2014). Di Tollo, Taney, Davide and Ma (2012) argue that engaging in the process of co-creation is seen as a training and learning approach which companies adopt to cope with market dynamics. Smyth, Fellows, Liu and Tijhuis (2017) claim that co-creation is about the value created between all the actors in the process. Akaka, Vargo and Schau (2015) claim that individual actors would assess the value created by the collective and therefore it becomes an experience that is subjective.

Kainz (2016) claims that the co-creation process is about normative issues, such as the relationships between stakeholders where the quality of such stakeholders has an impact on the outcomes of the co-creation process. Prahalad and Ramaswamy (2004) reiterate that building relationships, partnering, and creating alliances all enhance the co-creation process whilst reducing any negative influences on the process and this all leads to optimal innovation.

Hutter, Hautz, Füller, Mueller and Matzler (2011) explored the possibilities of using advanced technologies, inviting participants to come together, collaborate, share experiences and ideas, thereby creating a community of practice. However, such methods have been found to be in their infancy and require further piloting in order to see their value. Another tool that has emerged is that of crowdsourcing, where using the internet and ensuring that language and access is available to as many stakeholders as possible, but these mechanisms have issues of commercialization, patents, compensation and many others emerging issues (Ramaswamy, 2011). Smyth *et al.* (2017) claim that such issues need to be dealt with at the beginning of the co-creation process. Mirvis *et al.* (2010) argue that leadership can enhance the social human relations where bottom-up approaches can yield positive outcomes.

In summary, genuine engagement between multiple actors and the interacting key elements are requirements for co-creation, with co-creation going further to produce tangible outcomes. The research therefore warranted an investigation into how leadership was being co-created within the multidisciplinary process of NCA as an exemplary case context.

2.5 SUMMARY

This chapter gave an account of the literature review on leadership, its historical context and provided the rationale for why it was an area of immense scholarly pursuit.

It described some of the challenges with undertaking leadership research and further rationalised the selection of relational leadership as the theoretical lens of the study.

The chapter concluded with an overview of co-creation, which is the unit of analysis to investigate how leadership was co-created through a relational leadership lens. Key attributes of relational leadership theory and the tenet of co-creation have resulted in the identification of five (5) pre-defined themes for the research. The next chapter provided an account of the case context of NCA which was the unit of observation for the study. NCA was merely the unit of observation for the research which provided the data sample for the study. The unit of analysis was co-creation, using the theoretical frame of relational leadership to answer the overall research question of how leadership was co-created within the emergent case of NCA.

CHAPTER 3: NATURAL CAPITAL ACCOUNTING AS AN EXEMPLARY CASE CONTEXT

3.1 INTRODUCTION

Chapter 1 presented the research problem and identified co-creation of leadership through the selected theoretical lens of relational leadership as the unit of analysis to examine how co-creation of leadership happened. This set the scene for the research to unfold, using any one the numerous multidisciplinary case studies to investigate and improve our understanding of how the creation of leadership took place. It gave a brief account of the methodology of how the research was undertaken, where discipline experts from within the case context provided the units of observation as the data sample for the research. It concluded with the ethical considerations of undertaking research with discipline experts.

Chapter 2 presented the various schools of thought on leadership and the associated leadership theories. The focus was on the relational leadership theory as the chosen theoretical lens for the study. The chapter focused on the notion of co-creation as the unit of analysis, where overlaying the scholarship of leadership with that of co-creation was developing the object of inquiry of the research.

Chapter 3 on NCA described the rationale for choosing the case context of NCA in more detail and highlighted the various dimensions of NCA as a multidisciplinary, multi-sector, collaborative process that provided the context for undertaking the research study on how leadership was co-created within the case context. The chapter provided the key attributes of the use of a case context such as NCA in undertaking qualitative leadership research. The chapter concludes with the summary of the chapter.

3.1.1 The need for sustainability in the 21st century

Sustainability is a central feature within the case context of NCA and therefore it is discussed here to understand how NCA can address broader sustainability issues.

In today's world of increased climate change and unprecedented loss of nature, sustainability of the environment is being compromised (WEF, 2020). Efforts to address these global issues are insufficient. Sustainability needs to incorporate all facets of the industrial revolution to address transformative change in society (Future Earth, 2020). Sustainability may therefore require consideration of all other aspects if it is to be effective in addressing the challenges that the world presently faces. The scope and definition of sustainability is varied (Pater & Cristea, 2016). Sustainability can be described as weak or strong (Neumayer, 2003). The latter implies that natural capital is irreplaceable or cannot be substituted, whilst weak sustainability implies that natural capital can be replaced by man-made capital (Dietz & Neumayer, 2007). However, it is not as simple as being either replaceable or irreplaceable. The argument is ongoing and is dependent on the moral and ethical debates unfolding, value judgements and decisions taken about whether or not built capital or that which is created by humans can actually compare and substitute natural capital. It is also dependent on future technological advances that can affect the way nature is viewed and utilized.

Sustainability is an inherent part of sustainable development (Institute of Directors in Southern Africa, 2016). Sustainable development can be described as development that will not compromise the capability of the next generations when addressing the wants and needs of the present generation (Brundtland, 1987). The key attributes of sustainable development are to implement it effectively, make decisions, monitor and measure its progress. Given the limited but significant progress in operationalizing sustainable development over the last 25 years, and as early as 2005, discussions at the global level by world leaders on transitioning to a different economy were already beginning to take place. Spurred on by the global fiscal crisis of 2008/2009, the concept of a green economy was developed by a group of forward thinking individuals within the United Nations organisation, who arguably predicted the issues with the current economic system (Musango, Brent & Tshangela, 2014). The green economy was described as an economy that would result in enhanced human well-being and social equity, while meaningfully mitigating environmental risks and ecological damage (Vazquez-Brust, Smith & Sarkis, 2014). Green growth is growth supporting a green economy. It was difficult to see how this concept of a green economy was different

from the operational definition of sustainable development as, in terms of implementation, not much was known about how to make it a reality. The green economy was not intended to substitute sustainable development, but to enhance it, such that sustainability was achieved through the inclusion of the environment in the economy. Hence, the green economy was an opportunity to promote green investments and green growth through green pricing policies, market creation and mobilising financial resources for green growth (UNEP, 2011). Boehnert (2015) argues that natural capital is a source of green growth, alongside labour and physical capital. However, challenges arising from the implementation of the green economy, such as the limited financial resource mobilisation and the difficulties associated with the creation of new markets, contributed to the launching of the Natural Capital Declaration at the Rio+20 Earth Summit in 2012.

Global frameworks and many other initiatives have been launched over several years which include:

- Rio+20 Earth Summit (UNEP, 2012);
- Green Economy (2008) Report (UNEP, 2011);
- Millennium Assessment (MA, 2005);
- World Summit on Sustainable Development (2002);
- Rio Earth Summit (1992); and
- Brundtland Report (Brundtland, 1987).

These global events and their subsequent outcomes have culminated in 193 United Nations member states adopting the 2030 Vision for sustainable development in 2015. The 17 sustainable development goals, including the 169 accompanying targets, have been described as the map for the world's development pathway up to 2030.

Natural capital is embedded in more than half of the sustainable development goals. These include protecting biodiversity, mobilising resources, mainstreaming nature's values into planning, water and soil protection. The economic activity of any country is reliant on the components of natural capital, which include the resource base, ecosystems and the ecosystem services. As such, this economic

activity is measured through the most commonly used macro-economic indicator of gross domestic product (GDP). This is then reported in the system of national accounts. The System of National Accounts (SNA) introduced by the United Nations Statistical division in 1953 (UN, 1953), is the internationally agreed standard set of recommendations on how to report and measure the economic progress at the country level. Gross domestic product and the system of national accounts are therefore used by many nations to report on their economic growth, which also includes reporting on their sustainability practices (Ochuodho & Alavalapati, 2016). Gray (2010) argues that accounting approaches were reasonably receptive to the inclusion of sustainability reporting in GDP and the SNA, but that such practices do not adequately capture the value of natural capital. It can therefore be argued that NCA has been envisaged and promoted to serve as an integrated monitoring tool for the sustainable development goals (SDGs) that would allow countries to move beyond GDP (Hein *et al.*, 2020), whilst contributing to transformative change (IPBES, 2019).

3.1.2 Making the case for nature

Any accounting system needs to capture the narrative on the interactions between the environment and the economy (Houses of Parliament, 2011). An important trait of NCA is that it captures the value of nature and its ecosystem goods and services to the economy (Hein *et al.*, 2020). Recognising the value of nature and making the business case for nature has been a pursuit within the biodiversity sector since the nineties when the Convention on Biological diversity was established (Brummitt *et al.*, 2016). Since then, many efforts have been undertaken to recognise the value of nature. These include market-based instruments such as cost benefit analyses, payments for environmental services, fiscal incentives, and environmentally motivated subsidies, amongst others (Hanley & Barbier, 2009). Biodiversity, which represented all the components of nature, was described as a stock and recognised as an asset (ODI, 1998). Over the last three decades ecosystem services emerged as a palatable concept amongst policy, business and invariably the users of biodiversity (West, 2015). For the first time there was a realisation that although nature was considered free public goods, it was being recognised as providing a service to society, where

there was a flow from nature to the user. The Millennium Ecosystem Assessment made the explicit link between human well-being and nature categorising ecosystem services into provisioning, regulatory and cultural services (MA, 2005). There is still a debate on whether or not biodiversity is a stock or a service, and this debate is ongoing. The Economics of Ecosystems and Biodiversity was launched in 2010 and went further in recognising the invisible value of nature. The Intergovernmental platform on biodiversity and ecosystem services (IPBES) was also established in 2012 to promote and provide scientific evidence on the value of biodiversity and ecosystem services. These developments have been catalysts for the emergence of natural capital thinking. This has resulted in the emergence of natural capital approaches being undertaken and subsequently the evolution of NCA as a tool for achieving sustainability.

3.1.3 Why use a natural capital approach to account for nature?

During the early 1970s and 1980s, when environmental degradation increased, it was found that nature and its goods and services were inadequately captured in the system of national accounts. Subsequently, measures taken by the statisticians themselves to adequately capture the value of nature and ecosystem goods and services were based on market dynamics and conventional sale prices. Schumacher (1973) recognised the fundamental role of natural goods and services in sustaining society's growth and welfare. Another approach was the introduction of welfare economics. These perspectives have historically underpinned the present thinking amongst society to view the natural environment as capital. A capital approach strengthens the consideration of nature as an asset that underpins economic and social development. Gross domestic product was found to be insufficient to account for resource extraction, degradation and upkeep of ecosystem goods and services (Costanza & Patten, 1995; Gianetti, Agostinho, Almeida & Huisingh, 2015). Consequently, the joint realisation between the public and private sectors that a loss (when the quantity of the resource base is diminished) and degradation (when the quality of the resource base is reduced) of natural capital will make the consideration of nature as a capital asset in decision-making more apparent since this affects the future growth, prosperity and welfare of society (Spurgeon, 2015; Vardon, Bass, Ahlroth & Ruijs, 2017).

A common approach amongst the public and private sectors ensures that the relationship between natural capital and society is sustainable (Natural Capital Coalition, 2016). Framing nature as a capital where it interacts with the other capitals, including the manufactured capital (machines and buildings), human capital (well-being, experience, skills, knowledge), social capital (structures, institutions and relationships), financial capital (wealth, monetary) leads to better cooperation and improved economic and financial decision-making (Maackn & Davidsdottir, 2015). The integrated reporting framework catalyses natural capital further as one of the six capitals (Russel, Dey & Milne, 2017). This capitals approach acknowledges the variety of values that are produced from each of these capitals and further demonstrates the number of ways that natural capital can be measured to highlight the cost of its maintenance and its continued provision of value for the future (Fenichel, Abbott & Yun, 2018).

The capitals identified by the International Integrated Reporting Council (IIRC), known as the six capitals model, are presented here (IIRC, 2013):

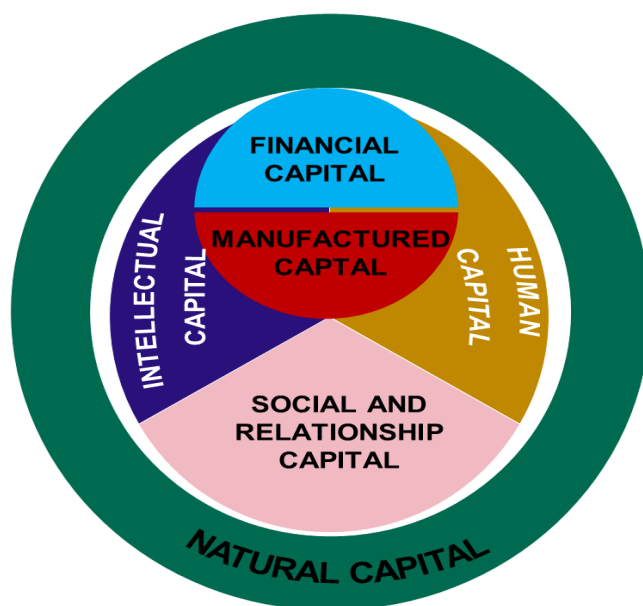


Figure 3.1: The six capital model (adapted from IIRC, 2013)

Multiple forms of capital interact to generate goods and services. Natural capital can be described as the stocks of ecosystems that produce a continuous flow of services and goods (UNEP, 2012). Guerry *et al.* (2015) argue that there are a number of ways how natural capital is interpreted, but define it as both the living and non-living aspects of an ecosystem, where the non-living aspects are the produced capital that provides benefits to society. Natural capital is therefore considered a stock of both the non-renewable and the renewable components of nature, which include the animals, plants, minerals, air and water, amongst others (Virto & Couvet, 2017). The variety of services provided by natural capital includes food, water, energy, shelter, medicine and the raw materials that people use in the creation of products (Costanza *et al.*, 1997). It also provides less obvious services, such as clean air, floods, defence, climate regulation, pollination and recreation. These goods and services are important for the economy, adding value to business and society. It can be reiterated that natural capital includes all the societal benefits, including the economic, spiritual and cultural elements of nature. Whatever value that people attribute to nature is incorporated, even though it may be intangible. Natural capital is therefore significant as it delivers multiple returns on investment to socio-economic development and the environment (Santamaria & Gough, 2015):

- Creating jobs;
- Livelihoods;
- Lessening the pressure on the system of public health;
- Improved information and evidence for decision-making on competing economic pressures;
- Ecological resilience;
- Innovation and investment; and
- Sustainable business and financial markets.

Natural capital is considered to be a particular way of thinking about nature, which has resulted in a myriad of natural capital approaches that have been applied to account for the value of nature within economies (Natural Capital Finance Alliance, 2018).

3.1.4 Why use accounting to account for nature?

The pursuit of sustainability, making the case for nature and subsequently thinking of nature as a capital and stock, triggered numerous efforts to link nature to the economy, all in the name of protecting nature from overutilization, unsustainable use, loss of natural resources and inadequate valuation of nature's actual value. The early stages of an economic or monetary system have shown that both accounting and commerce have progressed side by side, where the beginnings of accounting are not any different to the beginnings of finance and business (Power, 2015).

3.1.4.1 What is accounting?

Accounting is essentially the recording of transactions for the buying and selling of goods and services (Walker, 2016). In 1496, a mathematician called Luca Pacioli recognised the need to understand trade records. He described a method used by the merchants in Venice during the Italian Renaissance period. Luca Pacioli was consequently called the 'father of accounting', even though he did not invent the system of accounting that we know today (Smith, 2013). With the evolution of "value theory" where in-use and exchange values were considered in historical record-keeping, subjective value judgements began to emerge within the historical cost accounting process (Buys, 2009). Hence, keeping account of goods at ancient warehouses was therefore the beginnings of the monetary and commerce systems that eventually progressed into the advanced accounting approaches of today (Wiley, 2013). Globally, the Financial Accounting Standards Board (FASB), established in 1973, and the Governmental Accounting Standards Board (GASB), are two of the main organisations responsible for establishing generally accepted accounting principles (GAAP). Accounting therefore provides us with a historical record of what was traded to get to the present state. It also provides a context for the future in terms of planning. Notwithstanding these attributes of accounting, it is important to bear in mind that accounting is a management tool. It is not the solution in itself. It provides separate information from which different findings can be drawn to undertake management decisions. Accounting is an economic system that has been developing progressively in stages through the recognition of social and environmental issues (Lodhia, 2014). Accounting has therefore emerged as a

social and organisational phenomenon (Walker, 2016). Through these new approaches in accounting, ecosystem goods and services were being captured within the environmental context, recognising the value that the environment is providing to society for economic and social well-being.

3.1.4.2 *The need for measurement*

Underpinning the sustainability movement, the accounting field and the emerging NCA concept, was the need to measure the earth, its ecosystem goods and services (Future Earth, 2014, UN, 2014). A suitable entry point for measurement regimes was the introduction of the System of National Accounts in 1953, which compiled measures of economic activity to support the growing need of statisticians, economists and environmentalists for more statistics, more evidence on the inter-linkages between the environment, society and economics. The accounting concepts, structures, rules and principles of the System of National Accounts (SNA) brought accounting to the forefront at the time of the 1972 United Nations Conference on the Human Environment, with pioneer projects emerging in Canada, Norway, the Netherlands, Spain, France, Costa Rica, Indonesia, and the Philippines (UN, 1972).

The 1992 United Nations Conference on Environment and Development was another milestone, where the demand for measurement was included in Agenda 21, where concepts of the environment being recorded for its role in contributing to economic growth, and other concepts of improved livelihoods through measurement of wealth and prosperity, started to emerge (UN, 1992). Over the last 40 years a number of efforts have been made to develop methods that integrate traditional macro-economic indicators with environmental information (Hecht, 2007). In the early 1990s, the statistical division of the United Nations made the suggestion for a single integrated System of Environmental and Economic Accounting (SEEA) as a means to provide standardisation of the numerous frameworks that had been developed (Bartelmus, Stahmer & Tongeren, 1991). The original 1993 SEEA handbook focused on the adjustment of existing macro-indicators. This resulted in the publication of the first System of Environmental Economic Accounting in 1993 (UN, 1993). This process was

facilitated by the formation of the UN London Group on Environmental Accounting, a “city group” of experts established so that this small group of experts could collaborate to implement and test the development of accounts that were linked to the SNA. In 1998, the London Group decided to amend the SEEA so that there was an adequate focus on both monetary accounts and physical accounts that were being developed in many countries. It resulted in SEEA 2003, which was broadly accepted by all international organisations and readily used by statistical offices that were eager to test the revised methodology. The revised SEEA 2003 framework consisted of four categories of accounts, supported by many sections on environmental accounting (UNSD, 2003).

The SNA also made provision for wealth accounting. The SNA was expanded to include the value of assets, income and consumption, and hence social welfare and social well-being were also being measured (UN, 2010). In 2011, the World Bank published the document “The Changing Wealth of Nations”, which provided comprehensive wealth estimates for countries in 1995, 2000, and 2005. In 2009, Dasgupta (2009) conducted research on welfare and wealth capital. The development of a scientifically credible indicator in collaboration with Dasgupta’s (2009) vision became known as the inclusive wealth index (UNEP, 2010). In 2012, the inclusive wealth report was launched at the Rio+20 Earth Summit. The inclusive wealth index captured the three (3) types of capital: natural capital, man-made capital and human capital (education and health). These three types of capital accounted for the physical capital stock. At any point in time the flow of physical capital was determined, and a shadow price developed for each particular type of natural resource, including the externalities that were both positive and negative. Countries were then ranked according to their total wealth. However, in 2014 the 140 countries that participated in this initial inclusive wealth assessment showed that for 60% of these countries, disclosed through the inclusive wealth index, their natural capital was in decline. Total welfare estimates were significant, as many of these countries have destroyed their natural capital but they have invested in building schools, colleges, roads and hospitals and hence their total wealth was on the rise. The message, however, was misleading in that the natural capital of these countries was in decline but their wealth or welfare was on the increase. This was a case of the use of macro-economics which were applied to

micro-economics through the use of contingent valuation techniques (Weber, 2010). Many scholars would argue that this is not accounting but merely economic assessments. Accounting was found to have certain properties based on verified information that is systematic and stable across space. Accounts developed through economic modelling therefore created much confusion.

In a parallel process, with the focus being placed on improving and expanding the measurement of inclusive wealth to include ecosystem services and its links with human capital (MA, 2005; UNI-IHDP & UNEP 2014) and, other efforts to capture how much was being consumed in term of waste produced and the measures of how energy was being consumed of industrialized economies, were also emerging. The Clean Development Mechanism of the Kyoto Protocol made provision to carry out inventories for carbon (UN, 1998). The 2006 Stern review triggered the discussion about measuring what inaction costs as this had an impact not only on climate change but it affected GDP loss (Stern, 2007). The Stern report was a precursor to the launch in 2007 of The Economics of Ecosystems and Biodiversity (TEEB) which was a worldwide project by the G8 (championed by the German Government, the European Commission and UNEP) TEEB advanced beyond an evaluation as it revealed the multiple relationships and interconnections between the nature and economy (UNEP, 2010). The International Society for Ecological Economics (ISEE) has also been championing academic scholarship on this particular subject matter on the economics of nature for more than twenty (20) years (ISEE, 2019). At the international policy level, the most significant initiatives have been the Green Economy (UNEP), Green Growth (OECD), WAVES (World Bank) and the Convention on Biological Diversity Aichi-Nagoya Biodiversity Strategy (UNEP, 2011).

A galvanising moment for reaching an element of consistency on measurement was when the United Nations Statistical Commission adopted the SEEA as a global statistical standard to provide a clear, globally agreed set of concepts for producing many types of natural capital accounts. Additional resources on methodology have been produced by a range of agencies, which have served as a precursor to the development of natural capital accounts (Table 3.1).

Table 3.1: Frameworks and tools available as a precursor to NCA

Tool	Purpose
System of National Accounts (UN, 1953)	An international accounting standard that measures macro-economic information, informing high-level decision-making
SEEA-Central Framework (SEEA-CF) (2012) (UN, 2014)	International statistical standard to measure the environment in relation to the economy
SEEA-Experimental Ecosystem Accounting (SEEA-EEA) (UN, European Commission, Food & Agriculture Organization, OECD & World Bank, 2014)	International guidelines to promote consistent and standard ecosystem accounting
The Green Economy (UNEP, 2011)	Have unlocked the potential of the environment contributing to sustainability transitions
Sustainable Development Goals (SDGs) (UN, 2015)	Provided 17 ambitious goals and indicators for the prosperity and sustainability of the planet up to 2030. It provides an opportunity for big data drives and integrated reporting
The Economics of Ecosystems and Biodiversity (TEEB) (TEEB, 2010)	Unlocked the invisible value of biodiversity and ecosystem services and opened up a variety of valuation techniques for measuring the value of nature
Kyoto Protocol (UN, 1998)	Promoted corporate responsibility, sustainability reporting through the compilation of carbon inventories, carbon disclosures and nationally determined commitments
Wealth Accounting and the Valuation of Ecosystem Services (WAVES) (WAVES, 2019)	Welfare accounting and inclusive wealth accounts using the inclusive wealth index have had significant traction with policy mainstreaming
Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) (Díaz <i>et al.</i> , 2015)	Provided a conceptual framework for harnessing the value of biodiversity and ecosystem services which allows for conducting scientific assessments for decision-making and the mainstreaming of nature's benefits to society. Provided a new classification of ecosystem services called Nature's contributions to people (NCP)
Millennium Ecosystem Assessment (MA) (MA, 2005)	Assessed ecosystem change for human well-being and provided a categorisation of ecosystem services into provisioning, regulatory and cultural services
United Nations Big Data Programme (UN Global Pulse, 2013)	Allows for standardisation of data, access and scientific spatial assessments that underpin state of the environment reporting

An experimental framework is also available to account for the ecosystem services provided by natural capital. However, given the various approaches that have emerged, on an international level, there was a divergence of practice in the way

countries accounted for their natural capital. Governments seemed to have realised the potential of the inclusive wealth index and were therefore eager to participate in the next assessment. There was some resistance and reluctance noted, as the UN SEEA system was being promoted at the same time. In the short term, the inclusive wealth index did not intend to substitute or replace the SEEA central framework, or the SNA. In the long term, however, UNEP was encouraging the practice of capturing the total wealth or per capita wealth of any country through the inclusive wealth index. This disparate nature of practice between the ecologists, economists and statisticians, between the different organisations pushing different approaches, has highlighted the complexities within accounting and statistics.

3.2 NATURAL CAPITAL ACCOUNTING

NCA has precedence in the sense that it has developed further based on so many different conceptual terms, methodologies and approaches that have been championed by different international organisations. The concept of ecosystem services had to be recognised and embedded amongst people working in this field before natural capital was seen as a stock and flow. Many people from multidisciplinary fields, such as ecological economics, scientists, economists and statisticians working for decades on different aspects of NCA, have contributed to its evolution. It started off as a pursuit to have more statistics on the nexus between environment and economy. It was explored further by the resource economists to develop social welfare accounting. It is now being pursued as a multidisciplinary accounting tool to effect transformative change in society (AMCEN, 2019). What was once called green accounting, environmental accounting, and resource accounting, is grouped together and is now called Natural Capital Accounting.

3.2.1 Natural Capital Accounting defined

It has been demonstrated that NCA has followed on from many concepts and initiatives (section 3.1.3 and Table 3.1). Hence, its scope and definition is still being developed. Many scholars and practitioners would argue that NCA is not accounting. The SEEA-CF is a globally recognised statistical standard that has

been a precursor to the development of NCA. The SEEA-CF has its origins as a statistical standard and is not necessarily recognised as an accounting standard (Rapacioli, Lang, Osborn & Gould, 2014). The subsequent and accompanying SEEA-EEA has been developed to address some of the gaps that arose regarding the accounting for ecosystems and its services. Subsequently, the SEEA-EEA is still experimental and has not yet been adopted as a standard (Hein *et. al.*, 2020). The evolution of the concept of NCA shows that there may be some missing elements in the process. These different approaches to accounting are likely to cause confusion amongst and within accounting professionals, but more so amongst people outside the accounting field. An example of the confusion caused by natural capital terminology was the frequent mixing and interchangeable use of the terms 'natural capital accounts' and 'Natural Capital Accounting' as expressed by participating delegates of the World Forum on Natural Capital that took place in 2013. The former refers to a specific account, such as a carbon or water account that could track physical flows of natural capital or include the application of monetary valuations of natural capital data. The latter refers to the broader agenda to account for natural capital and this has had no specific standardised methodology associated with it.

From the directive and recommendation of the SEEA-EEA, NCA can be described as a measure of the stocks and flows of natural capital which aims to monitor and account for ecosystem change (Hein *et al.*, 2020).

3.2.2 How is NCA operationalized

The SEEA-CF, which is a statistical international standard, together with the SEEA-EEA, gives effect to NCA implementation. SEEA-EEA, which is still in an experimental stage, has not been adopted officially as a standard. Using these two frameworks, accounts are therefore developed in physical terms and are then taken further and developed into monetary terms. Aggregate thematic accounts are also produced.

3.2.2.1 Physical Accounts

This process involves the following key steps:

1. Providing information on the extent of the ecosystem, which involves viewing the ecosystem as an asset, classifying it according to asset classification standards, and through biophysical modelling, presenting the information spatially.
2. Determining the quality and condition of the ecosystem in relation to its attributes and traits to produce outputs and services, which also involves the use of classification systems, standard indices and indicators.
3. Ecosystem Capacity, which is underpinned by steps 1 and 2, includes the use of supply and use tables and ecosystem classification systems of ecosystem services, measured as the final physical flows of an ecosystem.

Accounts have become increasingly spatial, as prescribed in the SEEA-EEA, with the development of maps of extent, condition and services (European Commission, OECD, UN & World Bank, 2013). This has, however, also led to different views about natural capital accounts and natural capital assessments. In some cases the terms are used interchangeably, whilst in others natural capital assessments are not considered to be accounting. The accounting process involves statistics and numbers that feed into profit and loss statements and balance sheets (Man & Gădău, 2010). Spatial assessments rely on geographic information systems, remote sensing and other spatial information data sets (Andrew, Wulder, Nelson & Coops, 2015). The accuracy of some of these scientific assessments can be subjective and based on scientific judgement, especially in cases where there are data gaps and other data deficiencies. Such diverse views have led to confusion as to whether assessments and accounts are the same in applying NCA. Schröter, Remme, Sumarge, Barton and Hein (2015) argue that spatial assessments underpin the accounting process, whilst issues of certainty can be improved through access and the use of better data.

Given the reliance on spatial data for steps 1 to 3 of NCA, robust definitions, classification systems and accurate measurement of the ecosystem extent, condition and services underpin the NCA process (United Nations, 2014). As such, there exists a myriad of measurement frameworks, classification systems and categories of definitions and terms within NCA. Bordt and Saner (2018) identified 16 measurement frameworks that can be used to measure particularly ecosystem

extent which can also be used and applied to measuring ecosystem condition and services. However, the latter two also have a number of different classification systems that can be used for both ecosystem condition and ecosystem services (Nahlik, Kentula, Fennessy & Landers, 2012). This variety of tools does have implications for the way NCA is either taken up or applied. The decision-making around ecosystem extent, where ecosystems are defined as capital assets and whether or not it is categorised as critical capital, is challenging within NCA.

More clarity and understanding is needed on viewing ecosystems as capital assets, and how they support ecosystem assessments, the accounting process and their subsequent management (Hein, Bagstad, Obst, De Jong & Lesschen, 2016). Furthermore, if there is better understanding between how the ecosystem is defined as an asset and what the capacity of that ecosystem is to provide the necessary services, it will become easier to measure the loss of service, which will provide adequate information to make better decisions to prevent the further degradation of the asset (Leach *et al.*, 2019).

In addition, it was found necessary to develop a common international ecosystem classification system to uniformly describe ecosystem services, such that it complemented the comparison and facilitated the standardisation of ecosystem accounting (Polasky, Tallis & Reyers, 2015). The common international classification system (CICES) version 4.3 was published in 2013 by the European Protection Agency (EPA, 2013). The number of revised versions of ecosystem classifications that exists is an indication of the ongoing debate on the classification of ecosystem services. Version 5.1 is presently available. In a parallel process, the Final Ecosystem Goods and Services Classification System (FECS-CS) was published by the United States Environment Protection Agency (EPA, 2013). CICES was based on the MA which was found to be inadequate, whilst FECS-CS was developed to address some of the gaps that existed (D'Amato, Makinen, Paracchini & Liqueste, 2016). This placed the NCA practitioner in a difficult position when it came to decision-making on the classification of a particular ecosystem and the subsequent categorisation of the ecosystem service. In addition, there existed these global classification systems and national classification systems which can further complicate the decision-making process.

Bordt (2015) argues that global classification systems need to have a level of detail that somehow responds to national and local needs. This again relates to determining how ecosystems respond to local use and whether or not they are able to keep on providing services despite the demand. In this regard, the United States Environment Protection Agency developed the National Ecosystem Services Classification System (NESCS), which was designed for robust definitions of ecosystem services that were comprehensive and non-duplicative in a way that CICES and FECS-CS were not (EPA, 2015). Leach *et al.* (2019) argue that these diverse approaches can misinform decision-makers and therefore call for a joint understanding on the relationship between ecosystem assets and their services that promotes a consistent method for measuring natural capital.

3.2.2.2 Monetary accounts

The use of monetary valuations seems to have emerged as part of the practice of NCA. The EEA makes provision for the valuation of ecosystem assets. These monetary values are aligned to the SNA and are based on exchange values of those assets that can be transacted in the market place, providing an indication of the contribution of natural capital assets to the economy, as well as highlighting the cost of repair, maintenance and degradation of the asset (Hein *et al.*, 2020). Following the steps undertaken for the physical accounts, the steps necessary for the monetary accounts are:

1. Based on those ecosystem and ecosystem services that are utilized, establish the exchange value of these ecosystems and services using the supply and use tables.
2. Develop a monetary asset account for a particular purpose, addressing the different needs. Hence, monetary accounts are purpose driven.

Monetary accounts, which originally underpinned the NCA concept of linking the environment to the economy in the first instance, and secondly measuring the environment for valuation and pricing, have been a contentious area of practice. The understanding of what these values imply and the associated uncertainties with these numbers is even less clear (Hein *et al.*, 2016). Fears and misconceptions that the accounts would lead to the commodification of nature

have been present. Turner, Badura and Ferrin (2019) argue that these views have been useful in highlighting some of the conceptual difficulties of the use of exchange values, welfare-based valuation and resource rents, amongst others. Other issues that have emerged include clarity around resource liability, cost transfer, as well the discount rates that are applied in the valuation process. The focus of NCA therefore shifted to the biophysical accounts, with monetary accounts being developed only fit for a particular purpose.

Monetary accounts have, however, found traction in the private sector with the development of environmental profit and loss accounts that focus on impacts and outputs such as residuals, waste and emissions, and corporate natural capital accounts (CNCA) that focus on natural capital assets and their services (NCC, 2015). Both of these accounts have an emphasis on non-market values that are underpinned by assessments focusing on quantitative data. Environmental expenditures and the cost of the maintenance of natural capital are included in CNCA. However, CNCA's focus on the costs of voluntary interventions as part of corporate responsibility is contrary to the focus of the UN-SEEA-CF, which addresses the cost of impact and compensation for damage to the natural capital (Spurgeon, 2015). Hence, there are different drivers and intentions with the production of monetary accounts, particularly in the private sector. The accounting field has a key role to play in the production of accounts, developing a suite of core principles and integrating NCA into business decision-making and reporting. Natural capital externalities need to be mainstreamed into data and information management, management of risks and integrated decision-making and reporting. A change of this magnitude requires corporate boards to include knowledge on natural capital into key strategic business planning processes (Rapacioli *et al.*, 2014). Leach *et al.* (2019) argue that a standard approach on natural capital between public and private sectors is necessary for consistent and undeviating compliance with policies and laws.

3.2.2.3 *Integrated accounts*

Integrating steps 1, 2, and 3 with steps 4 and 5 of the SEEA-EEA guideline produces four (4) types of integrated accounts:

- Combined presentations, where the use of accounting principles together with common classification systems allows for information on the change in ecosystem condition combined with what has been spent on the protection and conservation of the asset. Ecosystem flows of a particular asset can also be combined with information on the economic activity within the asset.
- Extended supply and use accounts provide additional information on ecosystem services to the SNA supply and use accounts. Here additional rows and columns of information on ecosystem services add value to the accounts.
- Sequence of accounts includes the current accounts, capital accounts and balance sheets, which include indicators (for income, investments, savings and wealth) and aggregates that include information on environmental degradation and/or depletion.
- Balance sheets, which include all information on the liabilities and assets of the country, including measures on wealth, ecosystem assets, and intermediate ecosystem services and in some cases the value of the land. Balance sheets offer a way to monitor and avoid double accounting.

3.2.2.4 Thematic accounts

NCA provides an opportunity to develop cross-cutting accounts for other sectors, such as agriculture, tourism, water, ocean accounts, carbon, biodiversity and species accounts, amongst others. Some key priority thematic accounts include:

Forest accounts

Depending on the national circumstances, forests are an important ecosystem as they provide a range of benefits for local communities and rural populations, such as raw materials, food, shelter and medicines. They also have recreational and cultural value, contributing to well-being, a sense of place and tourism. The ecosystem services that emerge from forests also have cross-cutting value for watershed management, water provision and flood attenuation. It is a significant wealth creation sector for countries and therefore an important policy imperative for governments to address socio-economic issues. Commercially, forests are a viable business opportunity, contributing to jobs, employment and GDP. The

forestry sector addresses climate vulnerabilities and is hence a significant contributor to carbon emissions, trading schemes and other fiscal and financial incentives that contribute to climate change mitigation and adaptation.

As such, NCA can provide information on offsets, trade-offs, carbon trading and time series data and information for integrated reporting and decision-making on a regular basis (WAVES, 2016a).

Energy and minerals accounts

These accounts have been one of the earlier natural capital accounts that were developed. Mining minerals and energy resources within many countries are often a national priority because of the sector's contribution to growth and jobs. Countries, particularly developing countries, are still heavily dependent on non-renewable resources such as coal, gas and oil for their energy requirements. Governments therefore need information so that they can manage this important economic sector adequately. Because of the sustainability transitions of many countries towards renewable energy sources, countries are now searching for ways to innovate and manage their externalities. Mineral and energy accounts have been developed using the SEEA-CF that have already fed into the SNA. These accounts, when combined with ecosystem accounts, have produced a number of indicators which can be used for important decision-making within the respective countries (Reuter, Juhn, Portela & Venter, 2016). For example, in South Africa, energy accounts, which were included into a compendium from 2014-2017, have been produced and published seven (7) times (SANBI & Statistics South Africa. 2018).

Water accounts

Water accounts have been one of the popular accounts developed because of the ecosystem stock and flow characteristics of the resource (WAVES, 2016c). It is also a sector that has well-established pricing structures, where users often pay for the resource and hence there is data available to develop accounts. Water is a key policy priority in many countries because of its scarcity, variability and competitive usage across sectors, providing fresh water for human consumption, business as well as for nature to thrive. The dynamic nature of the water resource

has significant socio-economic implications. Hence, water accounts have been found to be valuable in setting priorities, encouraging investments in infrastructure development for both ecological and built infrastructure and institutionalising NCA. For example, in South Africa, the first water accounts were produced in 2000 as environmental economic accounts (SANBI & Statistics South Africa, 2018).

Land and ecosystem accounts

These accounts have also been very useful, as land is a physical asset on which all other activities depend, which has allowed for the integration of other accounts (WAVES, 2016b). It provides for the nexus interactions across sectors. Land is also a policy priority for governments, where issues of land tenure and land reform are common. Transformation of land from one type of ecosystem type to another has an impact on the resource base. Land accounts have been developed to direct trade-offs between competitive land uses. Data availability and investments in spatial planning have also facilitated the development of land and ecosystem accounts. For example, in 2014 South Africa was one of seven pilot countries involved in a global initiative called Advancing Natural Capital Accounting (ANCA), where two pilot accounts were produced, namely the national river ecosystem accounts and land and ecosystem accounts for the KwaZulu-Natal (KZN) province (Nel & Driver, 2015).

Biodiversity accounts

Biodiversity accounts are less advanced because of the complexity of biodiversity and its components. The accounts are similar to ecosystem asset, condition and extent accounts, but go further in providing information on species richness, abundance, extinction rates and species health. Jones and Solomon (2013) argue that Accounting for Biodiversity can construct and shape reality, transforming behaviour and improving understanding of biodiversity. A good start has been with the Global Reporting Initiative, where elements of biodiversity have been included in integrated reporting, but more needed to be done in problematizing the anthropocentric impact on biodiversity, the type of biodiversity data used and the consistency of reporting across geographic regions. Biodiversity accounts require further piloting and testing to improve and refine the accounts.

Carbon accounts

These accounts are similar to greenhouse gas inventories, providing more information on carbon stocks and sinks. They assess the impact of land use change and cover on carbon stocks and sinks and use the ecosystem condition accounts to assess the effect of a variety of policies available. For example, in South Africa the South African National Treasury used the energy accounts published by Statistics South Africa to produce carbon accounts (Alton, Arndt, Davies, Hartley, Makrelov, Thurlow & Ubogu, 2014; WAVES, 2016d).

3.2.3 The use of NCA to measure value and account for natural capital

Globally there are challenges and opportunities to address environmental sustainability issues, climate change, biodiversity loss and overall environmental degradation. The public and private sectors in all parts of the world are trying to address the challenges and harness the opportunities related to natural capital management. Some achievements have been noted, with more than 80 countries implementing the SEEA, although the different ways that it has been implemented and the varying extents of implementation are based on national circumstances (UNCEEEA, 2019).

Actions for improved measurement of sustainability on the ground require an enhanced understanding to move forward and standardise better practices. One such practical tool is that of Natural Capital Accounting (NCA) which has come into existence as a mechanism that allows for the incorporation of the value of nature and its contributions to the economy in a consistent and systematic way. NCA therefore drives the incorporation of the value of nature across organisations, particularly since it is earmarked as a key mechanism to provide information to the indicators for the implementation of the Sustainable Development Goals (SDGs) (Ruijs, Van der Heide & Van den Berg, 2018).

NCA offers a structured, systematic spatial framework over time for undertaking measurement and estimating the value of the environment and its relationship with the economy. In so doing, NCA discloses the interwoven links between the economy and the environment, allowing for a clear narrative of economic growth

more than what GDP would provide. With such a framework in place, economies are able to optimise their growth potential for economic prosperity, whilst ensuring sustainability of their natural capital (SANBI & Statistics South Africa, 2018).

Significant progress has been noted for NCA application and implementation (Hein *et al.*, 2020). In addition to the 80 countries that have piloted SEEA-CF accounts, an additional 30 countries and more have developed experimental ecosystem accounts (UNCEEEA, n.d.). Countries often prioritise the most policy-relevant accounts and therefore to this effect 24 countries have officially published SEEA-EEA accounts (Hein *et al.*, 2020). It can be argued that countries have recognised the benefits of NCA through investing and committing resources to develop and publish policy-relevant SEEA-EEA accounts. In addition, WAVES have been working in 18 countries, with five (5) countries having sustained the impact of the World Bank WAVES partnership through establishing their own programmes of work on NCA (UNCEEEA, 2019).

3.2.3.1 Benefits of NCA

NCA, through the SEEA-CF, has highlighted the benefits of nature to the economy. Based on a track record of more than 10 years of experience and having been supported and complemented by numerous previous and ongoing initiatives and processes, NCA, through the SEEA, has demonstrated some key benefits for undertaking and implementing NCA:

- Demonstrates the contributions and benefits of ecosystems to the economy;
- Providing information that better informs natural resource management;
- Provides a comprehensive narrative of the inter-linkages between the environment and the economy through integrated, structured and systematic information;
- Provides consistent, regular and updated integrated information to decision and policy-makers;
- Information on the impact on natural capital is effectively compatible with models and systems of economic policies;

- Able to contribute to cross-sector policy objectives such as the SDGs, green economy, including particular resources such as water, energy and minerals, forests and carbon;
- Information compactible across all scales supporting local, sub-national and national policy-making; and
- Encourages a culture of transparency and objectivity in both decision-making and information access and distribution processes.

Some of the key tangible benefits of implementing NCA have been its ability to contribute to policy and decision-making processes at the national and sub-national levels, where national development plans, sector plans and management plans have incorporated the information from NCA into the budget and investment planning at several scales and governance structures.

Accounts have been a precursor for other mechanisms, such as payment for ecosystem services, resource pricing, incentive and licensing schemes.

NCA has been found to provide synergies with the climate process, where it could benefit the response to climate change, mitigation and adaptation plans.

NCA's potential impact on the achievement of the SDGs have been explored, with NCA expected to inform 40 indicators for SDGs 15 (Life on land) and 14 (Life with water), specifically addressing biodiversity loss and species extinction rates, amongst others, but also informing SDGs 2 (Zero hunger), 6 (Clean water and sanitation), 7 (affordable and clean energy), 8 (decent work and economic growth), 9 (industry, innovation and infrastructure), 11 (sustainable cities and communities) and 12 (responsible consumption and production) (UNCEEEA, 2019).

NCA has found its way into the CBD post-2020 discussion on finding a new deal for nature, where it is not only informing the development of the indicators for this process, but is in a good position to monitor the progress of the post-2020 agenda.

Subsequently, the natural capital approach and the tool of NCA to facilitate this approach has come about as a way to merge the environment with economics in

order to improve decision-making for protecting, managing, and recovering natural capital to its near natural state. An economic perspective on nature is therefore considered by many actors as important for decision and policy-makers who are concerned about depleting stocks of natural resources and overall environmental sustainability.

3.3 COMPLEMENTARY TOOLS AND PROCESSES FOR NCA

There have been a number of precursor initiatives, tools and mechanisms that have allowed NCA to progress to its present state of development and its subsequent implementation. These processes and frameworks have been described in Table 3.2. However, many of these tools, mechanisms and frameworks have also developed further in a parallel process, complementing NCA in some ways and challenging it in others, such that NCA is constantly reviewed and improved.

3.3.1 System of National Accounts (SNA)

The fully established System of National Accounts (SNA) records in monetary terms the flows of the goods and services that have been processed and produced through the economic production system. NCA has therefore informed the SNA through providing integrated information on the flow of natural resources going into the production system, providing additional information on carbon emissions, waste and depletion or degradation of the environment. This integrated information has allowed for different scenarios, where informed and appropriate policy interventions were needed on how a degrading environment can affect the economic potential and growth of a country. Consequently, this has allowed for better informed policy and decision-making, including informing natural resource management and land use change. NCA, through the SEEA-CF, has therefore expanded the boundary for natural capital assets within the SNA (Hein *et. al.*, 2020).

The SNA is informed further by NCA through the SEEA-EEA, which is an extension of the SEEA-CF. However, although the SEEA-EEA has not been officially adopted as a standard, it informs the SNA on the flows of ecosystem

services from the natural capital assets and in this way addresses the gap in the SNA which does not cover all ecosystems and their services. Hence the SEEA-EEA allows for the value of the flows of ecosystem services in monetary terms. The SEEA-EEA has expanded the boundary for production and consumption within the SNA (Hein *et al.*, 2020). By expanding the boundary of production and consumption, the SEEA-EEA brings into the SNA ecosystem extent, condition and highlights the contributions of ecosystems services to society. Information on the monetary value of ecosystem services can inform decision and policy-makers about the thresholds of the ecosystem services that affect the provision of essential services to society. The SEEA-CF is presently under review and there are plans to have the SEEA-EEA officially adopted as a standard for ecosystem accounts by 2021 (Hein *et al.*, 2020).

3.3.2 Convention on Biological Diversity (CBD)

The Convention on Biological Diversity first made provision in 2010 for the incorporation of biodiversity values that should be included into national accounting processes, Decision X2, Strategic goal A, target 2 of the Aichi biodiversity targets (CBD, 2010). Since 2010, a number of decisions nuancing NCA, including recognition of the Natural Capital Protocol, have been adopted by contracting parties to the Convention. A quick starter package called the CBD Ecosystem National Capital accounts (ENCA-QSP), developed by Jean-Louis Weber, was produced to give guidance to stakeholders on how to include biodiversity values into national accounting processes (CBD, 2014). The SEEA-EEA captures the values of the stocks of natural capital. The ENCA-QSP, on the other hand, uses accounting tables with biodiversity indicators that address ecosystem health. Hence the emphasis is on measuring ecosystem health and improving the understanding of using the ecosystem, goods and services, and how such use affects the biodiversity. The ENCA is active in Europe and promoted in francophone countries. It is evolving into a system that can adequately measure the level of degradation of the biodiversity and ecosystems at smaller geographical scales (Weber, 2019).

3.3.3 The Economics of Ecosystems and Biodiversity (TEEB)

TEEB was launched in 2010 in Nagoya, Japan, at the Convention on Biological Diversity 10th Conference of the Parties. Its key principle objective was to ensure that the biodiversity values were integrated into decision-making at all scales and levels within society (TEEB, 2010). TEEB, based on the Millennium Ecosystem Assessment, has inspired many projects and initiatives, such as the green economy, UNEP's project for ecosystem services, and the Natural Capital Coalition, amongst others. TEEB is not as active as it used to be, but to a large extent it has achieved its objective of mainstreaming its outcomes into numerous projects and emerging initiatives. UNEP's leading project on ecosystem services emphasised the valuation and further mainstreaming of the values of ecosystem services into many policy processes at multiple levels. It was piloted in five (5) countries, including South Africa, and successfully facilitated the uptake of conducting ecosystem assessments for integration into macro-economic processes (UNEP, 2015).

3.3.4 Natural Capital Coalition

TEEB set the precedent for the formation of the Natural Capital Coalition. The intention of the Coalition was to bring together a variety of stakeholders from both the public and private sectors, but predominantly the private sector, to come together and develop ways to standardise how the private sector should measure and value natural capital (Natural Capital Coalition, 2015). Interest amongst the private sector was rising and timely; the Coalition developed and launched the Natural Capital Protocol in July 2016.

Inspired by the Kyoto Protocol, the Natural Capital Protocol produced a standardised framework for business and the private sector to be able to follow a standard methodology to track and monitor their risks and impact on the natural resources, which further allowed for wider application for a number of other business processes (Natural Capital Coalition, 2015). The intention was to ensure that businesses use standard methods that would facilitate reporting and disclosure for both policy compliance and investors. The scale, however, was at the project or product development level. The protocol provides an initial list of

natural capital assets and the respective services that they provide (Natural Capital Coalition, 2016). This is intended to guide businesses to undertake their own assessments of their dependencies and risks on natural capital. However, this list of capital assets is not a formal classification system and, further, it does not explain how to deal with multiple assets interacting with each other to produce services (Smith *et al.*, 2017). The formal classification systems that exist and are used as part of the SEEA-CF are effective for use with the SNA, but their application for the private sector and business is unknown (Leach *et al.*, 2019).

The Institute for Development of Environmental-Economic Accounting (IDEEA), together with the Natural Capital Coalition, formed a network called Combining Forces (IDEEA, 2018). The idea behind this network was to provide a platform for joint collaboration on natural capital between both public and private sectors such that there is joint action for the mainstreaming of natural capital into the economic system. The combining forces ideology has led to the Human and Social Capital Coalition and the Natural Capital Coalition combining forces into the Capitals Coalition. The intention is to create harmony, synergise efforts, improve understanding and integrate natural capital thinking (Natural Capital Coalition, 2020).

3.3.5 Global Reporting Initiative (GRI)

As a means to facilitate reporting on economic, social and environmental performance amongst organisations, the Global Reporting Initiative (GRI) developed sustainability reporting guidelines. What started out with a small group of organisations in 1997, complying with sustainability reporting, has expanded to 93% of the major corporations reporting against the guidelines on their sustainability performance (GRI, 2020). The guidelines are, however, voluntary and draw on the three pillars of sustainability of environment, social and economic, using a comprehensive list of integrated indicators that record the multiple facets of sustainability (Lamberton, 2005). Moneva, Archel and Correa (2006) argue that defying boundaries for in-depth sustainability reporting is necessary to increase the accountability of reporting institutes to actually achieve the aim of reporting which is sustainability. GRI operates within the interface between governments

and business and there are expectations that GRI would support reporting against the sustainable development goals (GRI & UN Global Compact, 2018).

3.3.6 Online tools

In keeping with advances in information technology, a number of online tools and downloadable software versions are available to assist users to undertake informed decisions about the valuation of natural capital and ecosystem services. Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) is an online tool that allows business to find detailed information on how the environment affects the economy. The tool provides information on the dependencies and risks associated with changes in the environment. Users are able to use the software to identify the key drivers of change for specific locations, which provides information to support decision-making and assess business risk. ENCORE is a tool that was developed in partnership with the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and the Natural Capital Finance Alliance (NCFA) , to assist financial organisations to adequately understand and measure their risk to natural capital in an organised and holistic manner (NCFA, 2018). Integrated Valuation of Ecosystem Services and Trade-offs (InVEST) is also free downloadable software that allows users to spatially assess the value of benefits of nature that underpin human existence (Natural Capital Project, 2020). The tool, developed by the Natural Capital Project hosted by Stanford University, provides choices for decision-makers based on information on trade-offs, even at local micro level, that are adequately quantified, allowing for better informed investment options (Arcidiacono, Ronchi & Salata, 2015). For example, South Africa, through the Project for Ecosystem Services, applied the Invest tool to value ecosystem services of water provision within a local district municipality (UNEP, 2016). These online tools are in a state of constant refinement, with the latest versions of the software becoming more user-friendly and freely accessible.

3.3.7 Ecological footprint accounts

Ecological footprint accounts provide information on a nation's demand and consumption patterns against the available natural resources. The footprint, at

most scales from an individual to a country level, can be measured and if the outcome is found to be more than the biological capacity of a particular region, then an ecological deficit called 'overshoot' would be recorded (Global Footprint Network, 2003). Since the 1970s, there has been a recorded overshoot each year. The value of ecological footprint accounts is, however, understated. Monfreda, Wackernagel and Deumling (2004) argue that with sufficient comprehensive data, ecological footprints can provide significant comparable information on the total consumption patterns of a nation. Such detailed information is an important measure of the total impact of trade on the environment.

3.3.8 Beyond GDP

This is an initiative that was conceptualized by the European Union in 2007, because of the limitations of conventional macro-economic indicators, such as the commonly used gross domestic product (GDP), in adequately measuring economic prosperity (European Commission, 2019). The SNA also highlighted the limitations of GDP in taking into account adequate measures of the contributions of the environment to the economy (Giovannini & Rondinella, 2018). The first set of EEA accounts being officially published constitutes the statistical community's response to move beyond GDP (Hein *et al.*, 2020). This agenda is gaining traction with a number of countries exploring wellness indices, happiness indices, and green GDP, which could in future serve as an alternative to GDP.

3.3.9 Natural Capital Accounting and Valuation of Ecosystem Services in South Africa

Context and value were identified attributes of NCA and, as such, since the study was convened in South Africa, a brief account on the progress on NCA in South Africa was necessary. South Africa has had a long history, together with a number of supporting legislation and policy entry points, in supporting the development of NCA, producing accounts for energy, water, minerals and fisheries (SANBI & Statistics South Africa, 2018). Scholarship on unpacking components of biodiversity and developing further the concept of ecosystem services has led to better understanding on how to measure and value biodiversity (Brummitt *et al.*, 2016:1). The concept of ecosystem services has provided an opportunity to

express a range of values of biodiversity and ecosystem services in order to give it sufficient weight in the decision making process (Costanza, *et al.*, 1997:259). A recent study using mapping and valuation of ecosystem services estimated the total value of ecosystem services of freshwater, terrestrial, and estuarine habitats to be estimated at R275 billion per annum to South Africans (Turpie, Forsythe, Knowles, Blignaut & Letley, 2017). A number of other valuation studies on biodiversity and ecosystem services have been conducted.

The Natural Capital Accounting and Valuation of Ecosystem Services Project (NCAVES), building on previous developments on NCA, was initiated in 2017, with five (5) participating countries, including South Africa. The aim of the project was to increase the evidence base for NCA through setting up pilot projects for the SEEA-EEA implementation. The project is being implemented as a partnership between the United Nations Statistics Division (UNSD), United Nations Environment Programme (UN Environment), with financial backing from the European Union (EU). The intention with many of these projects is to integrate local experiences with participating countries and align them with the SEEA and other international initiatives. The project has resulted in multi-stakeholder engagement, with many participating departments, institutes and stakeholders (SANBI & Statistics South Africa, 2018). The project has complemented the review of the SEEA with the intention to complete the review and adopt the SEEA-EEA as a standard by 2021 (Hein *et al.*, 2020).

The project has also been a catalyst for many policy processes and institutional restructuring at the country, regional and global level. Available data and expertise in spatial mapping and ongoing consultation and engagement, locally, regionally and internationally, have allowed the development of national ecosystem accounts for rivers; land and terrestrial ecosystem accounts; accounts for protected areas; species accounts for rhinoceros and cycads, and land accounts for metropolitan municipalities (Atkins, Maroun, Atkins & Barone, 2018; Hein *et al.*, 2020; Nel & Driver, 2015; Statistics South Africa, 2020).

3.3.10 Policy relevance and mainstreaming

Globally, a number of policy drivers have provided the entry points for the national implementation of NCA (Table 3.2).

Table 3.2: Policy drivers and imperatives for NCA

Driver	Policy Imperative
TEEB (TEEB for Policy Makers) (TEEB, 2010)	Recognising the value of biodiversity
CBD Aichi Biodiversity target Strategic Plan for Biodiversity 2011-2020. (CBD, 2010)	Recognising the value of biodiversity and integrating it into key planning processes
Natural Capital Declaration (UNEP, 2012)	Integration of natural capital into private sector accounting
World Forum on Natural Capital (2013) Policy Dialogue on NCA	Promotion of understanding, consultation and engagement
Gaborone Declaration for Sustainability in Africa (GDSA) (GDSA, 2012) A special appendix to the declaration on NCA	Historical resource exploitation and improvement in social capital Integrating the value of nature into national policies and programmes
SDGs (UN, 2015) & UNEA Resolutions (UN General Assembly, 2016)	Sustainable natural capital management
IPBES Assessments (African Regional Assessment, Global Assessment, Draft Values assessment) (IPBES, 2020)	Improving the evidence base of the local context
CBD Decisions on Mainstreaming (CBD, 2016)	To increase and elevate the use of NCA
Forum on Natural Capital Accounting for Better Policy Decisions (WAVES) (Vardon <i>et al.</i> , 2017)	Policy relevance and sharing of information
Post-2020 Agenda (2019) (CBD, 2020)	Systemic transformative change

The increasing policy relevance of NCA has resulted in increased implementation of the SEEA (Hein *et al.*, 2020). TEEB catalysed a number of processes that have led to decision-making and policy reform where NCA has been mainstreamed into development plans and other national strategies. In South Africa, NCA has been included as an activity under the mainstreaming objective of the revised National Biodiversity Research and Action Plan (NBSAP) (DEA, 2015). The CBD Aichi biodiversity target has been one of the early policy provisions for NCA (CBD, 2010). However, once this CBD decision was adopted, very little was known as to how mainstreaming should have occurred. Soon thereafter the CBD developed the ENCA-QSP to give guidance to stakeholders. Progress on NCA implementation has led to further inclusion of accounting in the CBD mainstreaming decisions at COP 13 (CBD, 2016). The Natural Capital Protocol was also recognised and

adopted as a mechanism to mainstream natural capital into the private sector (CBD, 2016).

The Natural Capital Declaration provided high-level exposure to NCA, where Heads of State and key stakeholders from the private sector participating in Rio+20 started to delegate roles and responsibilities for NCA that cascaded through hierarchical structures. The World Forum on Natural Capital that was dominated by delegates from the northern hemisphere as well as participants from the private sector highlighted the inadequate participation of both public and private sectors from developing countries (Sullivan, 2014). This stakeholder and participant dynamic at the World Forum on Natural Capital promoted additional engagement and consultation of stakeholders' representatives of developing countries. This further catalysed the government dialogue on natural capital, which increased the number of public sector actors from developing countries. The GDSA elevated NCA on the continent of Africa to a political level such that significant decisions on natural capital at the various sessions of the African Ministerial congress on the Environment were adopted. The World Bank WAVES programme held its 4th Policy Dialogue forum in 2019, demonstrating a shift in focus from merely producing accounts to addressing the policy relevance and uptake of the accounts. Mainstreaming has been found to be an active process of opportunistically identifying entry points along the NCA process. Mainstreaming has also been described as an unrewarded function where some key principles apply for optimal effectiveness (ONS, 2017). The post-2020 process to secure a good deal for nature has identified NCA as a key mechanism to effect systemic transformative change (AMCEN, 2019). NCA is therefore being described as an effective integrated mainstreaming tool (IIED, 2015).

3.4 SOCIO-ECOLOGICAL SYSTEMS

Because of the increasing need to understand, identify and categorise the interactions between nature and people, socio-ecological systems have emerged as important accounting units (Anderies, 2015). These systems aim to move beyond a silo mentality, where biodiversity and ecosystems and people are seen as separate entities (Davidson-Hunt & Berkes, 2003). Berkes and Folke (1998)

argue that improving our understanding of the complex dynamic of people and ecology cannot be achieved by using a silo perspective. There is an expanding body of knowledge that can be applied to develop ways to measure the resilience of these systems (Brand & Jax, 2007). However, it is not enough just to know about the interactions between the sociological and ecological interface, but other factors that emerge are also important. These other factors relate more to what emerges from the interactions than the technical descriptions of either the social or the ecological aspects. Socio-ecological systems provide information that direct reporting and accounting approaches.

3.5 SOCIAL DIMENSIONS IN ACCOUNTING

A common thread amongst these complementary processes and initiatives is the need to measure the value of the environment and its components and subsequently attain sustainability. All the precursor initiatives, as well as those that have emerged in a parallel process to NCA, are underpinned by the pursuit of sustainability. Mensah and Casadevall (2019) argue that sustainability is underpinned by equity amongst the social, environmental and economic pillars of sustainable development. The increase in the number of indicators for environmental and social elements of complex socio-ecological systems has operationalized sustainable development (Jones, 2010). However, reporting and accounting for these complex interactions and relationships within the environmental and socio-ecological interface have allowed different accounting approaches to emerge. These accounting approaches, whilst progressive and constantly refined to optimise accounting, can be challenging in the absence of standard methodologies to measure and classify the various elements of the socio-ecological system (Barreteau *et al.*, 2016). Russel *et al.* (2017) argue that “ecology centred” accounts or ecological accounts do not adequately integrate the diverse perspectives, values and issues of socio-ecological systems, although they may have the potential to integrate interdisciplinary as well as socio-political issues. Morton, Pencheon and Squires (2017) claim that the SDGs are this unifying factor for joint collaboration and synergy amongst all other pursuits and approaches. New approaches have, however, emerged within the social

accounting field and have challenged the norm within the accounting discipline (Barreteau *et al.*, 2016).

3.6 LEADERSHIP AND CO-CREATION IN NCA

Natural Capital, amongst the other identified capitals, has been elevated in importance in recent years as a result of the challenging complexities associated with achieving sustainability. Sustainability challenges are a consequence of increased environmental degradation, biodiversity loss, anthropogenic climate change and overall global change that have affected the biophysical environment. Several influential people considered to be leaders, by virtue of their character traits, position, and background, amongst other factors, have taken actions on natural capital. It can be argued that leadership is necessary to address these global challenges. To this effect, NCA evolved as a mechanism or tool to address global issues of sustainability.

Regarding the **context** within which the need for sustainability has unfolded, NCA provided a multidisciplinary multi-level context for leadership emergence. A better understanding of this call for leadership may have been necessary to advance the implementation of the natural capital approach according to a globally acceptable standard. Hence, through the specific practices, capabilities and principles that emerged during the evolution of the concept of NCA, key principles for leadership in natural capital accounting necessary to advance the implementation of NCA have surfaced throughout the research. The joint and shared vision for natural capital between both public and private sectors which resembled the key attributes of both relational leadership theory and the tenet of co-creation, provided the linkage between NCA and leadership in fostering joint solutions to natural capital challenges. This very nature thereof is a process of co-construction.

Because of the complex nature of global challenges, many of these issues could not be addressed individually. It required a concerted effort by many actors working together to realise a potential solution. Key strategic **partnerships** and burgeoning **relationships** may have been necessary for joint action. A key initiative underpinning the NCA movement was the World Bank WAVES

programme, which was established based on partnerships at all levels (Waves, 2019). Hence, elements of co-creation were evident in both leadership, in particular, relational leadership and NCA, but how the co-constructing nature of relational leadership theory matched, drove or acted in parallel to the co-constructing nature of NCA's development was unknown and was therefore a worthy scholarly pursuit.

The interactions, engagement and **communication**, amongst all actors, may also have been necessary to effect change. Exactly how this engagement was taking place was an area of interest (Bass, Ahlroth, Ruijs & Vardon, 2017).

Further, natural capital issues were found to affect people and their livelihoods. It therefore became a personal and **emotional** issue, as people were found to be sensitive when their immediate environments or their livelihoods were being threatened (Nicholson & Kurucz, 2019). In addition, the **value created** for any suitable intervention would raise questions because of the vested interests of multiple actors.

NCA has many steps, processes and actors that have different needs and requirements. It can be argued that as this concept unfolded, it took on many different forms requiring many different actors, and hence gaining a better understanding of these multiple processes would illuminate the interacting dynamics responsible for its evolution. Furthermore, whether or not this evolution was taking place individually or in unison with its multiple actors was also considered important for a desired outcome. The outcomes or products of NCA, having gone through multiple processes, provided a basis or benchmark for how the various technical specifications and specialist requirements may have led to joint outcomes (Spurgeon, 2015, Vardon *et al.*, 2017). Ruijs and Vardon, (2018) argue that principles exist which are living that need to be tested, reviewed and applied to all those who produce accounts and those who are the end-users who use the accounts for several reasons. The United Kingdom also developed a set of principles for their roadmap to develop and use accounts that would highlight nature's value (ONS, 2017).

There appeared to be a lot going on within the evolution of the NCA case context. Several authors have also highlighted a number of challenges experienced with the production of accounts and their use and uptake, and several other issues that have surfaced when there exists a multidisciplinary, multi-level case context of this nature (Hein *et al.*, 2020; Spurgeon, 2015). Nicholson and Kurucz (2019) argue that relational leadership is becoming an exploratory area of research for improving our understanding of how to integrate systems that maybe necessary to achieve sustainability. This overlay of relational leadership with that of the multidisciplinary multi-level processes of NCA provided an exemplary case context for improving our understanding of the co-creation of leadership. The pre-defined themes for the research were identified based on these synergies and complementarities between the key attributes identified for co-creation, relational leadership and NCA. Other sub-themes, principles and features emerged as a result of the socially constructed nature of relational leadership theory as the overarching theoretical framework for the study. Emergent sub-themes were categorised accordingly (Figure 3.2).

RELATIONAL LEADERSHIP	CO-CREATION	NATURAL CAPITAL ACCOUNTING
<ul style="list-style-type: none"> • Relational • Purpose • Inclusive • Empowering • Ethical • Process oriented 	<ul style="list-style-type: none"> • (Co)Collaborative/Joint • Value • Dialogue • Access • Risks and/or benefits • Transparency 	<ul style="list-style-type: none"> • Multidisciplinary • Multi-level • Multi-dimensional • Emergent and evolutionary • Expert based • Stakeholder driven • Context sensitive • Value based • Relational



PRE-DEFINED THEMES AND SUB-OBJECTIVES				
CONTEXT	VALUE CREATION	COMMUNICATION	PARTNERSHIPS AND RELATIONSHIPS	EMOTION
How leadership functioned in the context of NCA?	How value was co-created within and between relationships?	How communication between the various emerging relationships promoted or impeded the co-creation process?	What was the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA?	What was the role of emotions in the co-creation process of leadership?

Figure 3.2: Key attributes of relational leadership theory, co-creation and NCA

3.7 SUMMARY

This chapter introduced the case context of NCA and provided an account of how NCA served as an exemplary case and provided the necessary context to explore the overarching research question of how leadership was being co-created within the multidisciplinary process of NCA.

The chapter provided background to the case context, and described how precursor developments and initiatives supported the emergence of NCA. It also described further complementary processes and initiatives that evolved in parallel and in support of NCA.

The chapter concluded with some of the developments within the case context that complemented and strengthened the results of this study. Key features and attributes of relational leadership, co-creation and NCA were presented alongside each other, which underpinned the development of pre-defined themes and their subsequent sub-objectives.

The next chapter provided a comprehensive account of the methodology for the research. It further demonstrated how this chapter provided the data sample for the research for which experts from within the case context, at multiple levels (global, regional, national, sub-national and local), were selected. The case context of NCA therefore provided the multidisciplinary, multi-level context for the study. It was also described as an exemplary case context for undertaking the research.

CHAPTER 4: METHODOLOGY

4.1 INTRODUCTION

Chapter 1 introduced the research problem and provided an overview of the subject matter of leadership. It identified co-creation as the object of enquiry within the selected theoretical frame of relational leadership. The chapter provided a brief description of the case context of NCA as the unit of observation for the research. A brief account of the overall methodology of how the research was undertaken was included. The chapter concludes with an overview of the research and the layout of the thesis.

Chapter 2 went into more detail about leadership and, in particular, relational leadership as a socially constructed process. It concluded with an overview of co-creation as the object of enquiry for the research and further rationalised the use of case-studies for qualitative leadership research.

Chapter 3 explained and provided the rationale for the use of NCA as an emergent case which served as the unit of observation for the research to explore how leadership was co-created. NCA was a multidisciplinary case context that had multiple forms and consisted of multiple actors and processes. It therefore provided the context for socially constructed realities.

The aim of this chapter (Chapter 4) is to present the research design and methodology.

4.2 RESEARCH PROBLEM AND OBJECTIVES

Westling and Sharp (in Bartels & Wittmayer, 2018) argue that co-inquiry and co-creation of knowledge for sustainability issues, such as water, climate change and other ecological constraints on the environment are interdependent and therefore relational in nature.

Research or inquiry can therefore be considered to be a relational process. The field of research on leadership, as an area of inquiry or scholarship, is also

increasingly seen as relational (McNamee & Hosking, 2012). The literature on relational leadership has shown two main approaches emerging, which may have similarities and synergies, but their implications for inquiry and practice are varied:

1. The first approach has focused attention on the individual or entity perspective, where individual traits, attributes and behaviours interact and engage in social exchange and where knowledge comes from this social exchange and reality is individually constituted (Uhl-Bien, 2006:661).
2. Relational perspectives see leadership as a socially constructed process within a discrete organised context of relationships, where knowledge emerges from the nexus of relations and reality lies in the context of the relationship itself (Uhl-Bien, 2006:661).

Relationships are important (McNamee & Hosking, 2013:27) and complex, and studying their processes are more challenging, particularly in diverse or multiple realities.

This research therefore aimed to gain a better understanding of how Leadership was co-created through a relational leadership lens. It was decided to locate this research in one of many multidisciplinary approaches to sustainability. NCA is seen as one of these approaches to sustainability and was selected as the case context of this research. A relational leadership lens or approach is still very much in its infancy but flexible enough to cater for the dynamic contexts where leadership is investigated.

The research therefore interrogated leadership, using the multi-level processes of NCA as a case context, to answer the overall research question of:

How leadership was co-created in the emergent case of NCA?

It can therefore be argued that by investigating leadership in the context of the emergent case of NCA, the research required making sense of these complex socially constructed processes and thereby improved understanding of the role of co-creation in the relational leadership theory. The objectives of the study were therefore:

Objective 1: Improved understanding of the role of co-creation in relational leadership theory. The outcome of this objective included the key tenets of co-creation.

Objective 2: Added evidence to relational leadership theory as the lens for investigating co-creation. The outcome of this objective is a construct of co-creation for relational leadership.

Objective 3: Identified principles under which Natural Capital Accounting emerged as a concept. The outcome of this objective is a list of core principles for Leadership in Natural Capital Accounting.

The NCA case context involved stakeholders from various disciplines and sectors. It also included selected actors and processes from the public, private, parastatal and non-governmental organisations at multiple spatial levels, especially those targeted sectors that have been instrumental in the evolution of NCA. Leadership was investigated through “expert” eyes, actions, interactions and experiences of how individuals come to be seen as leaders. NCA provided an exemplary case context for the research, where the multiple contexts could be observed within the framework of NCA evolution.

4.3 THEORETICAL PARADIGM

Mertens (2005:7) argues that: “A researcher’s theoretical orientation has implications for every decision made in the research process, including the choice of method. It is true that many researchers proceed without an understanding of their theoretical paradigm or philosophical assumptions”.

Whilst most scholarship acknowledges the need for a theoretical framework that discloses how the researcher sees and interprets the world which underpins certain philosophical assumptions that influence and shape a researcher’s thinking and action, it is noteworthy to mention that there are also divergent views on declaring upfront an underlying research paradigm and linking it to the methodological choices in the study. Such views argue that making sense of data

and interpreting findings without deep ontological and epistemological reflection, is not a prerequisite for research and to some extent can even hamper the research process (Mertens, 2005:7; Patton, 2002:69). The issue is more about researching complex phenomenon like Leadership, and in particular Leadership processes and relational dynamics at a micro level, which may require the use of multiple or a combination of research approaches. The challenge then becomes choosing at which stage in the research does the researcher apply the one approach and at which stage does he or she apply the other approach. At this point it would be appropriate to declare the researcher's background:

The researcher has two Master of Science degrees; one from the University of the Witwatersrand on the Cryopreservation of two indigenous species, H. koelmaniorum and H. limifolia, and the 2nd Master of Science degree is from the University of Kent, Canterbury, UK, in Conservation and Tourism. The former research was a laboratory-based research study which was the researcher's first encounter with quantitative research and a positivist paradigm. The latter study was a resource economics study and the first exposure to social science research. In addition, the researcher has a pragmatic approach to most life issues as a result of more than 18 years' experience, working for the South African government as a conservation biologist in the environment and agriculture sectors. The declaration therefore serves as an indication of the researcher's frame of mind in undertaking the research and choice of research paradigm.

Crafford (2015) reiterates the importance of the research paradigm or design, which serves as a blueprint for the researcher to plan and execute the research in a manner that would increase the knowledge and further understanding of the subject matter under investigation. The key elements of any research design include the ontology, epistemology and methodology, which are essential elements for any research study.

Ontology is the theory of existence or, more specifically, what really exists or that which is considered to exist only because its constituents or building blocks exist (Bullock & Trombley, 1999:609). Ontology is important for research as it reveals the researcher's belief systems about the world, his or her reality and views on

human nature. Thus the ontological stance of the researcher can have an impact on the way the researcher analyses the data and interprets and presents the findings of the research. A positivist paradigm, which can be described as seeking the objective truth, has increased knowledge of the physical world and highlighted some appealing areas of interest in the social sciences (Mackenzie & Knipe, 2006). For this qualitative research study on relational Leadership, critical realism was chosen as the researcher's ontological position. Critical realism, which is similar to a positivist paradigm, adopts a position that any phenomenon would exist independently of the individual (Bullock & Trombley, 1999:669).

Leadership is a phenomenon which is socially constructed and therefore dependent on humans for it to exist (Martin & Halsall 2017). There is some observed tension created with Leadership being perceived as a human dependent, socially constructed phenomenon and the adoption of critical realism as the researcher's chosen ontology and therefore some flexibility maybe required when researching a thorough understanding of leadership. The tension arises with critical realism offering a structured approach which tends to be at odds with the socially constructed nature of leadership. However, critical realism, as much as it provides structure to any research endeavour, is also flexible enough to accommodate perspectives from both a positivist and a subjectivist approach and when combined with a mixed method or adaptive approach adopted by the researcher, critical realism can be a useful philosophical framework (Taylor, 2018). Leadership is not always observable, but where it does take place, its impact can be observed or felt. Critical realists interpret reality at three identifiable levels, which includes the empirical, that which is seen by humans, secondly, at the level of events or experiences, i.e. within context, and thirdly, at a deeper level, that which is the result of causal powers (Kempster & Parry, 2011:107). These causal powers can be intransitive, for example the physical units and/or processes of the natural world, such as gravity and ecological functions, or they can be transitive, which include the social practices, theories and technologies, for example the individual acquired attributes, such as language and ideas (Baskar, 2008). All three levels identified are, however, considered real. The transitive elements, because they are socially real, can be better understood through intellectual pursuit, from practice or technical experience and intuition.

The intransitive powers are more challenging to capture and understand. The natural world is made up of processes and mechanisms that are independent of humans and it therefore cannot be reduced merely to events or experiences. For example, the complexity of biodiversity, comprising numerous species, complex ecological processes and different pressures, functioning synergistically to effect multiple outcomes, makes it relatively difficult to study, monitor and measure (Brummitt *et al.*, 2016:1). The deeper level of understanding of leadership reality as a result of transitive or intransitive causal powers, whichever the case may be, has not yet been sufficiently researched and therefore strict adherence to a critical realist ontology may risk the ability to reach a deeper understanding of leadership processes and further knowledge regarding relational leadership.

For this study, the research objectives emerged mostly from intransitive objects. The research used NCA as a case context with a focus on the evolution of the concept. NCA is a multi-level, multidisciplinary process that has taken on multiple forms, consisting of multiple actors and processes and therefore served as an exemplary case context to explore how leadership was co-created within these processes. The focus of the research was on the interactions, relational dynamics and/or the social constructions within the case context, where leadership was investigated more for its emergence in the way the actors experience specific processes. The transitive objects of the case context, which included numerous frameworks, outputs such as the natural capital accounts of NCA itself, accounting and natural capital theories and practice, supported this research. The focus of the research was on gaining a better understanding of how leadership was co-created through investigating the experiences and interactions of selected NCA stakeholders considered to be 'experts'⁴ in their field of practice and training.

Epistemology is defined as the theory of knowledge which seeks to determine what knowledge is, where it is coming from, and how knowledge is differentiated

⁴ Caley *et al.* (2014:232) argue that an expert is generally described as somebody with comprehensive and authoritative knowledge on a specific subject matter that is not held or known by most people. Expertise and/or expert knowledge is provided by someone considered to be an expert.

from other sources, including its limitations (Bullock & Trombley, 1999:279). Mellor (in Baskar, 2008:29) argues that ontology is reliant on epistemology “since what we can know to exist is merely a part of what we can know”. Baskar (2008:29), however, argues against Mellor in that something can exist but we may not necessarily be aware of it. How we perceive reality does influence beliefs about the origin or source of knowledge. It is the objective of any research endeavour to find new knowledge or to question and improve existing knowledge. For this research on improving understanding of how leadership is co-created in the different micro-processes of relational leadership theory within the different contexts of NCA, a relational constructionist perspective was adopted.

Prior to a discussion on relational constructionism, it is worthwhile to discuss the modalities of social constructionism. Mertens (2005:231) describes social constructionism as a perspective where reality is not absolute but exists in multiple forms that are socially constructed and coordinated within time and context. Where reality is considered not to be absolute or complete, it is suggested that the knowledge derived from such a reality does not come from what individuals have but that which is created or shaped by groups of people. McNamee and Hosking (2013:25) suggest that knowledge through a social constructionist perspective can be considered to be social achievements or social innovations that are produced by groups of people coordinating their activities. This is where the multiple realities make sense, where knowledge is not what a single person has or believes in, but what a group of people or a community believes in. Such beliefs are, however, determined or influenced by time and space. Kempster and Parry (2011:107) argue that the processes of construction have a historic origin that is drawn from global experiences but occur through local relationships. For leadership studies, social constructionist views therefore recognise the social side of humans, but also further acknowledge that individuals do bring something of themselves in producing relationships and practices within different cultural contexts.

Relational constructionism has an emphasis on relational processes as compared to pre-existing notions of individuals, their interaction with social structures and their subsequent impact on how they see the world (McNamee & Hosking, 2013:XIV). There is an epistemological assumption that participants of the

research would provide their perspectives from their lived experience. In this case, it would be the way they have experienced the different processes of relational leadership within the dynamic context of NCA rather than their existing expert knowledge, which to all accounts does have an impact on or influence the way knowledge is generated. Coale (1994:14) further elaborates that the narrative of individuals can be deconstructed and new realities co-constructed between researcher and participant, which re-emphasises the role of the researcher as an important part of the research process, in collecting the data, analysing it, interpreting it and creating the new knowledge that is often required of any research. A relational constructionist perspective, which views knowledge between the self and others as socially constructed, co-evolving, inter-/co-dependent was a favourable position for the present research to investigate how co-creation was occurring within the processes of relational leadership. The tensions that may have risen from the researcher's chosen ontological position of critical realism and an epistemological position of relational constructionism were expected to be resolved through the methodological choices and the assumptions made for the research.

4.4 RESEARCH DESIGN AND METHODOLOGY

Methodology, which is a term often used interchangeably with methods and/or design, can be described as the 'science of methods', where the how of some process, activity or principle is explored through a general investigation of its aim, objective and the relationship between its components (Bullock & Trombley, 1999:526; Mackenzie & Knipe, 2006:4). Methodology is an overall plan of action that makes any research or enquiry come alive, pulling together the ontological, epistemological and theoretical positions of the researcher. A fundamental aspect of any research process is therefore the determination of the research methodology and the analytical and/or theoretical framework to be followed.

Garbarino and Holland (2009) explain that the fundamental differences between qualitative and quantitative research methodology are essentially how the different types of data are produced in the research process. Quantitative research methodology are commonly known to produce data that are often presented as

figures and numbers, whilst qualitative research methodology, which seeks to illuminate specific experiences within the subject matter under investigation, produces data that is written up, often in a contextual or narrative manner (McQuarrie & McIntyre, 2014). Using mixed methods research methodology, which involves a combination of both qualitative and quantitative methodologies, including a mix of different approaches within each type of methodology, further augments and improves the research process (Harrison, 2013).

Researching the phenomenon of leadership, which can be described as a complex, multi-level socially constructed process, would require the use of multiple, integrative, multi-level methodological approaches (Yammarino & Dansereau, 2008:140). The transition of leadership research, from studying individuals to better understanding the continuous social flows, processes and subtleties of leadership, has moved more towards qualitative methodological approaches and innovations where recent scholarship has shown new knowledge emerging within leadership theory (Stentz *et al.*, 2012:1174). The proposed research adopted a qualitative methodological approach, using a relational theoretical framework. Relational leadership theory provided an overarching framework for a range of techniques, methodologies and ontologies that investigates the relational tensions that are involved in the production and functioning of leadership (Uhl-Bien, 2006). Further, inherent in relational leadership theory, were micro-processes which provided the evidence of how co-creation took place.

A summary of the methodology and design of the entire research process provides a snapshot of the research and serves as a quick reference guide for the reader.

Table 4.1: Summary of methodology and research design

Broad research design	Rationale
RESEARCH TITLE <i>Leadership in Natural Capital Accounting</i>	A qualitative research case context investigating how Leadership is co-created within the emergent case of NCA.

RESEARCH PARADIGM		
KEY ELEMENTS	CHOICE	REASON
Ontology	Critical realism	The pursuit of an understanding of the hidden or embedded relationships and structures that are socially constructed using a relational leadership lens.
Epistemology	Relational constructionism	Multiple realities within a dynamic case context where knowledge between the self and others is socially constructed, co-evolving, inter-/co-dependent.
Methodology	Qualitative case context approach using a relational leadership theoretical framework to research discipline experts within a case context of NCA	Illuminates in-depth specific relational tensions and experiences of experts in a dynamic context of NCA within relational leadership theory which provides the evidence of how co-creation took place.
RESEARCH METHOD	TYPE OF DATA COLLECTION	REASON
	In-depth, semi-structured interviews	Data collection triangulation to strengthen the research design, reduce bias and increase validity and reliability.
	Focus group	
	Anonymous survey	
DATA COLLECTION		
TYPE	SAMPLE SELECTION	EXPLANATION
Semi-structured interviews	The sample of experts was chosen from the global pool, including regional and national experts Representative sampling of the case context was maintained through categorisation of participants into three broad schools of thought: SEEA, TEEB & WAVES	Main data source for the study to obtain primary data from NCA expert participants Interview instrument Skype/Personal/Telephone interviews Recording Transcriptions
Focus group	Focus group convened at Statistics SA, comprising six participants from the Department of Environmental Affairs and Statistics SA, including two discipline experts	To complement semi-structured interviews and to obtain a perspective of group dynamics within the case context Focus group instrument Facilitated group discussion Recording

		Transcriptions	
Anonymous stakeholder survey	The survey was administered to a combined pool of 512 NCA stakeholders who were participants/ delegates of events/ platforms (period June to December 2018) where NCA was a confirmed agenda item or the main subject matter of the event/platform	To complement semi-structured interviews and to obtain a broader stakeholder perspective. Surveys/E-mail requests Returned, completed surveys	
DATA ANALYSIS			
	METHOD	CODING	PRESENTATION
	Thematic analyses	Deduction: (Manual coding; Pre-defined themes) Open coding: Atlas.ti (Version 8)	Atlas.ti network outputs, Microsoft Excel graphs and tables Frequency/Density (measured by number of times); Patterns and relationships of dominant themes, constructs and tenets (measured by number of times indicating strength/ groundedness)
ETHICAL CONSIDERATIONS	Anonymity Consent forms		
OUTCOME			
A construct of co-creation in relational leadership, improving understanding of the role of co-creation in relational leadership theory. A core set of principles for leadership in NCA.			
Key tenets within relational leadership theory of how co-creation occurred.			

4.4.1 Data sample identification

Stentz *et al.* (2012) make a strong case for the use of qualitative approaches for leadership research, such as the use of case studies and content analyses of interviews and focus groups, claiming that new understandings emerge from such practices. Poulis *et al.* (2013) claim that case contexts provide more flexibility for business related research. A case context approach was therefore used for this

research. NCA, which is a multidisciplinary, multi-level concept, was therefore considered as an exemplary case context for this research to deepen understanding of relational leadership theory of how co-creation took place.

4.4.2 Selection of participants

The evolution of the concept of NCA, which is a global phenomenon or movement (United Nations, 2012; Vardon, Burnett & Dovers, 2016:146), served as the chosen case context and subsequent data sample for the present research. The selection of participants for the research was guided by a literature review of NCA which has been presented in Chapter 3 of the thesis. The literature review entailed document analysis, literature review and, where possible, past and present participant observation. Internet searches and organisational websites were consulted to obtain the relevant documents that were already in the public domain. The document analysis therefore identified key organisations, including the identification of stakeholders/participants involved in the process of NCA (Figure 4.1).



Figure 4.1: Types of organisations found in the literature contributing to the evolution of NCA

The government organisations identified as taking the lead in the development of the concept of NCA, depending on the administrative structures within the respective countries, included central government or federal government, and their entities and/or agencies (Table 4.2).

Table 4.2: Government organisations and their entities/agencies identified as leading the evolution of NCA

Lead government	Type
United States Federal Government	Government
National Aeronautics and Space Administration	Entity/Agency
National Science Foundation	Entity/Agency
National Socio-Environmental Synthesis Center (SESYNC)	Entity/Agency
Department of Commerce (Bureau of Economic Analysis)	Entity/Agency
United States of America Department of Interior: US Environment Protection Agency	Entity/Agency
European Union	Government
European Space Agency	Entity/Agency
European Commissions	Entity/Agency
French Government	Government
German Government	
German Ministry of Development Cooperation	Entity/Agency
Finnish Government	
Dutch Government	
Statistics Netherlands	Entity/Agency
Dutch Environment Agency	Entity/Agency
South African Government	Government
Department of Environmental Affairs	
Department of Science and Technology (Council for Scientific and Industrial Research)	
Minister in the Presidency	
South African National Biodiversity Institute	Entity/Agency
South African National Parks	Entity/Agency
Statistics South Africa	Entity/Agency
Mexican Government	Government
Commission for Biodiversity Knowledge and Use	Entity/Agency
National Institute of Statistics and Geography (INEGI)	Entity/Agency
Australian Government	Government
United Kingdom Government	Government
Department for Environment, Food and Rural Affairs	
Department for International Development	
United Kingdom Office of National Statistics	Entity/Agency

Scottish Government	Government
Office of National Statistics	Entity/Agency
Scottish Environment Agency	Entity/Agency
Federal Government of Canada	Government
Statistics Canada	Entity/Agency

Other types of organisations identified as taking the lead in the development of the concept of NCA are presented in Table 4.3.

Table 4.3: Other organisations identified as leading the evolution of NCA

Lead organisation	Type of organisation
World Business Council for Sustainable Development	Business association
Institute of Chartered Accountants in England and Wales	Company
World Bank	Financial institution
United Nations and its relevant Departments Divisions and Programs United Nations Statistical Division United Nations Environment Program United Nations Development Program, United Nations Economic Commission for Africa, Latin America, Eastern Europe	Intergovernmental organisation
Intergovernmental science policy Platform for Biodiversity and Ecosystem Services (IPBES)	Intergovernmental organisation
Convention on Biological Diversity	International Environmental Agreement
Scottish Wildlife Trust	Non-governmental Organisation
World Wide Fund For Nature	Non-governmental Organisation
Conservation International	American non-profit organisation
International Union for Conservation of Nature	International organisation
Natural Capital Coalition	International organisation
University of Pretoria (Centre for environmental Economics and Policy in Africa (CEEPA))	Academia
University of Stanford	Academia
Yale University	Academia

The organisations and stakeholders/participants of the evolution of NCA identified above further directed the data collection method of the study.

4.4.3 Data Collection Method

Method can be differentiated from methodology in that it is the orderly and logical approach, measures and instruments used for the collection and analyses of data (Mackenzie & Knipe, 2006:4).

Data collection in qualitative research can take many forms, but the most commonly used methods include interviews and focus groups, which can be conducted in a formal structured, semi-structured or unstructured manner (Stewart, Treasure & Chadwick, 2008:291). Kelly (2013) argues that studies on leadership that make use of limited questionnaire and restricted survey instruments, that have already been drafted and presented to interviewees in a formal manner, are insufficient to research leadership. On the other hand, unstructured interviews without any predetermined ideas and links to preconceived theories take very long and are often very difficult to manage (Stewart *et al.*, 2008:291). Numerous leadership scholarships have called for in-depth interview methods that are intended to gain as much relevant information from the interviewees as possible, including their experience, views, opinions and knowledge on the subject matter under investigation. Flick (2002:89) argues that semi-structured interviews are an effective and flexible data collection method. The study therefore used a method of data collection triangulation⁵ which has been shown to have multiple benefits and subsequently enhances any research study (Thurmond, 2001:254). The data collection method chosen for the present research involved:

- a) Semi-structured interviews conducted with participants selected from within the case context of the evolution of NCA which served as the main source of data;
- b) Complemented by data gathered from convening a focus group; and
- c) Conducting a targeted stakeholder survey.

⁵ Triangulation is a research methodology combining two or more data sources to strengthen the research design, reduce bias and increase validity and reliability (Thurmond, 2001).

Since the research aimed to investigate how leadership was co-created within the relational dynamics of leadership, within the context of NCA, five key themes were deduced from the literature and were applied consistently to the design of the data collection instruments: the semi-structured interview instrument, the survey instrument and the focus group instrument (Figure 4.2) (See Chapter 2 for a detailed explanation of the pre-defined themes).

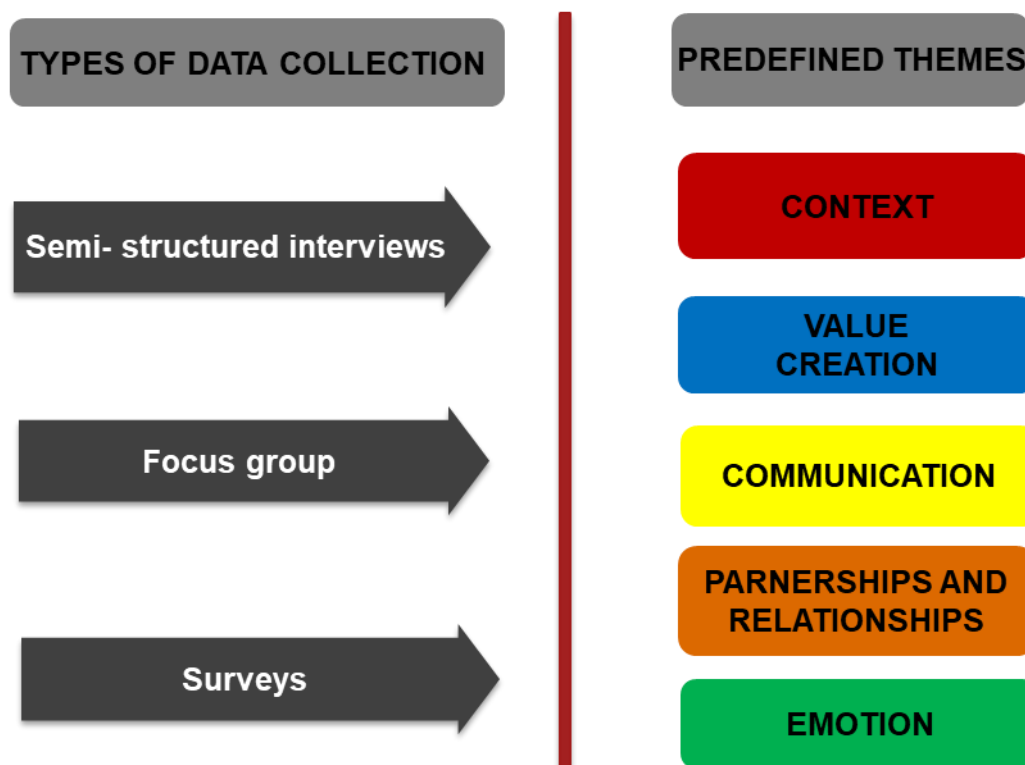


Figure 4.2: Data collection triangulation with five pre-defined themes

4.4.3.1 Semi-structured Interviews

Young *et al.* (2018) reiterate the value of using semi-structured interviews by many researchers for generating good quality data on complex and process-oriented issues. Meuser and Nagel (in Flick (2002:89), emphasise that semi-structured interviews can be adapted to conduct interviews with expert participants, where the focus is on obtaining information from the capacity of the individual as an expert in a particular field of activity. Uhl-Bien (2006) argues that everything is relational and, in contrast, knowledge or the information obtained from individuals is independent of the individual but interdependent on relationships and

processes. For this particular research, semi-structured interviews were conducted with 'experts' in the field of NCA, so-called 'discipline experts', where data was sought more for the way in which experts experienced the different processes of leadership within the multi-level, multiple processes of the case context of NCA.

Selecting the Participants

Semi-structured interviews were conducted with targeted individuals, deemed as experts who have experienced the subject matter in one way or another, particularly with regard to the process of NCA. Due to NCA being an evolving 'phenomenon', a limited number of experts existed globally, regionally and nationally. Vardon *et al.* (2016) reiterate that there are a limited number of published scholarly articles on the implementation of NCA, largely due to the uncertainty of practice and its limited implementation. In addition, a significant number of divergent views on the multiple steps or building blocks of NCA existed, which resulted in different schools of thought and discourses emerging in the field. The targeted individual experts were identified from the literature review on NCA, focusing on identifying experts who were following and practising three key approaches:

SEEA: System of Environmental Economic Accounting, United Nations System for Environmental Economic Accounting Central Framework (SEEA CF) as the global statistical standard for Natural Capital Accounting (UN, 2012b).

WAVES: Wealth Accounting and the Valuation of Ecosystem Services, World Bank Program supporting the integration of natural capital into national accounting (World Bank, 2014).

TEEB: The Economics of Ecosystems and Biodiversity, a United Nations Environment Program Initiative that, following the publication of the Millennium Ecosystem Assessment in 2005, catalysed new approaches to integrating priority ecosystem services into national policies (UNEP, 2010).

Categories of Participants

Naderifar, Goli and Ghaljaie (2017:2) argue that it is important to ensure a sample population of experts that is representative of the field of expertise under investigation in order to reduce expert ideological biases. Forty-two (42) NCA participants were identified from the published literature and from the global pool, comprising global, regional and national technical experts who were categorised into the three broad different schools of thought (SEEA, TEEB & WAVES). This categorisation was determined based on their engagement with these approaches, thus ensuring that a representative sample was maintained. The names of the targeted participants have been withheld to maintain their anonymity but their positions in their respective organisations and geographic location are included to demonstrate the multi-level nature of the present study (Table 4.4).

Table 4.4: Sample selection of NCA experts for semi-structured interviews

Geographical scale	Category/schools of thought	Level in organisation
NAME OF ORGANISATION	TYPE	TITLE/POSITION
INTERNATIONAL		
United Nations Environment Protection Agency	TEEB	TEEB Coordinator
	TEEB	TEEB secretariat
The United Nations Statistics Division	SEEA	Statistician, UNSD
	SEEA	Senior Statistician
United Kingdom		
Office of National Statistics	TEEB	Statistician
	TEEB	Branch Head
Convention on Biological Diversity	SEEA/TEEB/WAVES	Senior Programme Management Officer Head, Economic Policy and Resource Mobilization Unit
Scottish Wildlife Trust	TEEB	Chief Executive, Scottish Wildlife Trust
The Natural Capital Coalition	TEEB	Executive Director
	TEEB	Technical Director
International Union for the Conservation of Nature	SEEA/TEEB/WAVES	Director – Global Business and Biodiversity Programme
United States Environmental Protection Agency	SEEA	Office of Water, Office of Research & Development
The World Bank (Group)	WAVES	Senior Environmental Economist
Retired European Environment Agency Scientific Committee	TEEB	Consultant on Economic-Environmental Accounting

Resources for the Future	TEEB	Senior Fellow
EFTEC: Economics For The Environment Consultancy Ltd	TEEB	
Independent Consultant	SEEA	Resource Economist
Land Economy, Environment & Society SRUC	TEEB	Ecosystem Services Economist
NCC	TEEB	NCC Board member and researcher
Conservation International	SEEA/WAVES/TEEB	Head of Strategic Programs Africa Field Division (AfFD)
Moore Centre for Science	SEEA	Senior Technical Director
REGIONAL		
Namibia	SEEA	Consultant to the Namibian Government
Botswana	WAVES	Water Accounting Unit, Department of Water Affairs
	WAVES	WAVES Natural Capital Accounting unit, Ministry of Finance and Development Planning
Rwanda	WAVES	NCA Country Coordinator, WAVES
Madagascar	SEEA	Technical General Directorate Ministry of Water, Sanitation and Hygiene
Mauritius	SEEA/WAVES	Independent Freelance Consultant
Gaborone Declaration for Sustainability in Africa (GDSA) secretariat	SEEA	Technical Director - GDSA
NATIONAL		
Development Bank of Southern Africa	SEEA	Environmental Analyst
Department of Environmental Affairs	SEEA/TEEB	Director General
Statistics South Africa	SEEA	Principal Economist: Application of National Accounts
Statistics South Africa	SEEA	Executive Manager: National Accounts
National Treasury	SEEA	Tax Specialist
Department of Water and Sanitation	SEEA	Scientist
SANBI	SEEA/TEEB	Senior Biodiversity Policy Advisor
SANBI	SEEA/TEEB	Consultant
	SEEA/TEEB	Deputy Director General
WRC	SEEA	Researcher
WRC	SEEA	Researcher
UP	SEEA	Director, Centre for Environmental Economics

UP	WAVES	Centre for Environmental Economics and Policy Analysis in Africa (CEEPA) Professor
University of Nottingham Previously CSIR	SEEA/TEEB	Researcher

The identified participants were approached individually by e-mail during the period February to May 2018 to obtain their initial consent to participate in the research. An introduction to the research in the e-mail request provided a brief motivation to encourage the targeted individuals to participate in the research. It is declared that the position and academic background of the researcher in the biodiversity and conservation field was used to encourage targeted individuals to participate in the research. Christopaulos (2007) argues that researchers should be aware of response bias, and further claims that the robustness of the research process can be improved by measuring and including the response rates of participants in the findings. The response rates were varied amongst targeted participants, which can be attributed to several factors, including certain participants not responding to e-mails or e-mails getting lost in the system, staff turnover or people changing jobs or assignments. Follow-up e-mails were sent to remind potential individuals to participate in the research. Twenty-eight (28) positive responses were received, providing an initial pre-consent to participate in the research. Snowballing methodology accounted for some replacement of participants.

Number of Participants Selected

Young *et al.* (2018:10) argue that the use of the method of focused or expert semi-structured interviews is flexible enough to allow for a relatively small sample size whilst not compromising the integrity of the data sample. In cases where there are limited interviewees available, 12 to 60 participants are acceptable, with 30 being an adequate sample for any qualitative research project (Baker, 2012).

Snowballing methodology can be applied to access information from specific groups of people, including small sample expert groups, which improves the validity of the research process (Christopaulos, 2007; Naderifar *et al.*, 2017:3). Snowballing techniques were therefore used for the semi-structured interviews of

experts to capture adequately all the relevant data of the subject matter under investigation. The snowballing methodology accounted for any replacement of participants or until saturation was reached. Twenty-seven (27) semi-structured interviews were conducted during the period August to November 2018 (Table 4.5).

Table 4.5: Sample Selection of NCA experts interviewed (Semi-structured interviews)

Name and type of organisation	Atlas.ti reference	Title/position
INTERNATIONAL		
INTERNATIONAL ORGANISATIONS		
United Nations Environment	D33-Participant 10	TEEB coordinator
	D43-Participant 19	TEEB secretariat
The United Nations Statistics Division	D42-Participant 18	Statistician, UNSD
	D31-Participant 8	Senior Statistician
The World Bank (Group)	D41-Participant 17	Senior Environmental Economist
GDSA secretariat	D44-Participant 20	Technical Director – GDSA
The Natural Capital Coalition	D45-Participant 21	Executive Director
UNITED KINGDOM		
Office of National Statistics	D35-Participant 12	Director
Scottish Wildlife Trust	D40-Participant 16	Director
Natural Capital Committee	D48-Participant 24	NCC Board member and researcher
Land Economy, Environment and Society (SRUC)	D5-Participant 5	Ecosystem Services Economist
EFTEC: Economics For The Environment Consultancy Ltd	D37-Participant 13	Director
EUROPE		
European Environment Agency Scientific Committee (Retired)	D2-Participant 2	Consultant on Economic-Environmental Accounting
UNITED STATES OF AMERICA		
United States Environmental Protection Agency	D1-Participant 1	Office of Water, Office of Research & Development
Resources for the Future	D3-Participant 3	Senior Fellow
REGIONAL		
Namibia	D47-Participant 23	Consultant to the Namibian Government

Botswana	D30-Participant 7	WAVES Natural Capital Accounting Unit, Ministry of Finance and Development Planning
Madagascar	D49-Participant 25	Technical General Directorate Ministry of Water, Sanitation and Hygiene
Mauritius	D29-Participant 6	Independent Freelance Consultant
NATIONAL		
Independent Consultant	D46-Participant 22	Resource Economist
South African National Biodiversity Institute	D4-Participant 4	Consultant
	D32-Participant 9	Deputy Director General
University of Pretoria, Centre for Environmental Economics and Policy Analysis in Africa (CEEPA)	D50-Participant 26	Director
University of Pretoria, Centre for Environmental Economics and Policy Analysis in Africa (CEEPA)	D35-Participant 11	Professor
Anchor Consulting	D38-Participant 14	Director/Consultant
University of Nottingham Previously CSIR	D 39-Participant 15	Researcher
Ezemvelo KwaZulu Natal Wildlife	D51-Participant 27	Manager

Further detailed categorisation of participants proved challenging as almost all interviewees mentioned the three approaches at some point during the course of the interviews. Further, the three approaches (SEEA, TEEB and WAVES) overlap in many ways and many of the experts of NCA have since improved their collaboration efforts and recognise the SEEA as the central measurement framework. Notwithstanding efforts to converge thinking in the case context of NCA, numerous frameworks do exist, making implementation challenging (Bordt, 2017), and the issue of implementation subsequently provided the basis of enquiry of how leadership is being co-created within the relational dynamics and different processes of the NCA case context.

Data collection instrument

The interviews were conducted as semi-structured, exploratory interviews to allow for openness, while maintaining a focus on the key issues to be addressed. A semi-structured interview instrument was designed, taking into consideration the overarching research question: How is leadership co-created in the emergent case

of NCA? The instrument comprised 16 questions categorised into the five (5) emerging themes: Context; Value creation; Communication; Partnerships and relationships, and Emotion (see Appendix A for the complete semi-structured interview instrument).

Context

1. Explain your understanding of the NCA process focusing on the key highlights over the past 8 years.
2. Explain your role in the NCA process to date taking into consideration your personal expertise.
3. Clarify whether you see NCA as an evolution.

Value creation

4. What are your views on NCA related to its intended purpose?
5. Explain what (if any) are the priorities, targets and KPIs for the NCA process.
6. Can you explain how these targets are met?

Communication

7. How were roles and responsibilities allocated during the evolution of NCA and its process?
8. Describe the structures/networks involved (stakeholders) in the NCA evolution.
9. What are the barriers to effective communication on NCA and its process?
10. What are the opportunities for effective communication on NCA and its process?

Partnerships and relationships

11. List all partners in NCA including their specific role(s) in the NCA process.
12. How long do these partnership and/or relationships last?
13. Describe the partnership challenges on NCA evolution.

Emotion

14. Explain main drivers during the evolution of NCA and its process going forward relating to the behaviour of people and differing personalities.
15. Can you explain if the NCA process gives you a sense of encouragement?
16. What do you think is required to ensure fair and equitable benefit-sharing from NCA processes?

Prior information and/or scheduling were communicated with participants. Where possible, personal interviews were conducted. However, due to the scale of the research and considering that the identified experts were from the global, regional and national pool, and further taking into consideration availability of interviewees and global time zone differences, Skype and telephone calls were the most popular method of interviewing. All interviews were recorded and subsequently manually transcribed. Professional transcription services and dragon software were used, but due to the technical nature of the subject matter and the different dialects and accents of the interviewees, the interview recordings had to be transcribed manually by the researcher.

4.4.3.2 Focus group

Morse (in Thurmond, 2001:257) argues that for any research study, the primary source of data must be strong enough to stand on its own and any complementary methods, as part of methods triangulation, further strengthen the research. The researcher had anticipated hosting a focus group if it was required for the research or until data saturation was reached with the in-depth semi-structured interviews. However, one of the planned bilateral semi-structured interviews with experts took the form of a think-tank session or focus group. This focus group served the purpose of observing the group dynamics in that session.

Participants of the focus group

Stewart *et al.*(2008) claim that the ideal number of participants for focus groups is six (6), with a minimum of three (3) and more than 14 members being just as effective. A focus group was convened at the Statistics South Africa office, comprising six (6) participants from both the Department of Environmental Affairs in South Africa and officials from Statistics South Africa. Two experts who participated in the focus group were originally part of the sample for semi-structured interviews.

Table 4.6: Participants of the focus group

Name of organisation	Atlas.ti reference	Title/position
Statistics South Africa	D52- Participant A	Executive Manager: National Accounts

Statistics South Africa	D52- Participant B	Principal Economist: Application of National Accounts
Statistics South Africa	D52- Participant C	Deputy Director
Statistics South Africa	D52- Participant D	GIS Specialist
Department of Environmental Affairs	D52- Participant E	Assistant Director
Department of Environmental Affairs	D52- Participant F	Intern

Data collection instrument

Rosenthal (2016) maintains that in-depth interviews and focus groups are structurally very similar in nature but require more attention on the part of the researcher to administer open-ended questions to the members of the focus group, who subsequently may rely on each other to respond to the questions asked to the collective. Taking this into consideration, a focus group instrument was developed and used for the session, comprising six (6) questions categorised into the five (5) emerging themes of context, value proposition/creation, communication, partnerships and relationships, and emotion, as was done for the semi-structured interview instrument. The sixth question was directly linked to the overarching research question of the study of how leadership is co-created in the emergent case of NCA (see Appendix B for the complete focus group instrument).

Context

1. Can you explain if NCA as an evolution provides the necessary platform for co-creation and leadership to take place?

Value creation

2. What is the value proposition of the NCA process for leadership and decision-making?

Communication

3. Explain the role of communication in the NCA process.

Partnerships and relationships

4. How relevant is Partnerships for the NCA process?

Emotion

5. Explain the role of Emotion in the NCA process.

Additional Question

6. How relevant is the notion of co-creation in the NCA Process?

The session was recorded and the recording transcribed manually by the researcher.

4.4.3.3 Stakeholder survey

Christopaulos (2007:7) emphasises that expert surveys can result in better data with a higher degree of validity than large scale random surveys, resulting in what is referred to as a “pseudo-representative sample of experts”. Re-emphasising that the primary source of data for this study was the semi-structured interviews, an anonymous survey was executed to complement the semi-structured interviews and to obtain a broader stakeholder perspective.

Choice of Participants

The survey was not a random anonymous survey but rather administered to a targeted sample audience of stakeholders involved in the process of NCA, through their participation in selected events. These events, which were hosted by several different organisations around the world, took place during the research period from June to December 2018. The latest identified stakeholder events/platforms which featured NCA as an agenda item and topic of discussion are presented in Table 4.7.

Table 4.7: Sample selection of Stakeholder participants for the anonymous survey

Event/platform	Number of stakeholder participants
Convention on Biological Diversity Business and Biodiversity Forum, Finance and Investing Panel, November 2018, Sharm El Sheikh, Egypt	5
Third Forum on Natural Capital Accounting for Better Policy Decisions, November 2018, Paris, France	141
7th session of AMCEN and the consultative day for the African Biodiversity Summit, September 2018, Nairobi, Kenya	94
Asia and the Pacific Regional Expert Workshop on Ocean Accounts, August 2018, Bangkok, Thailand	85
Forum of Experts in SEEA Experimental Ecosystem Accounting, June 2018, Glen Cove, New York	96

Natural Capital Accounting and Valuation of Ecosystem Services (NCA&VES) Project national stakeholder workshop participant database, March 2018, Pretoria, South Africa	91
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Number of Participants

The participant lists of each of the identified fora were obtained online or requested via e-mail from the event organisers, and the survey instrument was then sent to the participants of the respective fora (Table 4.7). To avoid cross-posting and duplication, the participant lists of the respective fora were analysed so that participants would not receive the survey in duplication if they attended more than one of the identified fora. Those participants who were identified to participate in the semi-structured interviews were excluded from participating in the survey. The survey was then administered to a combined pool of 512 NCA stakeholders who were participants/delegates of the respective events/platforms where NCA was a confirmed agenda item or the main subject matter of the event/platform. A response rate of 20 completed surveys was received from the 512 targeted stakeholders. Christopoulos (2007:7) argues that a reflection on the response rates of expert surveys improves the robustness and confidence of the sample selection. Some of the reasons for not completing the survey, which reduced sampling bias through self-elimination, were based on the lack of suitability and competence to complete the survey. In some cases stakeholders expressed no further interest in the subject matter under investigation.

Data Collection Instrument

Numerous researchers have voiced their criticism regarding the use of surveys for qualitative leadership studies (Conger, 1998). However, when combined with other data collection instruments, surveys can result in the extraction of important information that can complement other data sources (Thurmond, 2001; Yammarino & Dansereau, 2008). A survey instrument was designed, similar in design to the semi-structured interview instrument, comprising 23 questions categorised as before according to the five (5) emerging themes of the research (see Appendix C for the complete stakeholder survey instrument).

Context

1. Explain your understanding of the NCA process focusing on the key highlights over the past 8 years.
2. Explain your role in the NCA process to date taking into consideration your personal expertise.
3. What were the major challenges in the NCA evolution?
4. What were the success stories of NCA to date?

Value creation

5. What are your views on NCA related to its intended purpose?
6. Explain what (if any) are the priorities, targets and KPIs for the NCA process.
7. Can you explain how these targets are met?

Communication

8. How were roles and responsibilities allocated during the evolution of NCA and its process?
9. Describe the structures/networks involved (stakeholders) in the NCA evolution.
10. Who decides on the media type, location and format of communication?
11. What are the different communication/media on NCA within institutions and with your partners?

What are the most important ones to achieve your targets?

12. What are the barriers to effective communication on NCA and its process?
13. What are the opportunities for effective communication on NCA and its process?

Partnerships and relationships

14. List all the partners in NCA including their specific role(s) in the NCA process.
15. How long do these partnerships last?
16. Who gives you your mandate and funding for NCA?
17. Who is needed to make decisions to invest in NCA and to collaborate on NCA?
18. Regarding data access, data providers, methodology, data compilation and analysis, who are your collaborators, users of the information and for what purpose?
19. Describe the partnership challenges on NCA evolution.

Emotion

20. Explain the main drivers during the evolution of NCA and its process going forward relating to the behaviour of people and differing personalities.
21. Can you explain if the NCA process gives you a sense of encouragement?
22. Does your professional environment take into consideration personal issues and views? How?
23. What do you think is required to ensure fair and equitable benefit-sharing from NCA processes?

A printed hard copy was available at the selected events and an electronic version was sent via a personalised e-mail to respective participants of the selected events. Participants were requested to provide their inputs after the closing of the event/meeting. For the electronic requests, participants were given one week from the date of request to provide their inputs. Follow-up and reminder e-mails were sent three times to the participants, after the closing date for inputs.

4.4.4 Data Analyses

Qualitative data analysis requires a strategy to firstly organise the data and then to search for trends, relationships, themes, patterns, deviations or outliers (Archer, 2018). For the analyses, themes that were constructed using a social constructionist approach and relational leadership theoretical framework, were analysed using the method of thematic analysis to answer the overall research question of how leadership was co-created within the emergent case of NCA. A summary of the structured process of how the data was analysed is presented in Figure 4.3. The detailed process that was followed in analysing the data is presented in Appendix D.

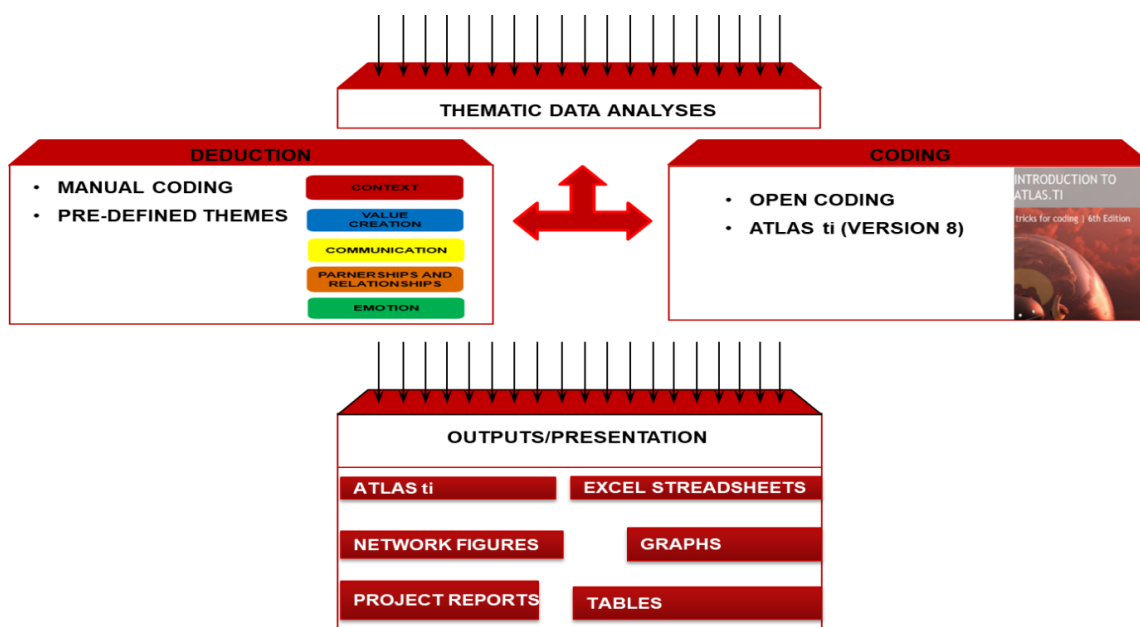


Figure 4.3: Data analysis structure and process

Thematic analysis, which is similar in nature to content analysis, referred to as thematic content analysis (Green & Thorogood, 2004). This is a popular mechanism for qualitative research (Flick, 2002) that uses a deductive method and a pre-defined coding framework based on the frequency or density of a theme or code occurring and reappearing in the data (Schreier, in Flick, 2014). Thematic analysis therefore uses the quantifiable elements of content analyses and presents the patterns and relationships between the codes in a systematic manner within context, where the final outcome or product of the data analysis at a most abstract level is the emergence of dominant codes and themes linked to the overall research question and objectives (Vaismoradi, Turunen & Bondas, 2013). Coding is therefore an intentional activity to make sense of the data by identifying, sorting, sifting and interrogating the data to facilitate the analysis (Archer, 2018). A deductive process of overlaying the relevant dimensions of relational leadership theory and the key tenets of co-creation, where synergies, complementarities and further categorisation into mutually appropriate terms (see Figures 2.5 and 2.7) has resulted in a pre-defined thematic framework for the research, focusing the object of enquiry on the five (5) pre-defined themes with respective sub-objectives for each theme (Figure 4.4). The pre-defined framework was further facilitated by the use of the Atlas.ti software and verified by the Atlas.ti consultant who evaluated the data analysis for co-coding.

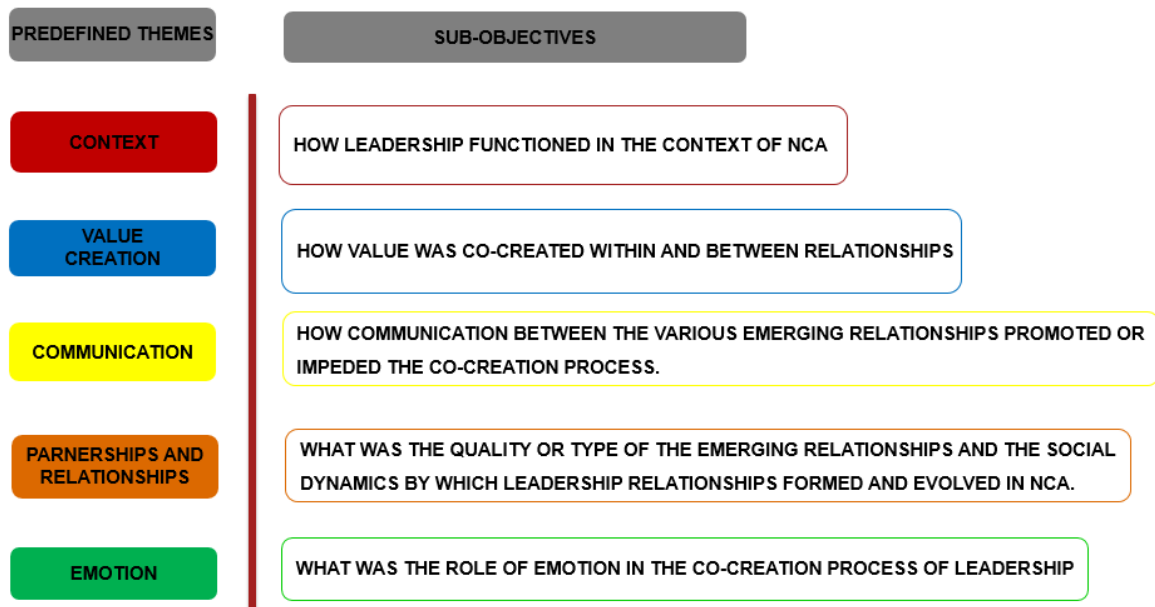


Figure 4.4: Pre-defined themes with sub-objectives

These five (5) pre-defined themes, which have been the starting point of the research, also resonated consistently in the design throughout all three data collection instruments, the semi-structured interview instrument, the survey instrument and the focus group instrument.

Frequency or density, which is termed “Groundedness” in Atlas.ti, which is the number of times the pre-defined themes and other emerging codes occurred in the data, was therefore considered and chosen as an important indicator (Archer, Van Vuuren & Van der Walt, 2017:49). Therefore, groundedness, together with patterns of dominance and interaction, informed the intended outputs of the three main objectives:

1. Key tenets of co-creation that provided a deeper understanding of the constituent elements that were necessary for co-creation to take place
2. A construct of co-creation for relational leadership that would contribute to strengthening relational leadership as a socially constructed phenomenon.
3. A list of core principles for leadership in NCA that would allow for the advancement of the concept and its further implementation.

Frequency, however, is not the only indicator of trends of codes and themes (Vaismoradi *et al.*, 2013). When frequency is combined with an explanation of the

frequency and interaction of the emerging codes and themes, the findings are enriched accordingly, contributing to the knowledge management process (Chenail, 2012). Codes within the pre-defined themes from the raw data were recorded for their occurrence and frequency. The research therefore adopted a method of theoretical triangulation of thematic analysis, focusing on frequency or density and their interactions and relationships between codes. Computer-assisted data analysis software was used to systematically manage the data analysis process.

4.4.4.1 Analysing the Data

Atlas.ti⁶ was used for the data analysis. Atlas.ti is a tool that assists with managing the data in a systematic manner. Optimising the use of the tool is very much dependent on the skill of the researcher in using the software effectively. After undergoing training in the use of Atlas.ti, the researcher used the software to generate code maps, frequency tables, code network figures, Microsoft Excel outputs and a consolidated code report categorising codes, themes and quotations in a systematic and logical manner (Archer, 2018; Archer *et al.*, 2017).

The first part of the process is preparing the data for analyses. Twenty-seven (27) semi-structured interviews and one (1) focus group were transcribed manually by the researcher. The survey comprised twenty three (23) questions. Twenty (20) completed surveys were received, comprising on average 4 pages each. All the documents, the transcripts of the interviews, the focus group and the surveys were cleaned. References to names of people were removed and replaced with pseudonyms where necessary to maintain anonymity and confidentiality.

The next part of the process involved creating a filing system within the software. A project bundle was created and a suitcase file opened for all outputs from the software which when generated were subsequently exported to the respective folders. The documents were then named generically and loaded into the software. Once loaded into the software, the documents were then allocated a

⁶ Atlas.ti is a computer-assisted qualitative data analysis software (CAQDAS) program used to organise qualitative data, making it easier to analyse and manage the data (Flick, 2014). Version 8 of the software was available for the data analysis.

name, for example D1. Because of the systematic and consistent design of all three data collection instruments, all data was loaded into one project bundle for analysis, which maintained the integrity of the three data sources but reduced the added value of data triangulation (Archer *et al.*, 2017).

The coding process was then initiated. Responses to questions within each theme were then coded accordingly using open coding as one of the choices within the software. 29 codes were generated and were categorised into the five (5) pre-defined themes of:

- Context;
- Value creation;
- Communications;
- Partnerships and relationships; and
- Emotion.

Code maps were developed for each of the pre-defined themes. The next part of the process involved revision of the coding process through comparing transcripts repeatedly and using the software to combine and delete codes. It must be noted that due to the strong contextual affiliation of some of the codes within the pre-defined themes, coding overlap did occur across and within themes. Coding overlap was managed by combing the codes where appropriate and deleting redundant codes. In some instances, code overlap was maintained as the respective codes were relevant across two themes, for example the code Culture of diverse views was shared between themes, Context and Value creation; the code Trust: legitimacy and consensus building was shared between themes, Value creation and Emotion. The Atlas.ti software assisted further in managing the code overlap. Code overlap was further acknowledged in the Results Chapter 5. Code maps were then generated which presented the codes for each theme. Network maps/figures were produced which showed the relationships between codes, including the code overlap (Figure 4.5), and frequency and density reports for dominant codes within the themes were then generated, indicating the code 'groundedness' or strength measured by frequency and density, i.e. number of times.

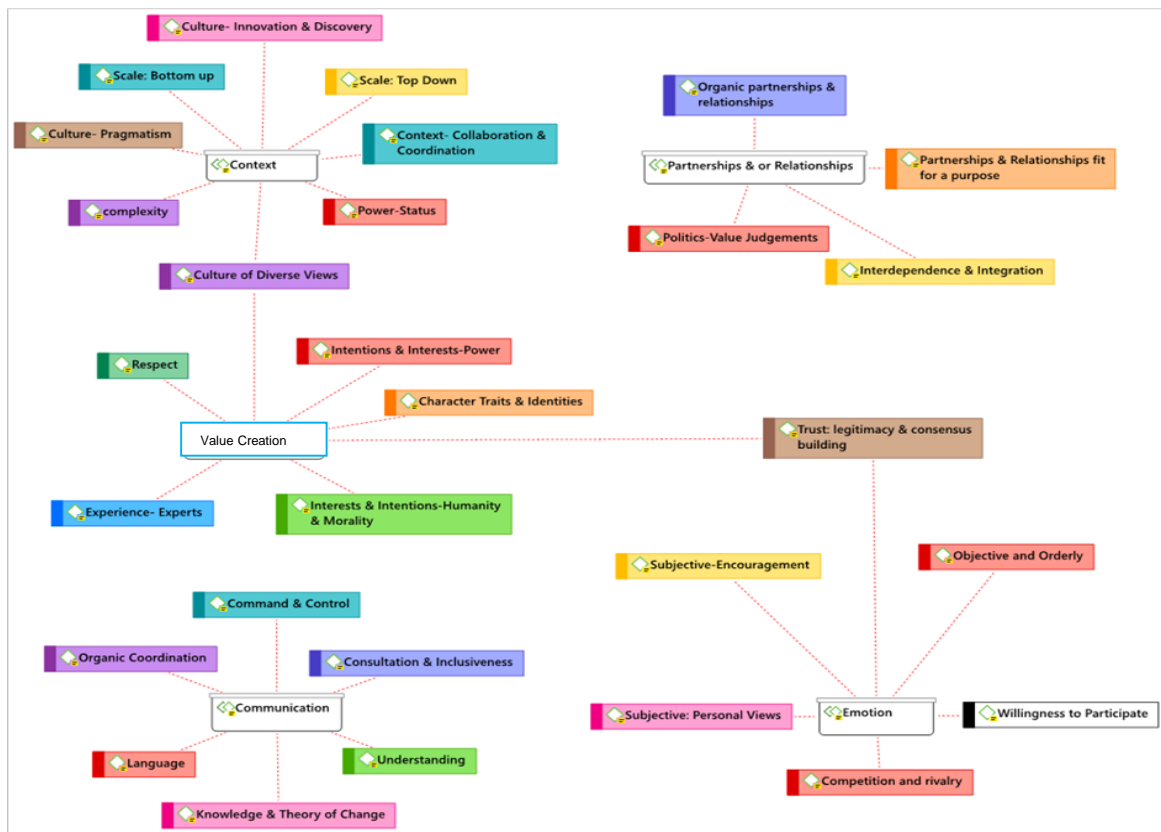


Figure 4.5: Codes generated and categorised according to pre-defined themes

The concluding step of the data analyses is the presentation and interpretation of the results. The software generated a 532 page report categorising the 29 codes and quotation content into the respective themes, for further interpretation and analysis by the researcher (Figure 4.5). Microsoft Excel Reports generated from the software containing information on quotation content, density of tenets, codes and references to the metadata, were analysed, categorising and coding quotation content further. Additional categorising, sub-coding and the use of collective terminology were sought from the published literature and from quotation content (frequently used terms and concepts from the responses). This additional sub-coding process was supported by the software Atlas.ti and Microsoft Excel analyses which provided information on quotation content, density within and across codes and the Atlas.ti reference (see Annexure I, Step 7.3). The Excel spreadsheets, which were an outcome of Atlas.ti, facilitated the calculation of the frequency of codes where the number of times a code appeared was calculated

using the summation function in Excel and the outputs comprised the highest numbers which were categorised and termed as the dominant codes respectively. The results were then presented in the form of bar graphs, figures and tables as outputs of Excel, which demonstrated the comparative strength of the various codes, indicating dominance. Though the frequency and density, i.e. the number of times a quotation appears within and across themes and codes were used in the calculations to demonstrate theme and code strength, the emergence of dominant themes, constructs and tenets, presented in excel generated bar graphs were more meaningful in addressing the research question of How leadership was co-created within the emergent case of NCA. Other figures merely presented the outcomes of the analyses from the excel reports in diagrams and info-graphs that were visually more appealing. Colour coding of the themes were applied which presented the results and discussion according to the respective themes to allow the reader to navigate with ease throughout the results and discussion sections.

The interpretation of the results was also supported by the direct quotations where appropriate, and was presented in boxes and referenced using the Atlas.ti referencing including the document number, paragraph number, document name and participant number, for example:

D3:8 <i>“a group of about 20 multidisciplinary experts trying to push forward the development of these accounts in the US”</i> - D3: Participant 3.

The responses of the participants of the research that most eloquently captured the essence, trends and frequency of the common themes, concepts and ideas, were selected as direct quotations and included in the thesis.

4.5 TRUSTWORTHINESS OF QUALITATIVE RESEARCH

Morrow (2005) argues that credibility, rigor or trustworthiness of any research is underpinned by the discipline being investigated. The criteria for trustworthiness apply to the entire research journey, which includes the following steps: 1. identification of the research problem; 2. the researcher’s philosophical standpoint; 3. method and research design; 4. presentation of findings and the write-up.

leadership, which is the object of enquiry of this research, is a complex, multifaceted, multi-level socially constructed process which has become an area of increasing scholarly pursuit, but also significantly difficult to research (Stentz *et al.*, 2012:1173). Qualitative research has become more popular in leadership studies in recent years, largely because of the need for more in-depth analyses of leadership. Leadership has also been viewed as a relational phenomenon (Fairhurst & Uhl-Bien, 2012). This relational perspective has subsequently required innovation or a combination of research approaches even beyond qualitative or quantitative methods (Parry, Mumford, Bower & Watts, 2014). The changing nature of the leadership research therefore provides some opportunities for qualitative research, particularly when combining or using mixed or multiple methods which have been known to improve credibility of results.

Shenton (2004) reiterates Guba's four (4) criteria needed to address the trustworthiness of qualitative research (Guba, 1981), namely credibility, where the researcher provides a realistic account of the subject matter under investigation; transferability, where the researcher tries to ensure that the findings can be applied in another context, given the context-specific nature of the leadership phenomenon; dependability, where the researcher tries to ensure that the study can be repeated at a different point in time by other researchers; and confirmability, which addresses biases that emerge from the acknowledgement that the researcher is an intrinsic part of the research process, where the outcomes of the research are that from the empirical data and not that of the personal views of the researcher. The following approaches adapted from several authors have been applied in this study to fulfil the criteria for trustworthiness of the data (Table 4.8).

Table 4.8: Steps and approaches undertaken to enhance the trustworthiness of qualitative data

Criteria	Approach	Explanation
Credibility	Method and theoretical triangulation	Method and theoretical triangulation have been known to increase the credibility of any study (Thurmond, 2001; Young <i>et al.</i> , 2018). <ul style="list-style-type: none"> Semi-structured interviews with experts within the context of NCA were complemented by targeted surveys and a

		<p>focus group session.</p> <ul style="list-style-type: none"> The relational leadership lens, combined with a critical realist ontology and relational constructionist epistemology, allowed for recognition of multiple realities within relational processes.
	Data collection instrument design	<p>Stewart <i>et al.</i> (2008) argue that a significant amount of thought needs to go into interview instrument design.</p> <ul style="list-style-type: none"> All three (3) data collection instruments comprised the pre-defined themes with sufficient open-ended questions per theme.
	Reflection on response rates of interviewees and survey respondents	<p>Christopaulos (2007:7) argues that a reflection on the response rates of expert surveys improves the robustness and confidence of the sample selection.</p> <ul style="list-style-type: none"> All 27 interviewees completed the entire interview process, with a range of duration from 30 minutes to more than an hour. One focus group was convened and 20 completed surveys were received from a combined sample pool of 512 NCA proponents.
Credibility, Transferability and Confirmability	Recording and transcription	<p>All data collection sessions were recorded using a mobile phone recording feature and transcribed immediately after the respective sessions, providing permanent records that can be accessed at any time (Stewart <i>et al.</i>, 2008).</p> <ul style="list-style-type: none"> Transcriptions were performed personally by the researcher. Dragon transcription software was applied to the recordings. However, transcription outputs from the Dragon software were of a poor quality because of the different range of accents of interviewees, which included American, British, Scottish, Spanish, French, Dutch and Chinese interviewees, amongst others. Many researchers also recommend professional services to transcribe interviews which are usually efficient and accurate in their transcriptions when evaluated against the recording. However, in this case, professional transcription services were sourced for two interviewee recordings and a further 3 transcripts were performed by interns who were inexperienced researchers. The transcription outputs from both these sources showed no difference in the

		<p>quality of the transcripts. All outsourced transcripts had to be redone by the researcher due to the technical nature of the subject matter under investigation, which further allowed for better accuracy of the transcripts and greater familiarity of the data for the researcher.</p>
	Member checking and verification	<p>Rosenthal (2016:512) refers to the process of member checking considered to be one of the highest levels of confidence of credibility, whereby participants are sent their transcripts to verify their responses accordingly.</p> <ul style="list-style-type: none"> • All transcripts were sent to the respective interviewees to verify if the transcripts were true reflections of their responses to the questions asked during the interviews.
	Co-Coding	<p>Rosenthal (2016) emphasises the need for triangulation or co-coding to ensure that the researcher has not excessively biased the final selection and clustering of codes and themes representing the data.</p> <ul style="list-style-type: none"> • Manual coding, using pre-defined themes, published literature and the internet, was used for coding. • Computer-Assisted Qualitative Data Analysis (CAQDAS), Atlas.ti version 8 software was used for open coding and to organise the codes and generate code maps for each of the codes within the pre-defined themes of the research. • Training in the use of Atlas.ti was undertaken. • A registered Atlas.ti consultant, who provided training to the researcher on the use of Atlas.ti, verified the coding process and confirmed the validity of the codes used. <p>The process of re-coding and clustering is not uncommon and improves the validity of the final set of themes and codes (Conger, 1998; Rosenthal, 2016). A process of analysing the codes for duplication and eliminating code duplication or combining codes, where appropriate, was undertaken.</p>
Transferability	Avoiding generalisation	<p>Nieuwenhuis (2007) claims that in qualitative research, avoiding generalisation in the data sample is fundamental.</p> <ul style="list-style-type: none"> • The researcher gained the perspective of experts from multiple levels and globally within the case context of NCA.
	Use of experts	<p>Bogner <i>et al.</i> (2009:11) argue that conducting interviews with experts on a</p>

		<p>particular subject matter is a sign of validation of the importance of the study, as most often these experts will only participate in other research if they see value in using the results or findings elsewhere.</p> <ul style="list-style-type: none"> • The NCA context is an emergent case that is multidisciplinary in nature. • The case context stakeholders and the Department of Environmental Affairs, South Africa, have expressed interest in the findings of the study for its applicability to other contexts. • The impact and transferability to other contexts cannot be ascertained at the time of writing up of the research.
Dependability	Repeatability of study	<p>Green and Thorogood (2004) argue that the repeatability of any study at different points in time by other researchers is taken into consideration.</p> <ul style="list-style-type: none"> • Data triangulation (multiple sources of data from semi-structured interviews, surveys and a focus group) was conducted.
	Auditing	<p>Flick (2002) argues that documenting the methodology of the study, data collection instruments, the transcripts of participants in the research, and the coding process can ensure reliability.</p> <ul style="list-style-type: none"> • Chapter 4 has been written as comprehensively as possible and the document audit trail (Shenton, 2004) will be addressed, as all documents are printed and filed for ten years in accordance with the ethical procedures of the University of Pretoria.
Confirmability	Managing Bias	<p>McNamee and Hosking (2013), Bogner <i>et al.</i> (2009), and Green and Thorogood (2004) argue that self-reflexivity, which is an important criteria for confirmability, acknowledges that the researcher is a fundamental part of the research process where there is co-construction taking place between the researcher and the subject matter being researched. As such, all research is therefore subject to researcher bias (Morrow, 2005).</p> <ul style="list-style-type: none"> • The entire research process was verified by Professor Derick De Jongh (Supervisor), who is a world-renowned leadership researcher, and on the technical side by Dr Joel Robert Houdet (Co-Supervisor), who is a NCA specialist/expert. • Sampling bias was reduced through

		adopting a method of snowballing and data methodological triangulation of interviews, surveys and a focus group.
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4.6 ETHICS OF THE RESEARCH PROCESS

Prior informed consent, anonymity and confidentiality are the most important elements for taking into consideration the ethical requirements of qualitative research (Stewart *et al.*, 2008; Young *et al.*, 2018). The study relied on information collected from targeted experts within the case context of NCA. Bogner *et al.* (2009) argue that when conducting purposeful sampling of experts on any subject matter, it is important to get the buy-in from prospective participants and to reassure them of exactly what the information will be used for. During the identification of the prospective experts for the semi-structured interviews, experts were approached by e-mail with an introduction of the research together with a motivation acknowledging their expertise on the subject matter under investigation, to consider participating in the research. The interviewees were informed that the researcher was interested to hear about how they experienced the subject matter or phenomenon under investigation. Prospective interviewees were also expected to send their prior informed consent in writing. These prior informed consent forms from experts were then used to apply for ethical clearance from the committee for research ethics at the University of Pretoria. Ethical clearance, which required the prior informed consent forms of the prospective interviewees, the approved research proposal and the title registration of the research, was approved by the committee in July 2018. The ethical clearance states explicitly that the researcher is still responsible to ensure compliance with the codes of research ethics of the University of Pretoria.

The design of the data collection instruments took into consideration the code of research ethics of the University of Pretoria, ensuring that participants were not compromised in any way or allowed to feel uncomfortable or uneasy when asked questions of a sensitive nature. The scheduling of the interviews had begun during the period from July to December 2018 according to the most convenient times as requested by the participants, taking into consideration the different time zones of the respective participants. In light of transparency and to manage expectations of

what would be discussed in the interview (Bogner *et al.*, 2009; Rosenthal, 2016), consent forms and the interview instrument were sent to participants prior to the interviews. The consent forms, which were requested to be returned with signatures, included provisions where participants were required to give their consent to participate in the study on a voluntary basis or choose not to participate and they could also stop participating at any time during the interview without any negative consequences. All interviewees signed the consent form and completed the interview process. Only one interviewee expressed hostility when asked a question about communication, but this was quickly resolved through the researcher motivating and encouraging the interviewee to continue with the interview.

Anonymity was maintained, as all names of participants were removed and replaced with pseudonyms, including persons referred to in the interview itself. The Atlas.ti software further allocated consecutive numbering to the participant transcripts and documents loaded into the project bundle, such as D1: Participant 1, D2: Participant 2, etc., ensuring that anonymity was maintained throughout the thesis. Direct quotations from participants used in the thesis were written in italics and within double quotation marks and referenced using the Atlas.ti numbering. All consent forms and interview transcripts that were sent to participants for verification are printed and filed for ten years in accordance with ethical procedures of the University of Pretoria.

Given the willingness of expert participants, the successful execution of the interviews, focus group and surveys themselves and the comprehensive transcripts generated, it was reassuring that the insights and knowledge gained from the experts participating in the case context of NCA have been more than adequate to answer the overall research question of how leadership was co-created within the emergent case of NCA, and to address the three objectives and outcomes of the study.

4.7 SUMMARY

The chapter presented a comprehensive account of the methodology of the entire research process. The overarching research problem was encapsulated by the research question of How leadership was co-created within the emergent case of Natural Capital Accounting. The objectives of the study were:

1. Improved understanding of the role of co-creation in relational leadership theory;
2. Added evidence to relational leadership theory as the lens for investigating co-creation, the outcome of which was a construct of co-creation for relational leadership; and
3. Given the use of the emergent case of NCA, identified principles under which Natural Capital Accounting emerged as a concept : the outcome was a list of core principles for leadership in Natural Capital Accounting.

The selected theoretical paradigms of the research and theoretical perspectives of the researcher were clarified in this chapter. This included the choice of relational leadership theory as the overarching research lens, combined with a critical realist ontology and a relational constructionist epistemology. The research was undertaken through a qualitative research approach, using semi-structured interviews, focus groups and targeted surveys of discipline experts within the emergent case of NCA. The chapter further elaborated on the trustworthiness of the research process and concluded with an account of the ethical procedures followed for the entire research process. The next chapter presents the results of the study in the form of tables and figures, indicating the dominant codes, sub-codes and themes that have emerged as a result of their frequency and density (number of times) and patterns of interaction within the themes and codes.

CHAPTER 5: RESULTS

5.1 INTRODUCTION

This chapter presents the results of the research after analysing and consolidating the data from all three sources (semi-structured interviews, focus groups and surveys). Archer (2018) argues that prior thought of how a researcher intends to present his or her findings after deciding on an appropriate methodological approach is an important step, since it is a reflection of the researcher’s logic of thinking. To answer the overall research question of how leadership was co-created within the emergent case of NCA, five (5) pre-defined themes, constructed through a social constructionist approach and using a relational theoretical frame, were extrapolated using quotation content from the three sources of data collected and were analysed further using thematic analysis. Twenty-nine (29) codes were generated and categorised into the respective themes (Figure 5.1).

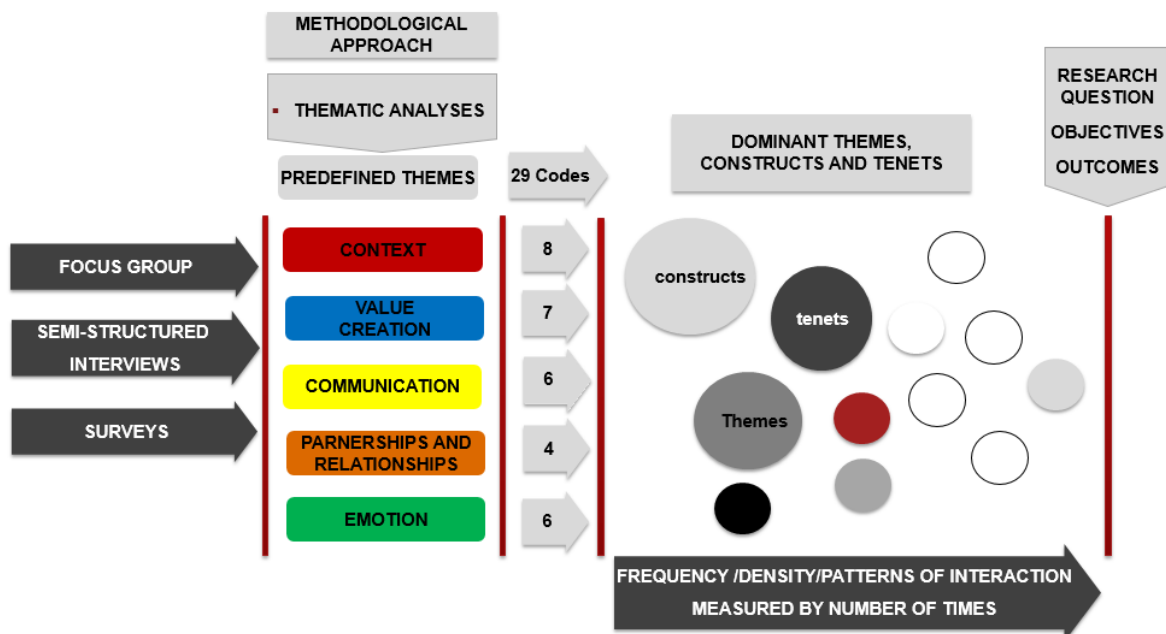


Figure 5.1: Summary of the process to present the findings of the research

Results are presented within the respective themes and colour-coded to allow for easy navigation through the chapter. The results are presented in the form of bar

graphs based on frequency and/or density and 'grounded'⁷ on quotation content, demonstrating the patterns of interaction and tensions between codes and emerging constructs. The dominant constructs and emerging tenets within the themes were contextually and strongly grounded, ranging from 61 quotations in support of some constructs and tenets to as many as 275 quotations for others constructs and tenets. It must be noted that all 29 codes, within their respective themes, are not presented to the same degree of detail. The results of all codes are presented in figures and infographs based on their interaction between and within codes and themes. Only the dominant key themes, constructs and tenets are presented in bar graphs indicating their relative strength based on quotation content (responses of participants), to address the three objectives and outcomes of the study:

Objective 1: Improved understanding of the role of co-creation in relational leadership theory, which would include the key tenets of co-creation.

Objective 2: Added evidence to relational leadership theory as the lens for investigating co-creation through the development of a construct of co-creation for relational leadership.

Objective 3: A list of core principles for leadership in Natural Capital Accounting.

The chapter concludes by presenting the key tenets within each theme.

The implications of the findings of these key tenets for the three main objectives are discussed in more detail in Chapter 6.

5.2 PRE-DEFINED THEMES

The themes, when viewed comparatively, contained their respective codes and were grounded according to their quotation content (number of quotations). Key

⁷ Grounded is a term used in the Atlas.ti software to specify the number of quotations grouped under each code (Archer, 2018).

results were presented for each theme and were derived from patterns of interactions and tensions within and between codes, constructs and the emerging tenets when viewed comparatively (Figure 5.2).

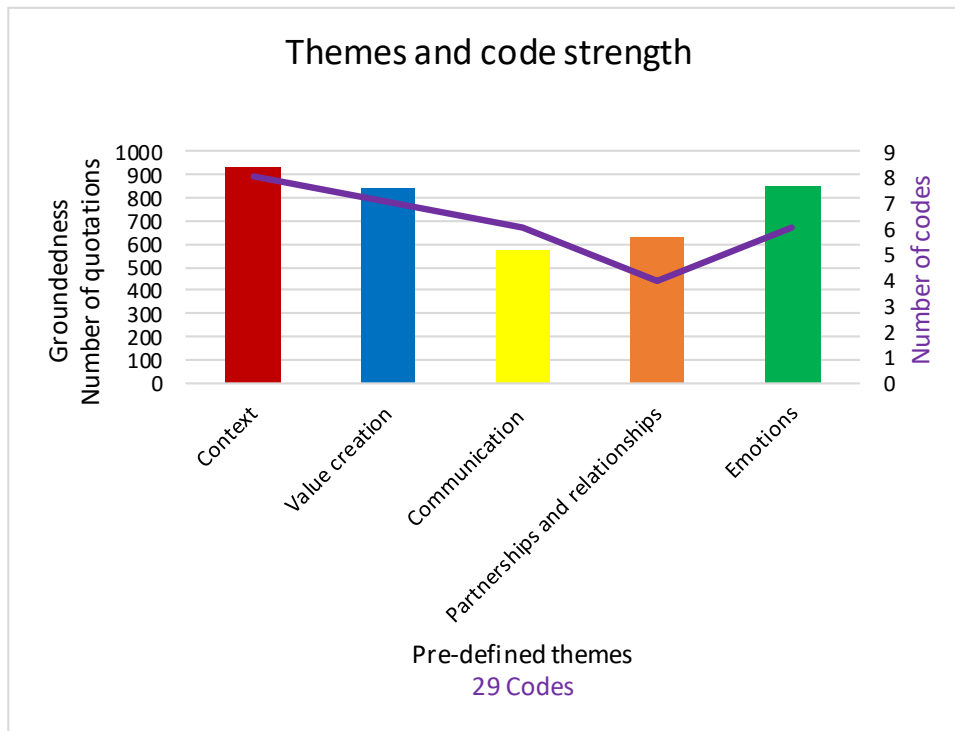


Figure 5.2: Relative strength of themes





The results of the dominant theme and its respective codes were presented to demonstrate the researcher's conceptualization and interpretation of the data (quotations). Thereafter, only the dominant codes within the other themes were presented in the form of graphs and figures based on their frequency and/or density across themes and codes. In this way, the most relevant codes emerged to develop the construct of co-creation and to address the objectives of the study.

Similarly, the constructs within the codes and the subsequent emerging tenets were determined and clustered using collective terminology from the published literature and from quotation content (i.e. the frequently used terms and concepts from the responses). This sub-coding process was supported by the Atlas.ti software and Microsoft Excel analyses (see Appendix D: Step 7.3). To reiterate, all the constructs within the dominant theme context were analysed further and sub-coded to produce the emerging tenets. This was done to establish a pattern of

analysis for the emerging tenets. Thereafter, only the dominant constructs within the other themes were sub-coded to produce the emerging tenets and the subsequent dominant tenet within that respective construct (Table 5.1). The themes were colour-coded consistently in the presentation of results and discussion which allows the reader to navigate with ease throughout the results and discussion sections.

Table 5.1: Themes, codes and emerging constructs and tenets

Theme	Codes→Constructs	Emerging Tenets
Context (dominant) █	Number: 8	
	Complexity (<i>dominant</i>)	Ambiguity (<i>dominant</i>) Space and system New Time Scale Multidimensional
	Culture – pragmatism	Ideological Feasibility Certainty
	Context – collaboration and coordination	Teamwork Interpersonal Cognitive
	Scale: top down	Powerful organisations Technical expertise Systems and tools Hierarchical structures Money Influential people
	Scale: bottom up	Systems, structures and tools Interdependency Creativity Volition
	Power-status	Position Influence Reputation
	Culture of diverse views	Cultural Disciplinary, practical, technical Ethical Progressive
	Culture – innovation and discovery	Processes, systems and people Supply driven Needs based Evolution

From this point forward only the dominant constructs were sub-coded to produce the emerging tenets and the respective dominant tenet within.		
Value creation 	Number: 7	
	Trust: legitimacy and consensus building (<i>dominant</i>)	Credibility (<i>dominant</i>) Salience Common goals Sharing Choice
	Character traits and identities	
	Culture of diverse views	
	Respect	
	Intentions and interests - power	
	Experience – experts Interests and intentions – humanity and morality	
Communication 	Number: 6	
	Understanding (<i>dominant</i>)	Conversation/Dialogue (<i>dominant</i>) Change Empathy Self-assess Team work Explain, interpret and apply Information technology
	Knowledge and theory of change	
	Organic coordination	
	Consultation and inclusiveness	
	Language Command and control	
Partnerships and relationships 	Number: 4	
	Interdependence and integration (<i>dominant</i>)	Structures and systems (<i>dominant</i>) Interactions Skills and discipline Attitude Reflection Adaptation
	Organic partnerships and relationships	
	Politics – value judgements Partnerships and relationships fit for a purpose	
Emotion 	Number: 6	
	Willingness to participate (<i>dominant</i>)	Optimistic (<i>dominant</i>) Sharing and learning Transparent Competence Inclusive Enthusiasm Reservations
	Competition and rivalry	
	Trust: legitimacy and consensus building Subjective: personal views	

	Objective and orderly	
	Subjective-encouragement	

5.2.1 Theme: Context ██████████

Context emerged as the dominant theme with eight (8) codes generated within this theme (Table 5.2).

Table 5.2: Theme: Context and its respective codes

Theme	Codes
Context ██████████	Number: 8
	Culture – pragmatism
	Context-collaboration and coordination
	Scale: top down
	Scale: bottom up
	Power – status
	Culture of diverse views
	Culture – innovation and discovery
Complexity	

For this dominant theme, each of the codes within this theme is presented in graphs and figures using the code definitions and responses (quotations) where appropriate.

Complexity emerged as the dominant construct within the theme Context (Figure 5.3).

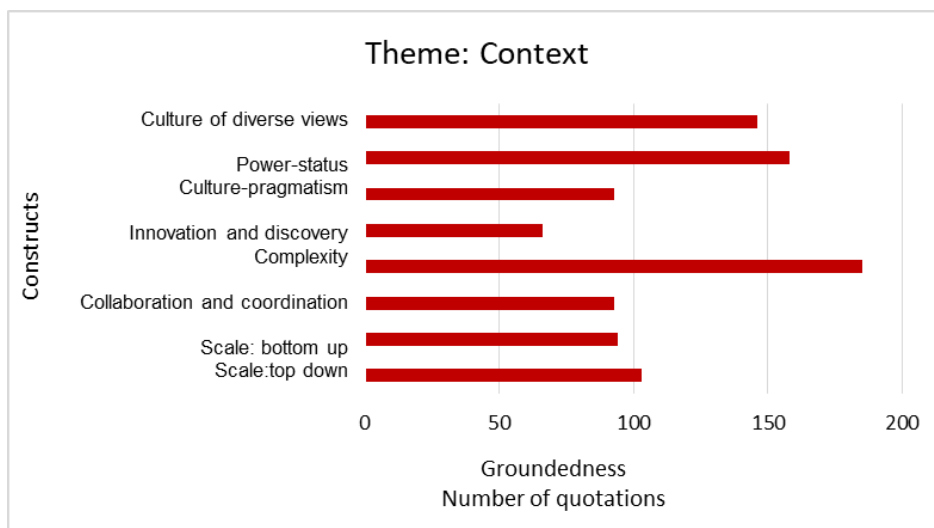


Figure 5.3: Relative strength of constructs within the theme Context

5.2.1.1 Complexity

The construct, Complexity, resulted in six (6) tenets emerging (Figure 5.4).

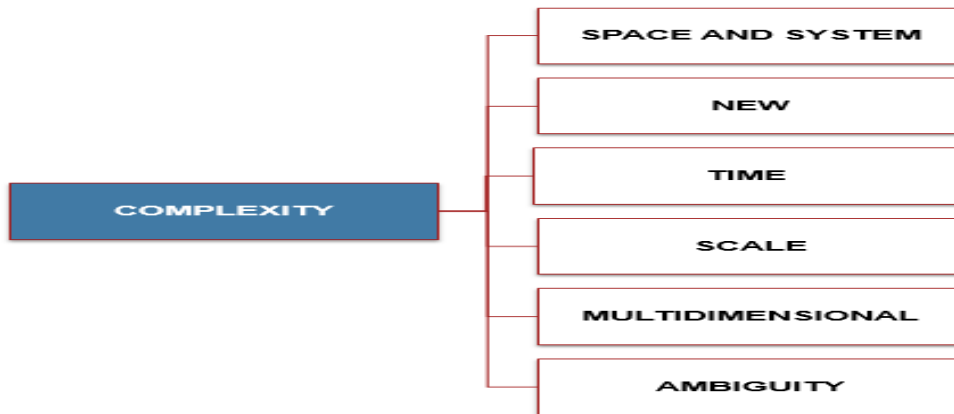


Figure 5.4: Construct Complexity and emerging tenets

The emerging tenets indicated the following:

- Space and system captured insights and experiences of the context and operating system;
- New, which highlighted the impact of the novelty or infancy of the subject matter under investigation;
- Time, which captured the nuances of time on the process;
- Scale, which is a factor in Context where the level of activity or experience was relevant;
- Multidimensional, where insights in the impact of various different processes were recorded; and
- Ambiguity, where the nuances of the uncertainty and the level of understanding of the subject matter were highlighted.

Dominant Tenet: Ambiguity

The tenet, “Ambiguity”, interacting within the dominant construct, Complexity, emerged as the strongest amongst the tenets “Multidimensional”, “Space and system”, “Time”, “New” and “Scale” (Figure 5.5).

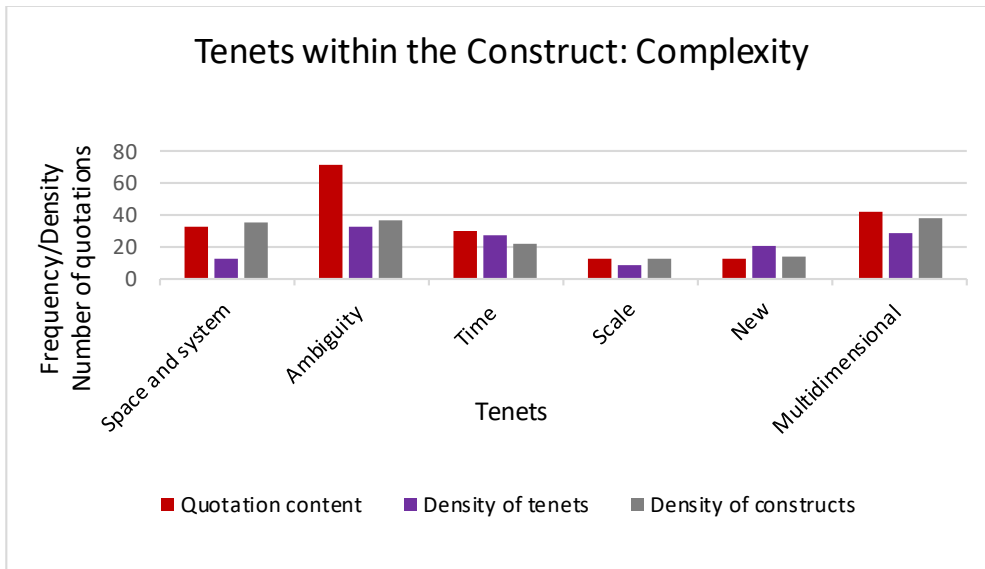


Figure 5.5: Dominant Tenet within the Construct Complexity

Tenet activity between tenets and across the respective constructs was expressed by density, i.e. how often the tenet or construct appeared in the other tenets and constructs. Quotation content was the number of quotations within the tenet.

5.2.1.2 Culture – pragmatism

The construct of Culture – pragmatism resulted in three (3) tenets emerging (Figure 5.6).

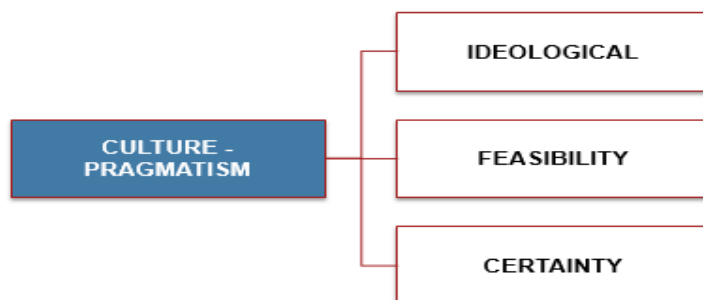


Figure 5.6: Construct Culture – pragmatism with emerging tenets

The emerging tenets indicated the following:

- Ideological clustered responses where agents and actors set forth a longer term aspirational vision and goal;
- Feasibility, where individuals, agents and actors, may have motivated and adequately convinced others about a particular vision and goal; and

- Certainty, where practical issues were addressed when articulating and determining goals, visions, and objectives.

5.2.1.3 Context - collaboration and coordination

The construct, Context - collaboration and coordination, resulted in three (3) tenets emerging (Figure 5.7).

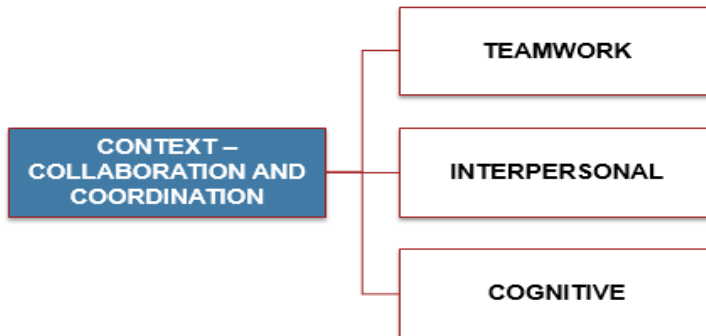


Figure 5.7: Construct Context – collaboration and coordination with emerging tenets

The emerging tenets indicated the following:

- Teamwork clustered responses on synergistic behaviour, common goals, mutual work ethos and other social relations;
- Interpersonal captured responses on the interpersonal and communicative dynamics of stakeholders; and
- Cognitive, where the emphases was on attaining insights on the integration of ideas and perspectives from the collaboration and coordination of stakeholders.

5.2.1.4 Scale: top down

The construct, Scale: top down, resulted in six (6) tenets emerging (Figure 5.8).

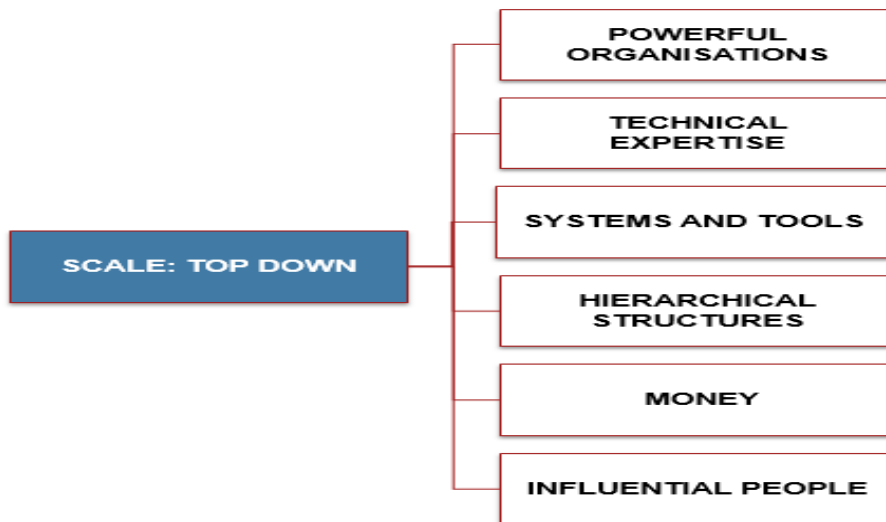


Figure 5.8: Construct Scale: top down with emerging tenets

The emerging tenets indicated the following:

- Powerful organisations clustered responses which provided insights on the role of strong and established organisations shaping agendas, structures and leadership;
- Technical expertise, where discipline experts also wielded their influence on processes;
- Systems and tools, where responses captured the impact of the structures and mechanisms that catalyse or even hamper processes;
- Hierarchical structures which underpin this code of top-down bureaucratic systems, where various social processes emerged in these systems;
- Money which may underpin power dynamics and have other implications; and
- Influential people where responses were captured for the role of individuals in various processes.

5.2.1.5 Scale: bottom up

The construct, Scale: bottom up, resulted in four (4) tenets emerging (Figure 5.9).

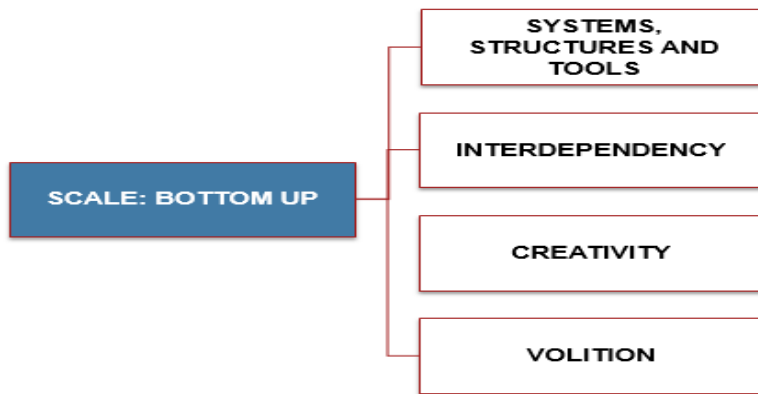


Figure 5.9: Construct Scale: bottom up with emerging tenets

The emerging tenets indicated the following:

- Systems, structures and tools clustered responses on the overall system with a focus on the formal and informal structures and mechanisms;
- Interdependency, which captured insights on interdependency between various factors and integration;
- Creativity, which clustered responses that demonstrated broader thinking, creativity and innovation or a lack thereof; and
- Volition, which captured the nuances of enthusiasm, willingness to participate, sense of ownership, including self-organisation.

5.2.1.6 Power – status

The construct, Power – status, resulted in three (3) tenets emerging (Figure 5.10).

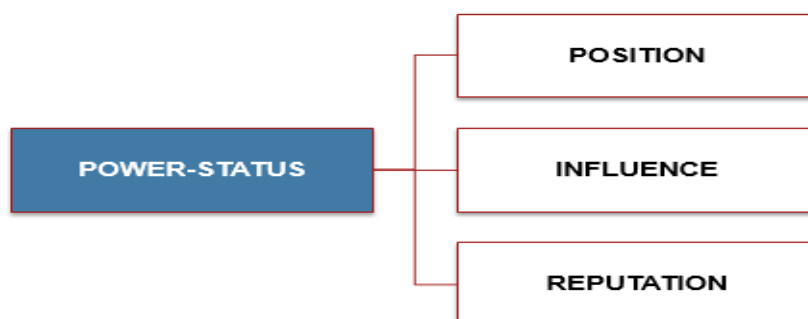


Figure 5.10: Construct Power – status with emerging tenets

The emerging tenets indicated the following:

- Position clustered responses on how position within context had its impact on leadership processes;
- Influence, where nuances were captured on how processes were directed and channelled due to the influential power of actors; and
- Reputation, where insights on longer term or historical context were observed.

5.2.1.7 *Culture of diverse views*

The code, Culture of diverse views, within the theme Context overlaps with the theme Value creation. Here the code was analysed for its contextual influences within the theme Context. The construct, Culture of diverse views, resulted in four (4) tenets emerging (Figure 5.11).

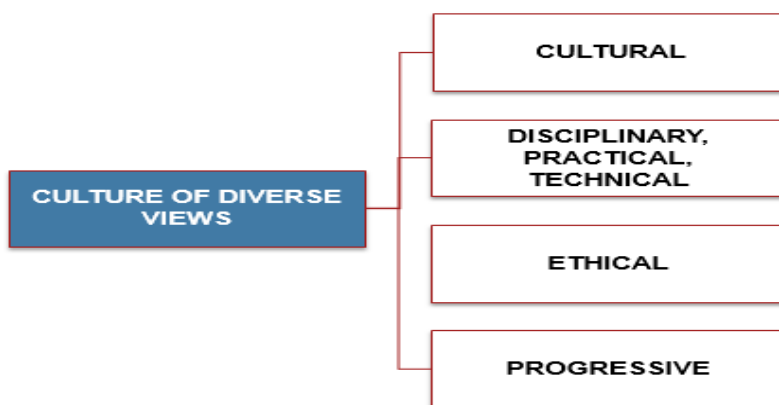


Figure 5.11: Construct Culture of diverse views with emerging tenets

The emerging tenets indicated the following:

- Cultural included specific belief systems and cultural practices
- Disciplinary, practical, technical included nuances on the issues emerging from disciplinary tensions, pragmatic considerations or purely technically based matters;
- Ethical, which captured insights on the moral and values of the various actors in this space; and
- Progressive, where there was a concerted effort and interests in taking diverse views into consideration.

5.2.1.8 Culture – innovation and discovery

The construct, Culture – innovation and discovery, resulted in four (4) tenets emerging (Figure 5.12).

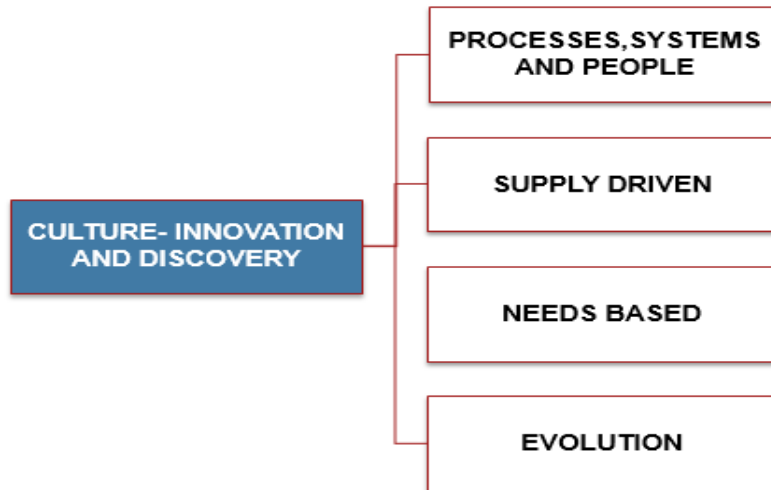


Figure 5.12: Construct Culture – innovation and discovery with emerging tenets

The emerging tenets indicated the following:

- Processes, systems and people captured experiences where the existing processes, systems of operation and the people involved in the processes allowed or hampered innovation and discovery;
- Supply driven, which captured insights on the way innovation was provided to a system;
- Needs based which highlighted whether or not there was a particular requirement for innovation; and
- Evolution, which looked at the process and duration of innovation and discovery.

5.2.2 Theme: Value creation

The theme, Value creation, generated seven (7) codes (Table 5.3).

Table 5.3: Theme: Value creation

Theme	Codes
Value creation	Number: 7
	Character traits and identities
	Culture of diverse views
	Respect
	Intentions and interests - power
	Experience – experts
	Interests and intentions - humanity and morality
	Trust: legitimacy and consensus building

The codes within this theme and for all subsequent themes thereafter are presented in figures based on Microsoft Excel analyses demonstrating their interactions and tensions between codes within themes and across themes, (for example see Figure 5.16). Only the dominant constructs within subsequent themes are presented in a similar manner to the constructs within the theme Context.

“Trust: Legitimacy and consensus building” emerged as the dominant construct within the theme Value creation (Figure 5.13).

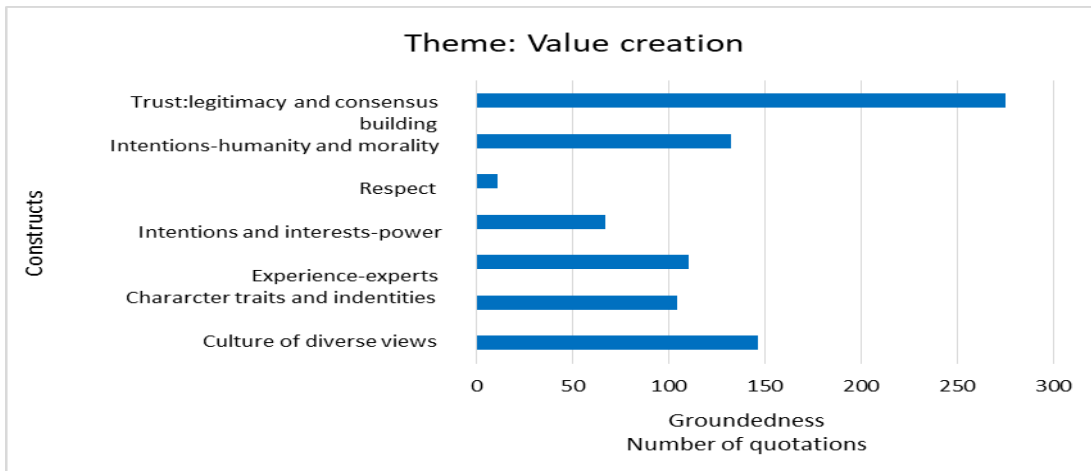


Figure 5.13: Relative strength of constructs within the theme Value creation

5.2.2.1 Trust: Legitimacy and consensus building

The construct, Trust: legitimacy and consensus building, which also overlaps with the theme Emotion, emerged as the dominant construct within the theme. The

results are presented in a figure that reveals the respective tenets and the dominant tenet within. The construct resulted in five (5) emerging tenets (Figure 5.14).

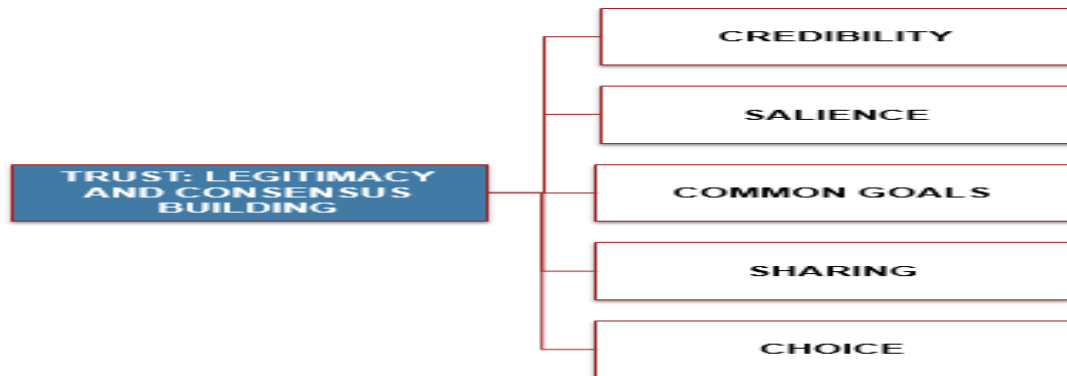


Figure 5.14: Construct Trust: legitimacy and consensus building with emerging tenets

The emerging tenets indicated the following:

- Credibility captured responses where honourable notions, reliability and integrity of actors in the process were observed;
- Salience, which highlighted the relevance or importance of issues to the relevant actors;
- Common goals, which captured the joint aspirations of individuals in the process;
- Sharing, where transparency of process, issues etc. are collectively discussed; and
- Choice, where actors and individuals in the process demonstrated options available and their ability to make choices.

Dominant Tenet: Credibility

The tenet, Credibility, interacting within the dominant construct Trust legitimacy and consensus building, emerged as the strongest amongst the tenets Salience, Common goals, Sharing, and Choice (Figure 5.15).

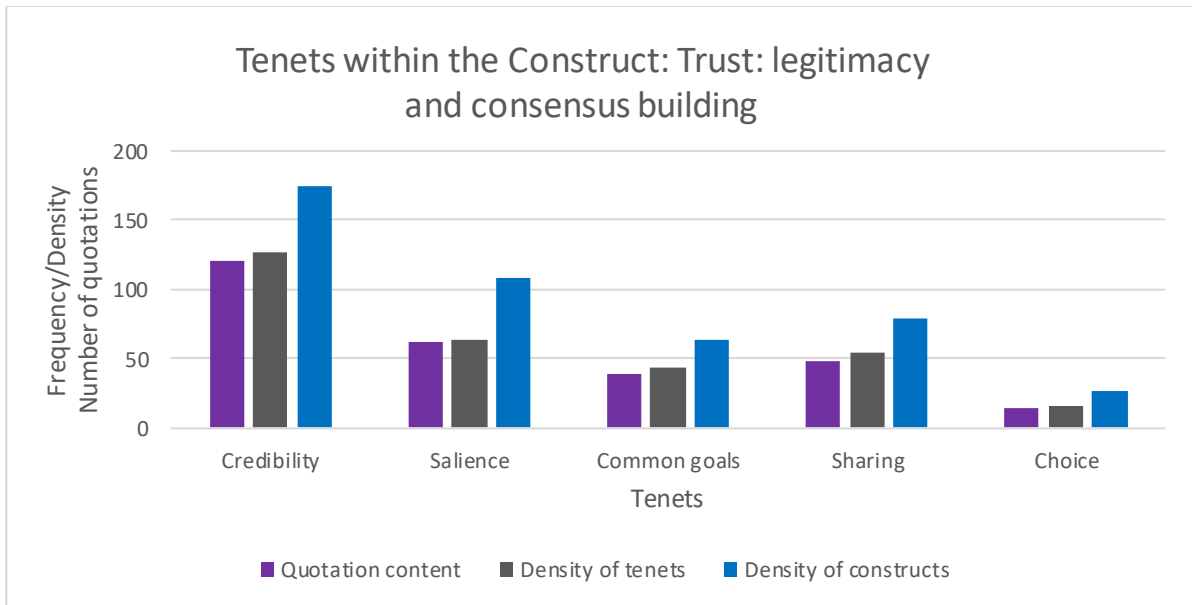


Figure 5.15: Dominant Tenet within the Construct Trust: legitimacy and consensus building

5.2.2.2 Character traits and identities

The construct, “Character traits and identities”, with 104 quotations, interacted within and across themes, tenets and constructs (Figure 5.16).

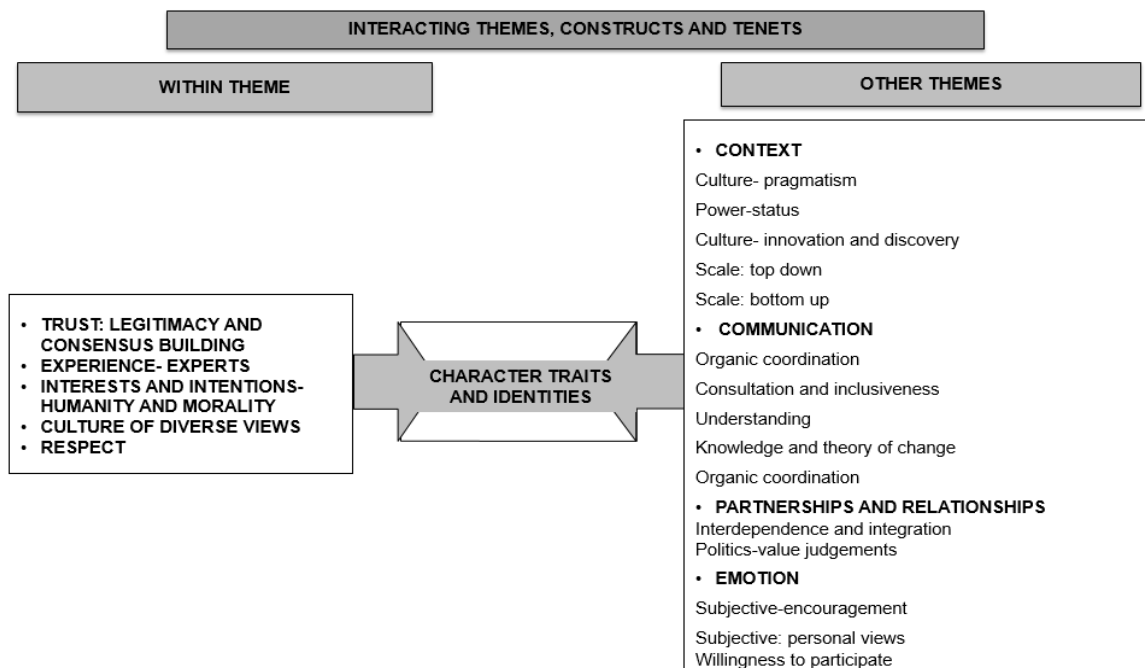


Figure 5.16: Interacting Construct: Character traits and identities

5.2.2.3 Culture of diverse views

The code, Culture of diverse views within the theme Context overlaps with the theme Value creation. The construct, Culture of Diverse Views, resulted in four (4) tenets emerging (Figure 5.11, which presents the construct of Diverse Views with emerging tenets, is referred to for ease of reference to the reader). Here the code was analysed for its tensions and interactions between the emerging tenets Cultural, Disciplinary, Practical, Technical, Ethical, and Progressive.

5.2.2.4 Respect

The construct, Respect, with only 11 quotations, interacted with one (1) construct within the theme and two (2) other constructs outside the theme (Figure 5.17).

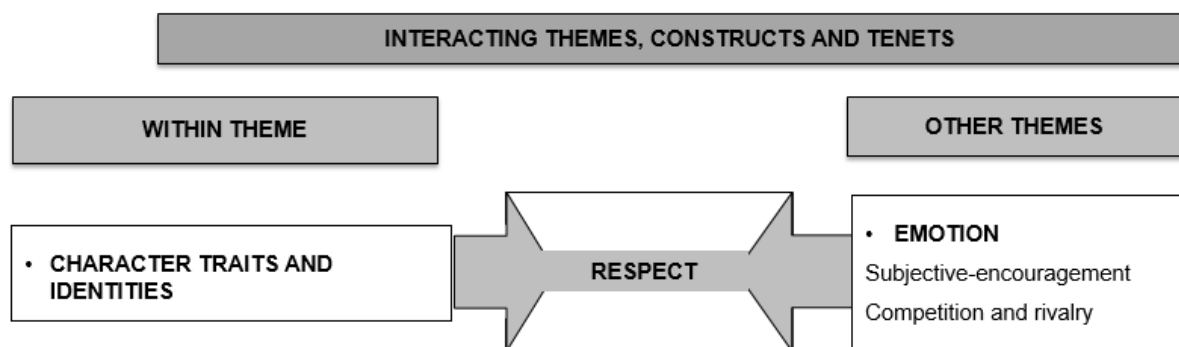


Figure 5.17: Interacting Construct: Respect

5.2.2.5 Intentions and interests - power

The construct, Intentions and interests - power, consisting of 67 quotations, has interacted with two (2) constructs within the theme, including emerging tensions with other themes, constructs and tenets (Figure 5.18)

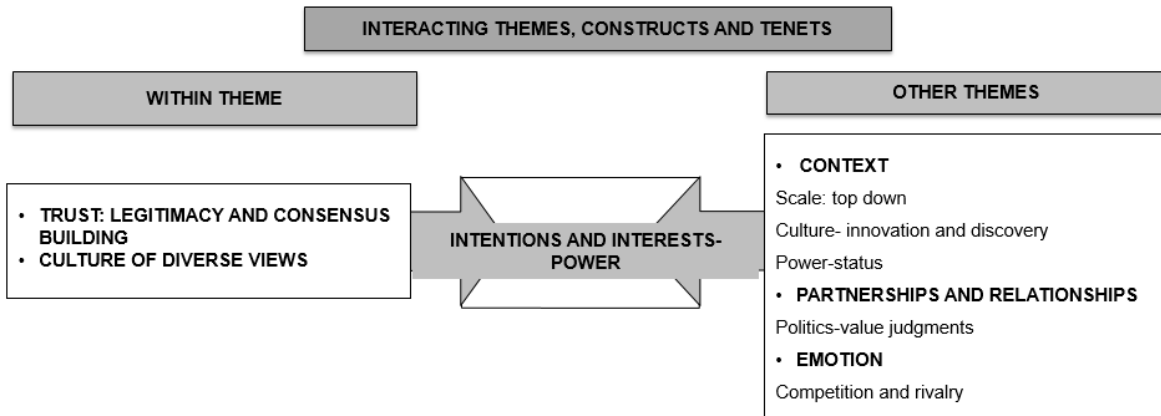


Figure 5.18: Interacting Construct: Intentions and interests – power

5.2.2.6 Experience – experts

The construct, Experience – experts, with 110 quotations, has interacted with all the constructs within the theme, including interactions with a majority of constructs and tenets across the other themes (Figure 5.19).

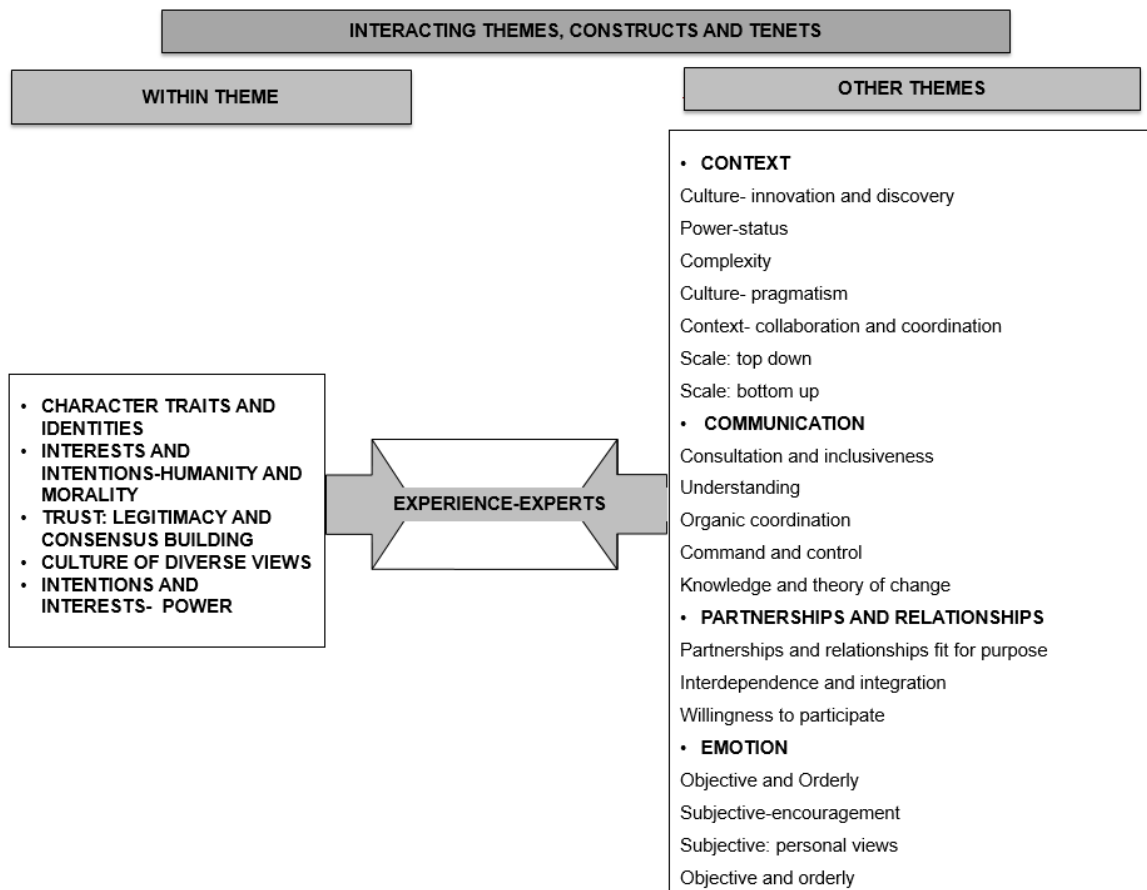


Figure 5.19: Interacting Construct: Experience – Experts

5.2.2.7 *Interests and intentions - humanity and morality*

The construct, Interests and intentions - humanity and morality, with 132 quotations, has interacted within the theme as well as across other themes, constructs and tenets (Figure 5.20).

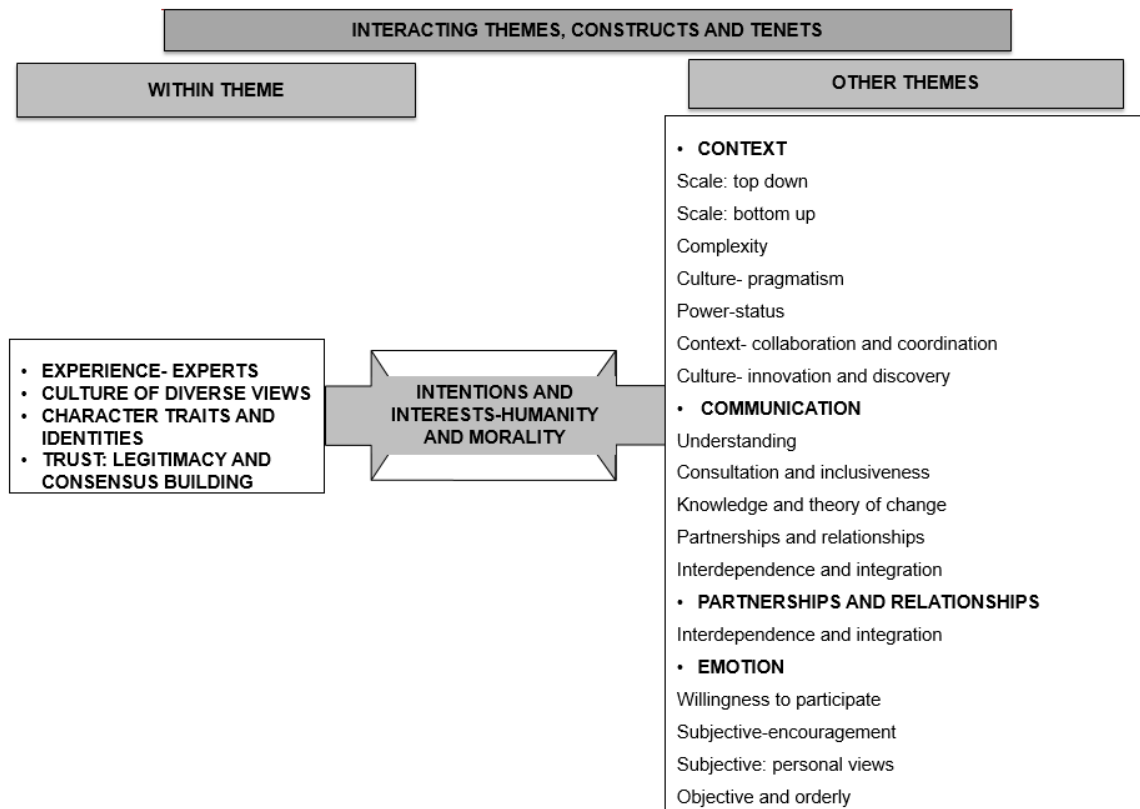


Figure 5.20: Interacting Construct: Interests and intentions – humanity and morality

5.2.3 Theme: Communication

The theme Communication generated six (6) codes (Table 5.4).

Table 5.4: Theme: Communication

Theme	Codes
Communication	Number: 6
	Knowledge and theory of change
	Organic coordination
	Consultation and inclusiveness
	Language
	Command and control
	Understanding

As with the other themes, the interaction and tensions of all codes within this theme are presented in figures demonstrating the interacting themes, constructs and tenets within themes and across themes. The most dominant code based on its frequency/density is analysed further and is presented in bar graphs.

Understanding emerged as the dominant construct within the theme Communication (Figure 5.21).

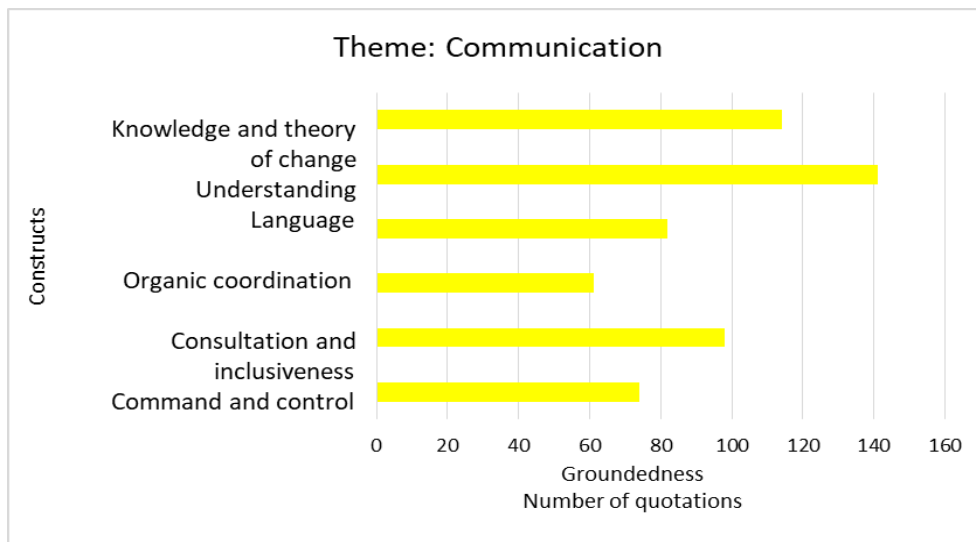


Figure 5.21: Relative strength of constructs within the theme Communication

5.2.3.1 Understanding

The construct, “Understanding”, emerged as the dominant construct within the theme and the results are presented in a figure that reveals the respective tenets and the dominant tenet within. The construct resulted in seven (7) emerging tenets (Figure 5.22).

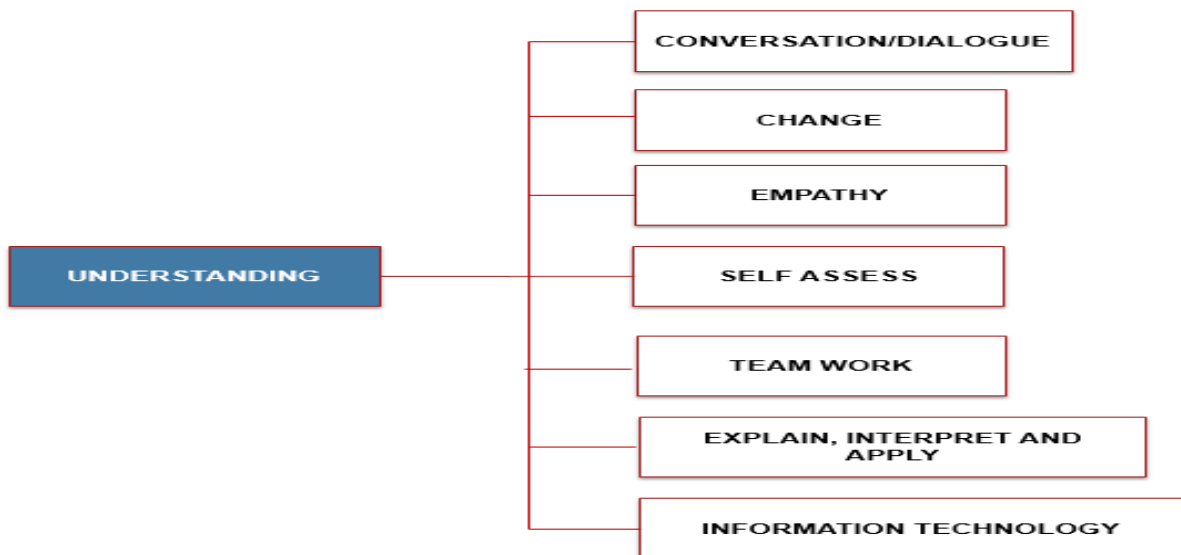


Figure 5.22: Construct: Understanding and emerging tenets

The emerging tenets indicated the following:

- Conversation/Dialogue captured responses, where communication took place through conversation and dialogue;
- Change, which included experiences of how participants handled changing processes and circumstances;
- Empathy, where participants actually demonstrated experiences where there was a genuine interest in listening and taking heed of another interacting actor's needs, views, etc.;
- Self-assess, which reflects on individual actions and processes;
- Team work, which entails the ability to work collaboratively and in a team;
- Explain, interpret and apply, where there is an expanded process of understanding, including efforts to explain, interpret and implement further what has been communicated; and
- Information technology, where participants expressed their experiences through the use of social media, the use of information technology and other electronic means.

Dominant Tenet: Conversation/dialogue

The tenet “Conversation/dialogue”, interacting within the dominant construct, “Understanding”, emerged as the strongest amongst the tenets “Change”,

“Empathy”, “Self-assess”, “Team work”, “Explain, interpret and apply”, and “Information technology” (Figure 5.23).

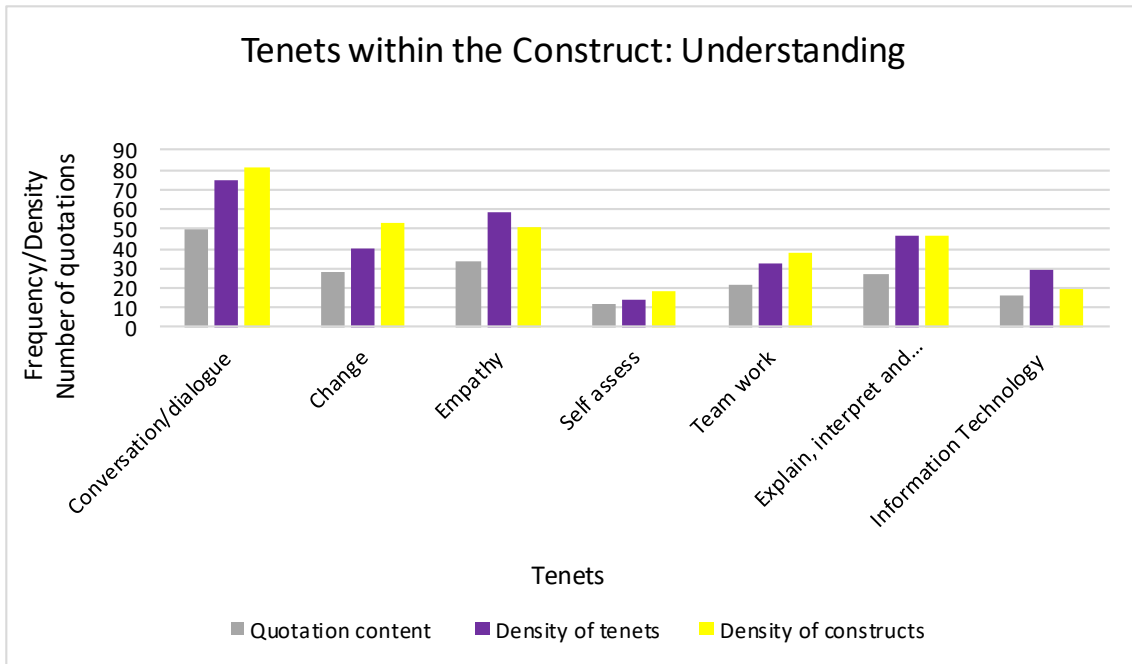


Figure 5.23: Dominant Tenet within the Construct: Understanding

5.2.3.2 Knowledge and theory of change

The construct, Knowledge and theory of change, with 114 quotations, interacted within and across themes, tenets and constructs (Figure 5.24). The construct interacted outside the theme with the overlapping code Trust: legitimacy and consensus building.

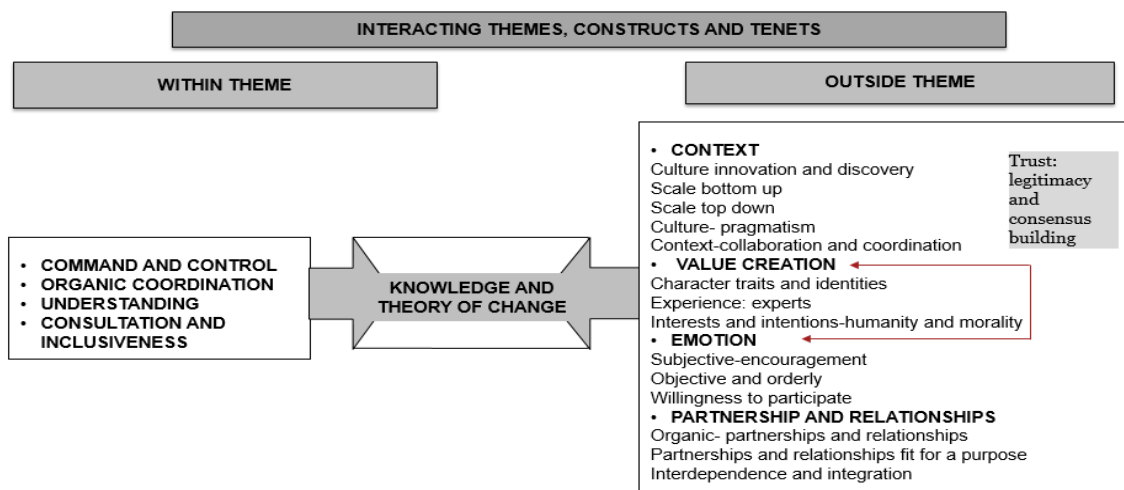


Figure 5.24: Interacting Construct: Knowledge and theory of change

5.2.3.3 Organic coordination

The construct, Organic coordination, with 61 quotations, interacted within and across themes, tenets and constructs (Figure 5.25). The construct interacted outside the theme with the overlapping code Culture of diverse views.

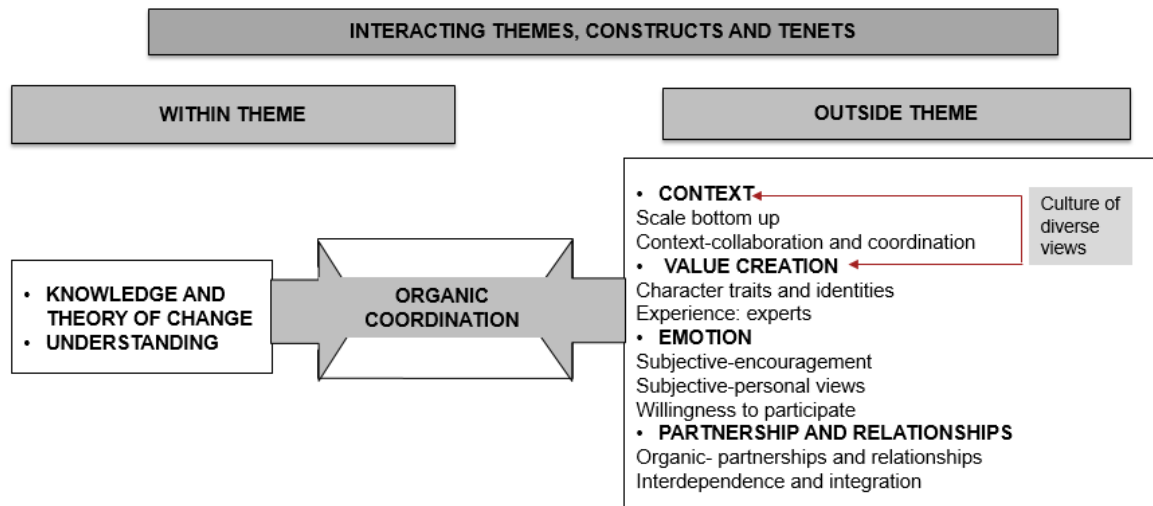


Figure 5.25: Interacting Construct: Organic coordination

5.2.3.4 Consultation and inclusiveness

The construct Consultation and inclusiveness, with 98 quotations, interacted within and across themes, tenets and constructs (Figure 5.26). The construct interacted outside the theme with the two overlapping codes Trust: legitimacy and consensus building and Culture of diverse views.

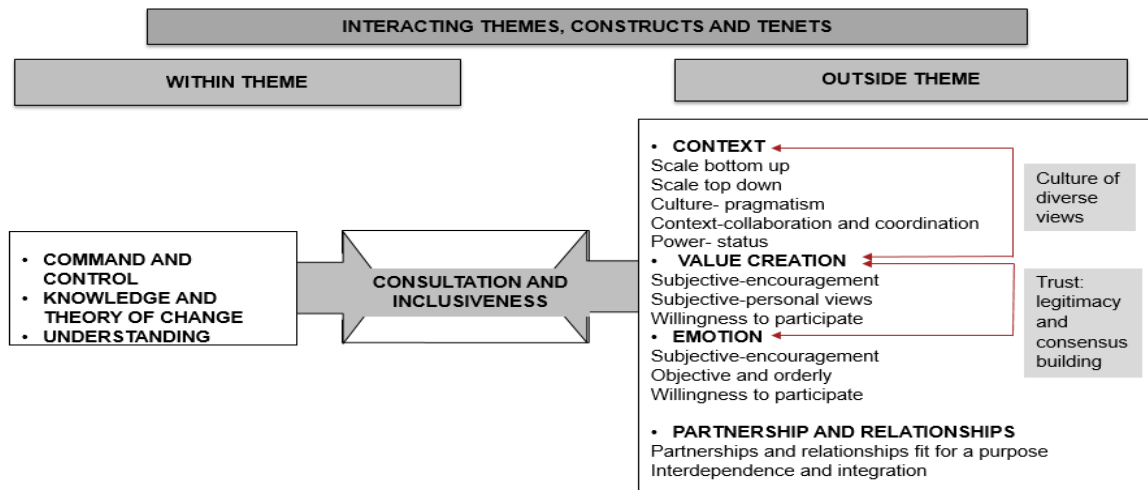


Figure 5.26: Interacting Construct: Consultation and inclusiveness

5.2.3.5 Language

The construct, Language, with 82 quotations, interacted within and across themes, tenets and constructs (Figure 5.27). The construct interacted outside the theme with the two (2) overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

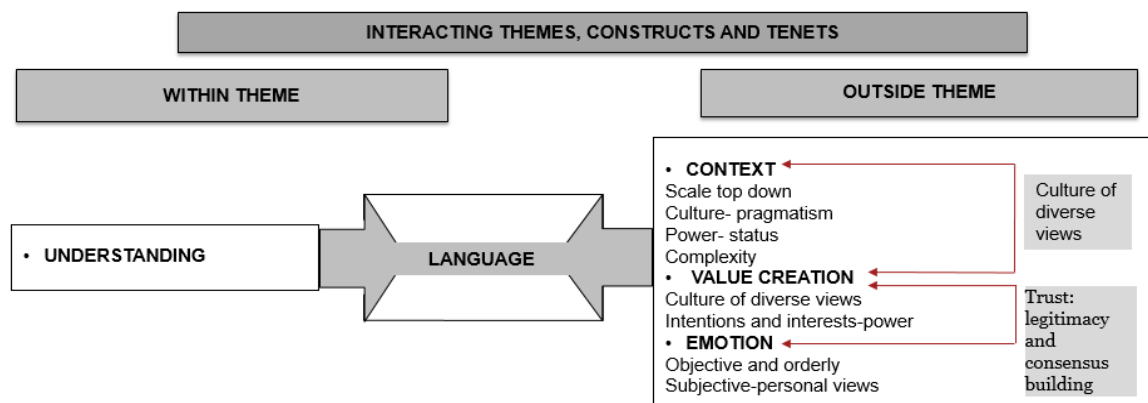


Figure 5.27: Interacting Construct: Language

5.2.3.6 Command and control

The construct, Command and control, with 74 quotations, interacted within and across themes, tenets and constructs (Figure 5.28). The construct interacted outside the theme with the two (2) overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

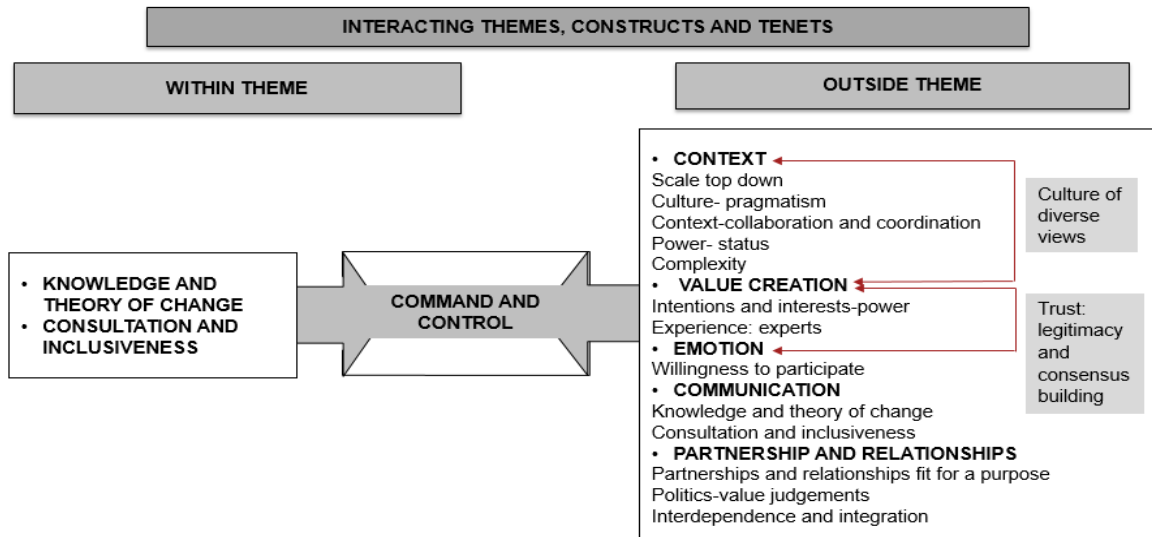


Figure 5.28: Interacting Construct: Command and Control

5.2.4 Theme: Partnerships and relationships

The theme, Partnerships and relationships, generated four (4) codes (Table 5.5).

Table 5.5: Theme: Partnerships and relationships

Theme	Codes
Partnerships and relationships	Number: 4
	Organic partnerships and relationships
	Politics - value judgements
	Partnerships and relationships fit for a purpose
	Interdependence and integration

As with the other themes, the interaction and tensions of all codes within this theme are presented in figures demonstrating the interacting themes, constructs and tenets within themes and across themes. The most dominant code based on its frequency/density is analysed further and is presented in bar graphs.

“Interdependence and integration” emerged as the dominant construct within the theme Partnerships and relationships (Figure 5.29).

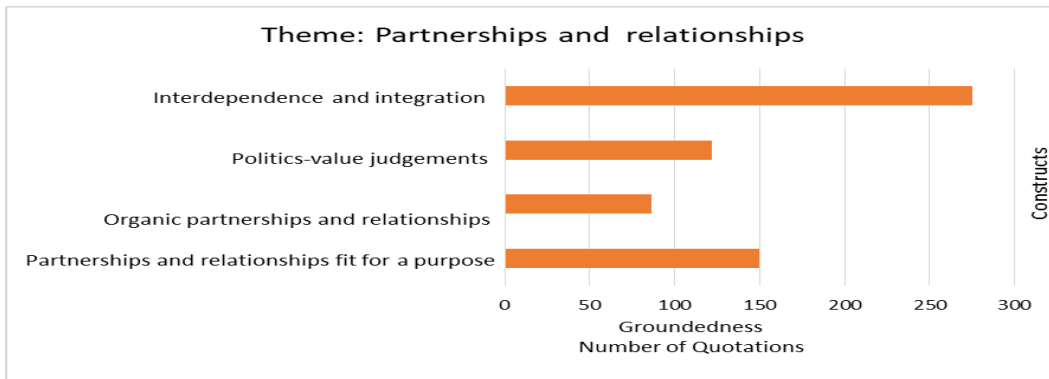


Figure 5.29: Relative strength of constructs within the theme Partnerships and relationships

5.2.4.1 Interdependence and integration

The construct, Interdependence and integration, emerged as the dominant construct within the theme and the results are presented in a figure that reveals the respective tenets and the dominant tenet within. The construct resulted in six (6) emerging tenets (Figure 5.30).

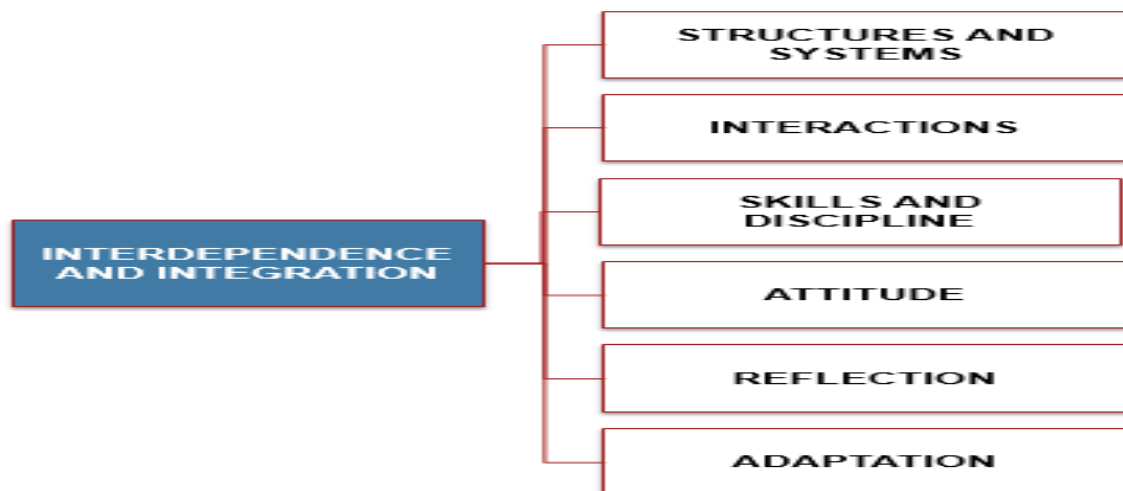


Figure 5.30: Construct: Interdependence and integration and emerging tenets

The emerging tenets indicated the following:

- Structures and systems captured responses which allowed for adaptive leadership;
- Interactions, which captured the social interactions of individuals, their relationships and partnerships;

- Skills and discipline, where functional roles, responsibilities and disciplines interact; and
- Some of the elements of social interaction as identified by the interdependence theory (Van Lange & Balliet, 2015).

Dominant Tenet: Structures and Systems

The tenet “Structures and systems”, interacting within the dominant construct “Interdependence and integration”, emerged the strongest amongst the tenets “Interactions”, “Skills and discipline”, “Attitude”, “Reflection”, and “Adaptation” (Figure 5.31).

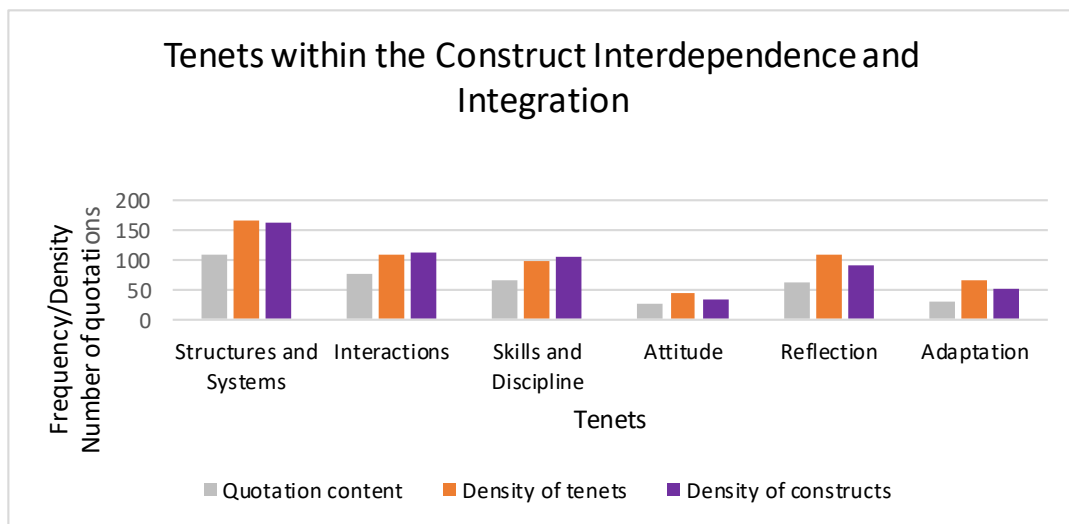


Figure 5.31: Dominant Tenet within the Construct Interdependence and integration

5.2.4.2 Organic partnerships and relationships

The construct, Organic partnerships and relationships, with 86 quotations, interacted within and across themes, tenets and constructs (Figure 5.32).

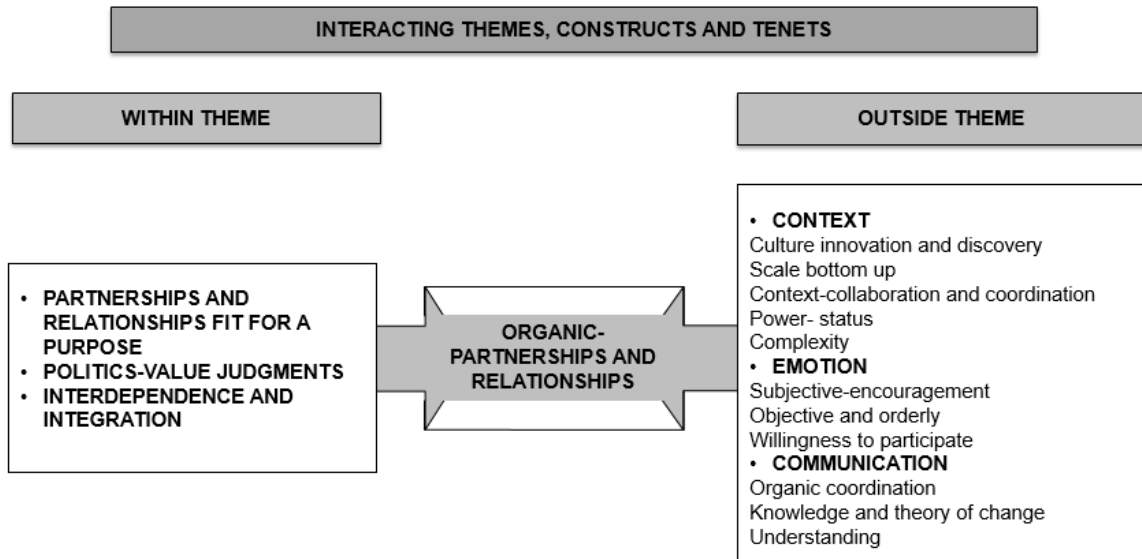


Figure 5.32: Interacting Construct: Organic partnerships and relationships

5.2.4.3 Politics – value judgements

The construct, Politics – value judgements, with 122 quotations, interacted within and across themes, tenets and constructs (Figure 5.33). The construct interacted outside the theme with the two (2) overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

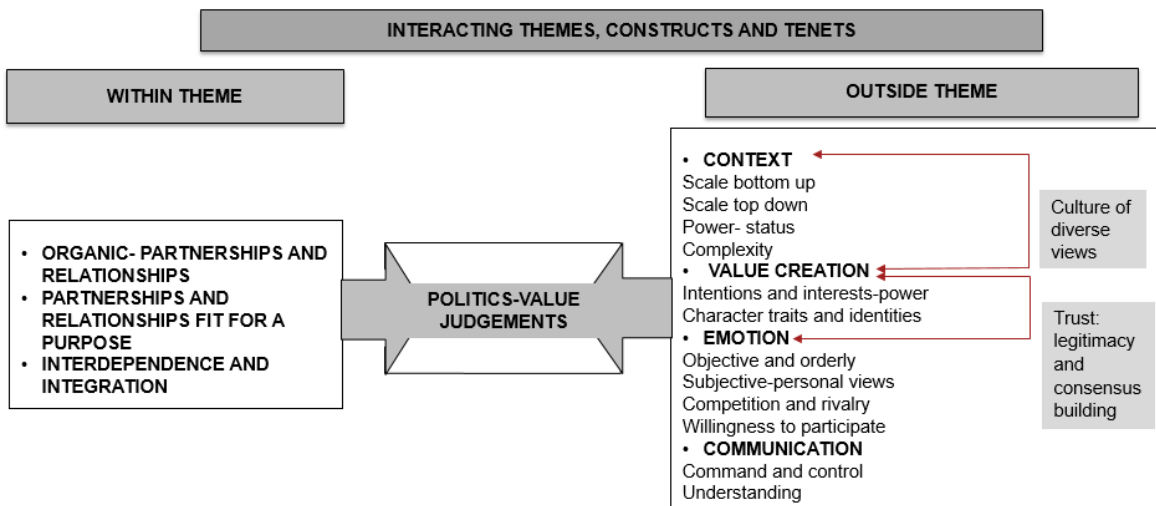


Figure 5.33: Interacting Construct: Politics – value judgements

5.2.4.4 Partnerships and relationships fit for a purpose

The construct, Partnerships and relationships fit for a purpose, with 150 quotations, interacted within and across themes, tenets and constructs (Figure

5.34). The construct interacted outside the theme with the overlapping code Trust: legitimacy and consensus building.

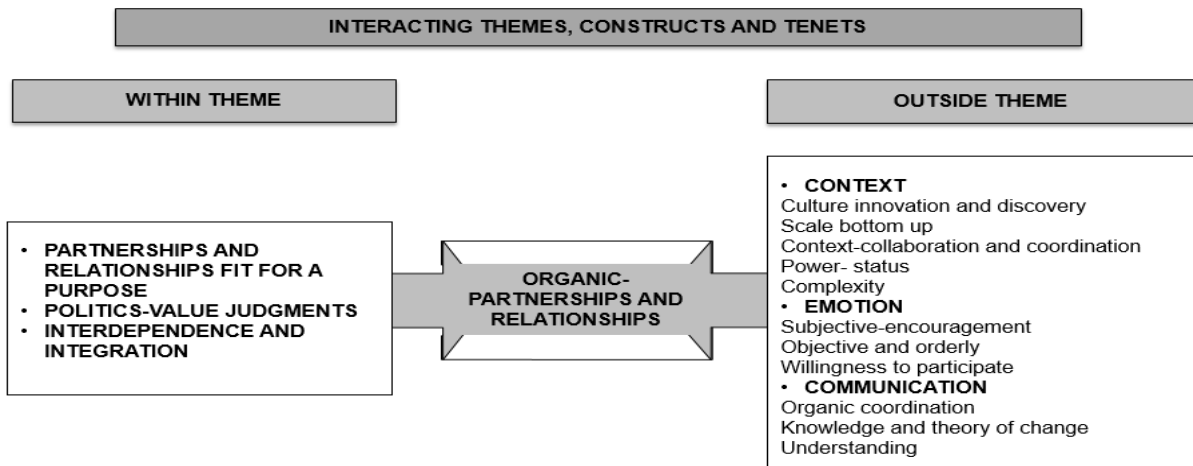


Figure 5.34: Interacting Construct: Partnerships and relationships fit for a purpose

5.2.5 Theme: Emotion ████████

The theme, Emotion, generated six (6) codes (Table 5.6).

Table 5.6: Theme: Emotion

Theme	Codes
Emotion ████████	Number: 6
	Competition and rivalry
	Trust: legitimacy and consensus building
	Subjective: personal views
	objective and orderly
	Subjective-encouragement
	Willingness to participate

In a similar manner, each of the codes within the theme is presented briefly based on its interactions and tensions between codes using the code definitions and quotations. The emergent dominant code based on its frequency/density is analysed further and is presented in bar graphs and figures. The theme, Emotion, also included the code “Trust: legitimacy and consensus building”, which overlapped with the theme: Value creation. This code is described in detail under the theme: Value creation. It is included here for its interaction and tension

between the various codes, which allowed the dominant code within this theme to emerge.

Willingness to participate emerged as the dominant construct within the theme Emotion (Figure 5.35).

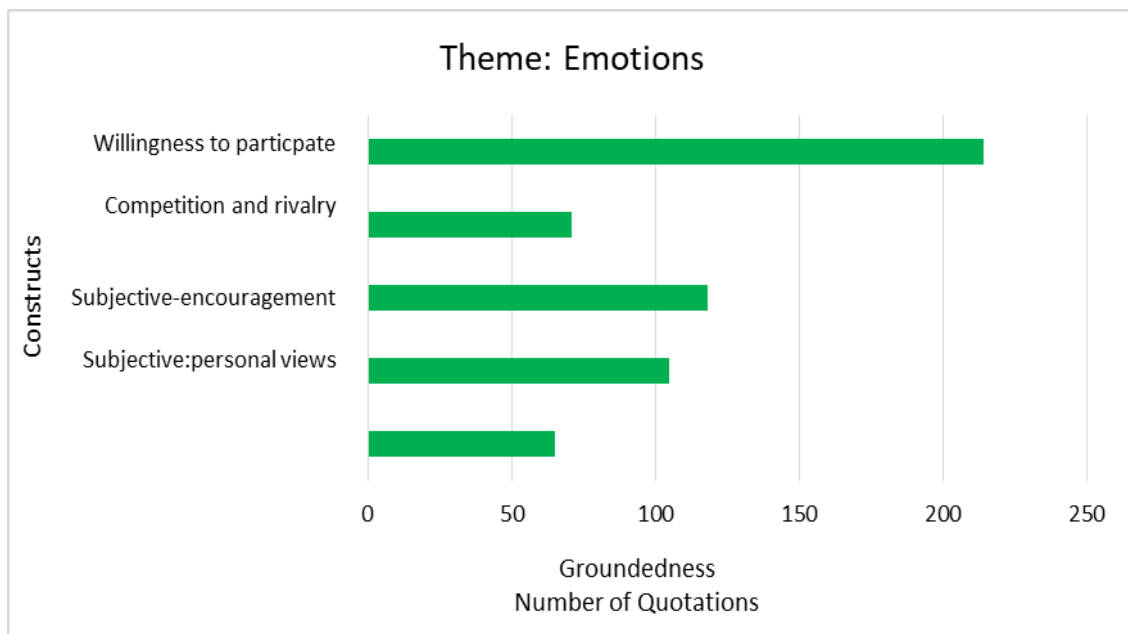


Figure 5.35: Relative strength of constructs within the theme Emotion

5.2.5.1 Willingness to participate

The construct, Willingness to participate, emerged as the dominant construct within the theme and the results are presented in a figure that reveals the respective tenets and the dominant tenet within. The construct resulted in seven (7) emerging tenets (Figure 5.36).

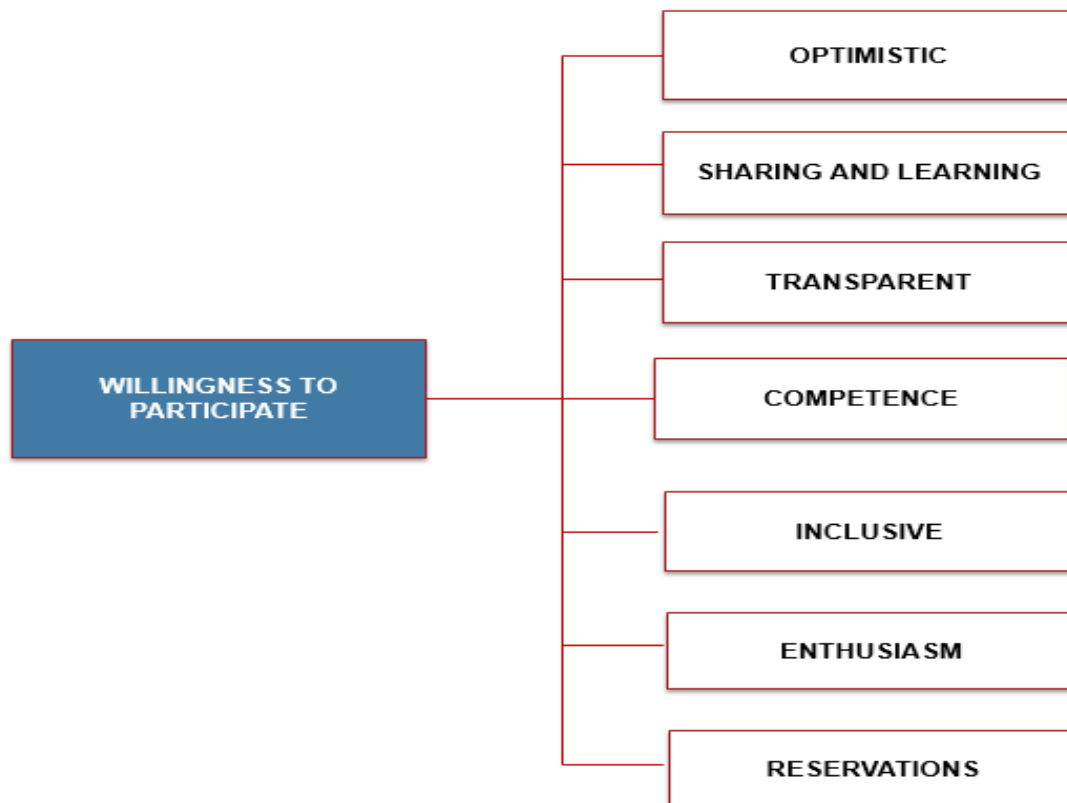


Figure 5.36: Construct: Willingness to participate with emerging tenets

Within the construct Willingness to participate, seven (7) emerging tenets emerged. Subtle differences in the responses from participants in the context of a “willingness to participate” indicated the following:

- Optimistic captured expressions of a positive attitude, confidence, trust and perseverance;
- Sharing and learning provided insights on participants need to share and learn from each other;
- Transparent captured responses that expressed the need for openness, honesty and freeness of the process;
- Competence captured expressions of the participant’s ability to do the work, their necessary skills and their efficiency in carrying out tasks;
- Inclusive, where expressions of the need to collaborate and be part of processes was captured;
- Enthusiasm captured responses that overtly expressed the desire to participate; and

- Reservations captured participants' expressions of reluctance, concern, anxiety and risk.

Dominant Tenet: Optimistic

The tenet, Optimistic interacting, within the dominant construct, “Willingness to participate”, emerged the strongest amongst the tenets “Sharing and learning”, “Transparent”, “Competence”, “Inclusive”, “Enthusiasm”, and “Reservations” (Figure 5.37).

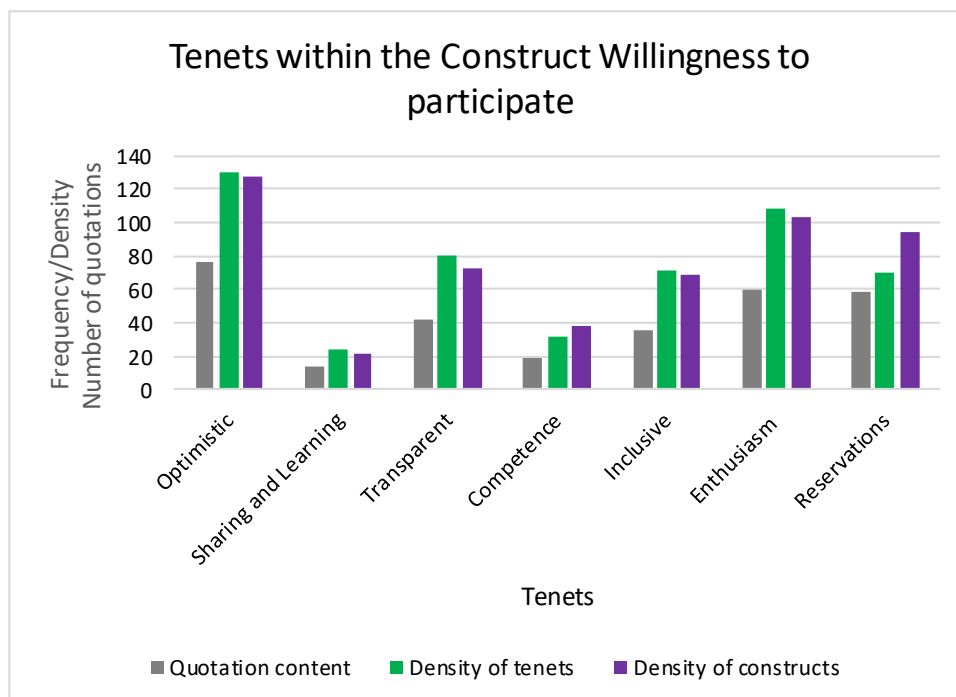


Figure 5.37: Dominant tenet within the Construct: Willingness to participate

5.2.5.2 Competition and rivalry

The construct, Competition and rivalry, with 71 quotations, interacted within the theme and across themes, constructs and tenets (Figure 5.38).

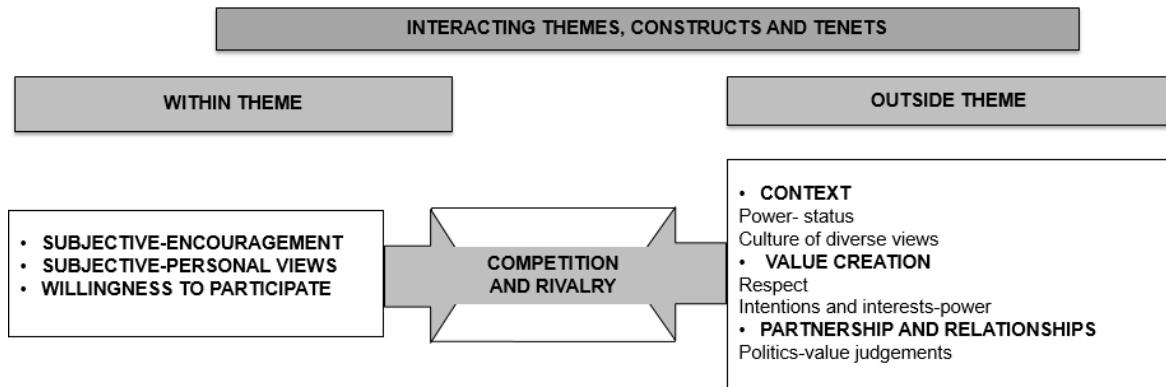


Figure 5.38: Interacting Construct: Competition and Rivalry

5.2.5.3 Trust: Legitimacy and consensus building

The construct, Trust: legitimacy and consensus building, overlaps with the theme Value creation. The emerging tenets of Credibility, Salience, Common goals, Sharing, and Choice interact to reveal the dominant tenets underpinning the role of emotion in the co-creation process of relational leadership. Figure 5.14 is referred to here for ease of reference to the reader.

5.2.5.4 Subjective: Personal Views

The construct, Subjective: personal views, with 105 quotations, interacted within the theme and across themes, constructs and tenets (Figure 5.39). The construct interacted outside the theme with the two overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

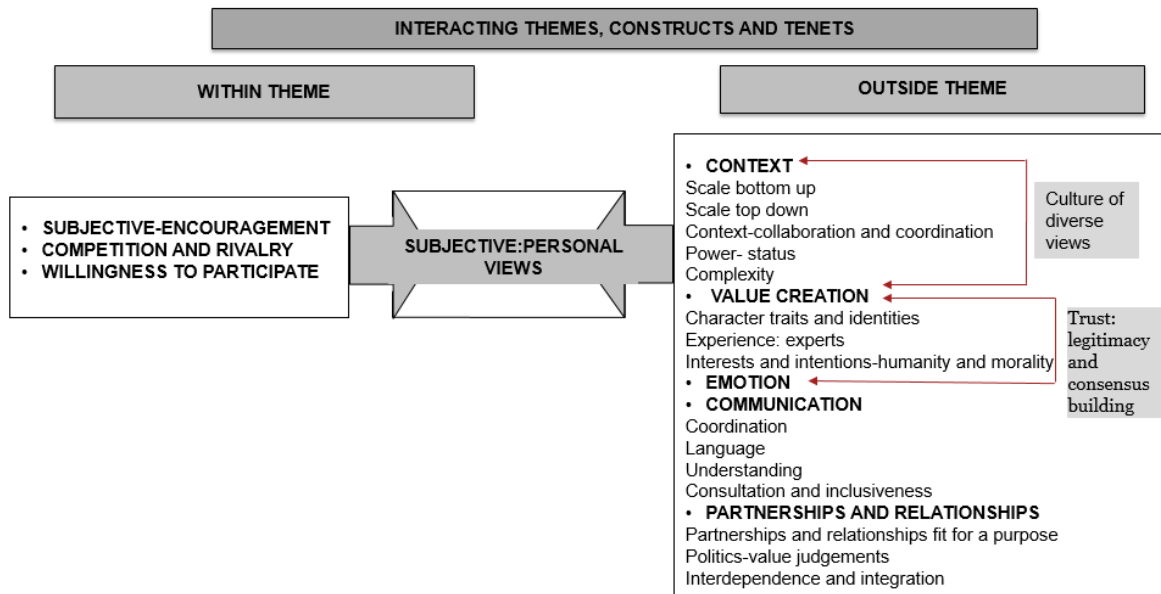


Figure 5.39: Interacting Construct: Subjective: personal views

5.2.5.5 Objective and orderly

The construct, Objective and orderly, with 65 quotations, interacted within the theme and across other themes, constructs and tenets (Figure 5.40). The construct also interacted outside the theme with the two overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

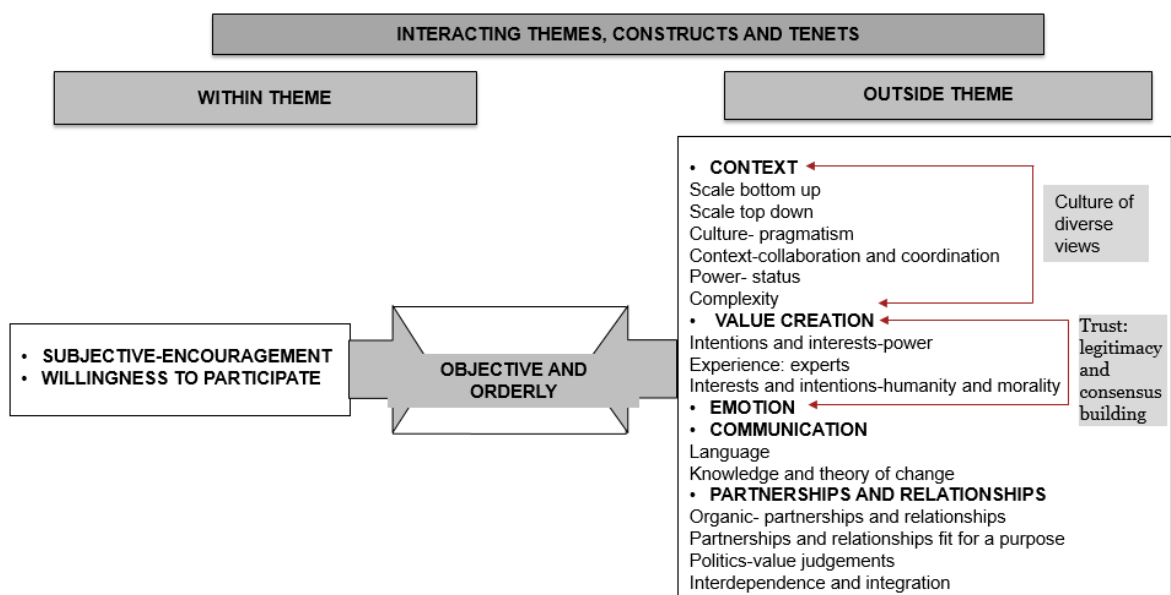


Figure 5.40: Interacting Construct: Objective and orderly

5.2.5.6 Subjective – encouragement

The construct, Subjective – encouragement, yielded 118 quotations, which interacted accordingly within the theme and across other themes, constructs and tenets (Figure 5.41). The construct also interacted outside the theme with the two overlapping codes, Trust: legitimacy and consensus building, and Culture of diverse views.

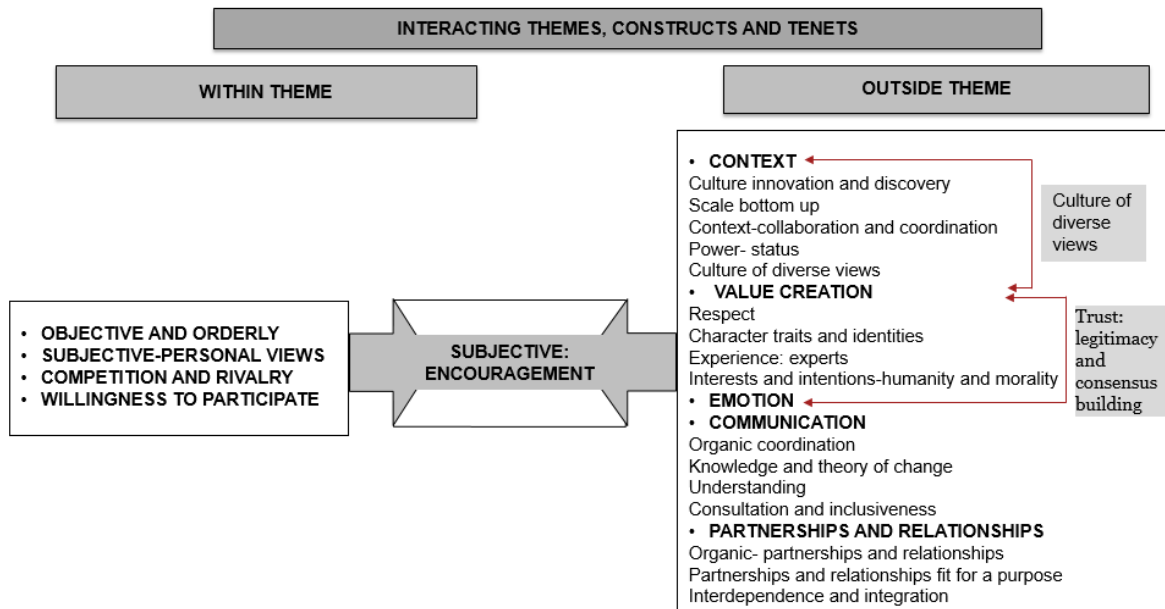


Figure 5.41: Interacting Construct: Subjective – encouragement

5.2.6 Cumulative Results: All Themes

The following section summarises the results within each theme and is presented collectively to highlight the emerging trends. There were some code overlaps between themes and interactions and tensions within codes. Some of these tensions, interactions and/or relationships were deduced during the data analyses process (Section 4.4.4), whilst others emerged due to the present research context. Coding overlap was managed through the use of Atlas.ti software where duplicated codes were either combined with other codes in some instances, deleted where redundant and maintained in other instances within the respective themes due to their strong contextual affiliations.

Consequently, the interactions at three levels, the theme level, the construct level and deepest level being the tenet level, allowed certain themes, constructs and tenets to dominate whilst suppressing others in the process. The results are therefore dominant themes, constructs and tenets.

Between the five (5) themes of Context, Value creation, Communication, Partnerships and relationships, and Emotion, the theme Context emerged as the most dominant theme. Within all themes, dominant constructs have emerged. Within the dominant theme of Context, the construct of Complexity emerged the strongest. Within the theme Value creation, the construct of Trust: legitimacy and consensus building was the most dominant. The construct of Understanding appeared to be the strongest within the theme Communication. The construct of Interdependence and integration emerged the strongest within the theme Partnerships and relationships. Within the theme Emotion, the construct of Willingness to participate was the most dominant (Figure 5.42).

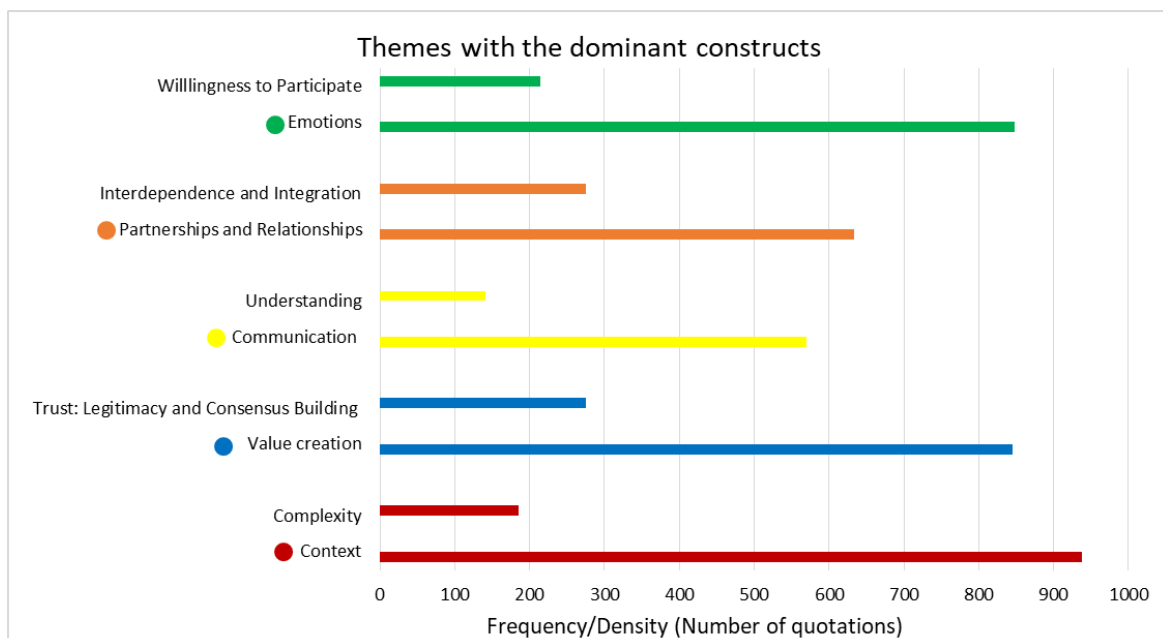


Figure 5.42: Themes and their dominant constructs

The tenets that have emerged from each dominant construct within all themes are presented comparatively (Figure 5.43). These key tenets will be discussed in more detail in the next chapter to answer the overall research question of how leadership was co-created within the emergent case of NCA.

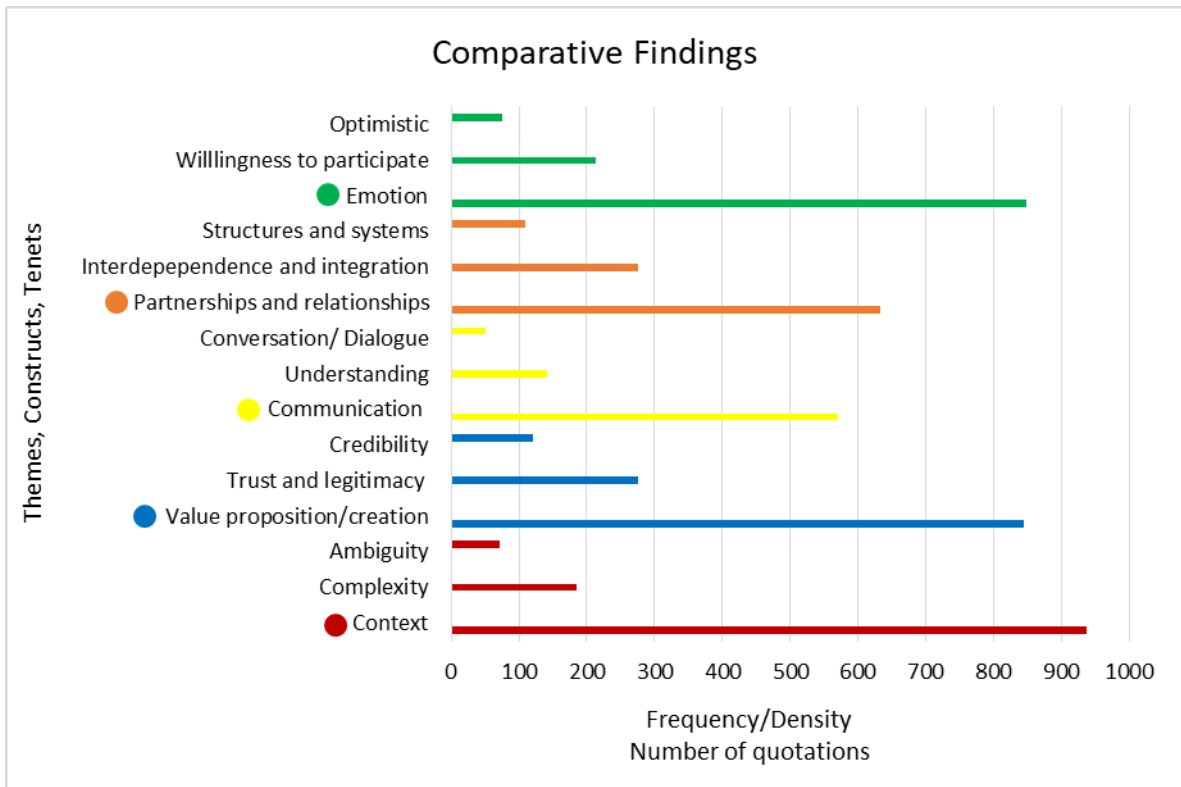


Figure 5.43: Summary outcomes: key tenets

The summary outcomes, comprising the key dominant themes, their respective dominant constructs and the dominant tenets which addressed the three objectives of the study, which emerged as the key tenets of co-creation were developed into a construct of co-creation. Through the use of the case context of the evolution of the concept of NCA, specific practices, capabilities and principles have emerged which underpinned the dominant tenets that have emerged from the study. These tenets have been reconciled into a core list of principles for leadership in NCA that are discussed briefly in Chapter 6 and presented in Chapter 7.

5.3 SUMMARY

The combined data collection methods used in this study yielded a vast volume of information across all the themes identified in the analyses of the data collected. While Chapter 5 contains the results of the data analyses conducted as part of the study, Chapter 6 provided a discussion of the findings and their implications in more detail.

Chapter 6 discussed the results against the direct quotations from the responses of the participants were appropriate. The published literature were available will complement the results. The focus of the discussion will be on the dominant theme, the dominate constructs within each theme and their subsequent dominant tenets within. The discussion will follow the same format as the presentation of the results, that is:

- Dominant Theme;
- Dominant Construct; and
- Dominant tenet.

CHAPTER 6: DISCUSSION

6.1 INTRODUCTION

A comprehensive account of the methodology of how the research was executed was presented in Chapter 4. Chapter 5 presented the key results in each of the pre-defined themes, highlighting the dominant construct within the theme and the emergent dominant tenet within each dominant construct (refer to Table 5.1 in Chapter 5). The chapter concluded with cumulative results of the research, where the dominant tenets from each theme were presented comparatively.

This chapter will discuss the results as presented in Chapter 5, and synthesise and interpret those results against the overall objectives and sub-objectives of the study. The dominant themes, constructs and tenets presented were as a result of the analyses of the interacting themes, constructs and tenets within and across themes. These analyses subsequently revealed some tenets, constructs and themes to dominate, whilst suppressing others in the process. The interpretation of the results was therefore based on these interactions, tensions and complementarities between the themes, constructs and tenets. The Atlas.ti software generated a report which explicitly referenced the interacting quotation where appropriate (see Appendix D: Step 7.2). The results were therefore discussed using the direct quotation that was presented in text boxes using the Atlas.ti referencing (see Section 4.4.4.1) to rationalise and complement the findings, where necessary. The discussions were further related to the published literature, where available. However, where there are gaps in the existing literature, the findings of this research and their interpretation served as contributions to the theory and academic understanding.

The discussion of the results follows the format as set out in Chapter 5, where the dominant tenet within each theme will be discussed against the key elements that were identified from the research and were responsible for its dominance. In this way elements that were identified as key and dominant tenets interacting with those key elements, emerged to reveal the process of how co-creation was taking place, how it affected relational leadership and what the results meant for the co-

creation of leadership within the case of NCA. Specific practices, capabilities and principles of NCA resonate throughout Chapter 6 as a consequence of the research being set within the case context of NCA. A core set of principles for leadership in NCA have emerged from the study to advance the implementation of NCA. These principles derived and underpinned by the dominant themes, constructs and tenets were presented in Chapter 7.

This chapter will conclude with an interpretation of the comparative findings of the research in addressing the overall research question of how leadership was co-created in the emergent case of Natural Capital Accounting.

6.1.1 Reflection on the objectives

The research intended to make sense of the complex socially constructed processes of leadership, thereby developing a deeper understanding of the role of co-creation in relational leadership theory. A reflection of the objectives and the sub-objectives of the research are reiterated here (Table 6.1).

Table 6.1: A summary of the objectives and sub-objectives of the study

Research Question	How leadership is co-created in the emergent case of NCA?	
	OBJECTIVE	OUTCOME
1	Improved understanding of the role of co-creation in relational leadership theory.	The key tenets of co-creation.
2	Added evidence to relational leadership theory as the lens for investigating co-creation.	A construct of co-creation for relational leadership.
3	Identified principles under which NCA emerged as a concept.	A list of core principles for leadership in NCA.
THEMES	SUB-OBJECTIVE (Section 2.4.1)	PRIMARY DATA SOURCE: SEMI-STRUCTURED INTERVIEW QUESTIONS RELATED TO SUB-OBJECTIVES
CONTEXT	How leadership functioned in the context of NCA.	1. Explain your understanding of the NCA process focusing on the key highlights over the past 8 years.

		2. Explain your role in the NCA process to date taking into consideration your personal expertise.
		3. Clarify whether you see NCA as an evolution.
VALUE CREATION	How value was co-created within and between relationships.	4. What are your views on NCA related to its intended purpose?
		5. Explain what (if any) are the priorities, targets and KPIs for the NCA process.
		6. Can you explain how these targets are met?
COMMUNICATION	How communication between the various emerging relationships promoted or impeded the co-creation process.	7. How were roles and responsibilities allocated during the evolution of NCA and its process?
		8. Describe the structures/networks involved (stakeholders) in the NCA evolution.
		9. What are the barriers to effective communication on NCA and its process?
		10. What are the opportunities to effective communication on NCA and its process?
PARNERSHIPS AND RELATIONSHIPS	What was the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA?	11. List all partners in NCA including their specific role(s) in the NCA process.
		12. How long do these partnership and/or relationships last?
		13. Describe the partnership challenges on NCA evolution.
EMOTION	What was the role of emotion in the co-creation process of leadership?	14. Explain the main drivers during the evolution of NCA and its process going forward relating to the behaviour of people and differing personalities.
		15. Can you explain if the NCA process gives you a sense of encouragement?
		16. What do you think is required to ensure fair and equitable benefit sharing from NCA processes?

Table 6.1 demonstrates the linkages with the questions from the semi-structured interviews (primary source of data) and the sub-objectives within each theme. It must be noted that the method of triangulation of data collection complemented the main source of data collection which were the semi-structured interviews. It is further acknowledged that as a result of the systematic design of the three data collection instruments, the use of Atlas.ti software which promoted the use of one data bundle for the analysis and the circumstances that emerged when the focus group was convened and when the anonymous survey was administered, the added value of data collection triangulation where the focus group served the purpose of observing group dynamics and the anonymous survey which served the purpose of obtaining a broader stakeholder perspective were not realised. Responses to the questions within the themes were also found to be applicable to questions in other themes.

6.1.2 Reflection on the results of the analyses of the data collection

The data analyses described in Chapter 5 revealed that within each of the identified themes, some constructs emerged as being dominant over the other constructs identified. In turn, within each of the constructs, there were tenets that emerged during the data analysis process as carrying more weight than others in the same construct, and were therefore regarded as dominant tenets within the specific constructs.

Table 6.2 summarises the various themes, their dominant constructs and dominant tenets.

Table 6.2: Themes, dominant constructs and dominant tenets

Theme	Dominant Codes→Constructs	Dominant Emerging Tenets
Context	Complexity	Ambiguity
Value creation	Trust: legitimacy and consensus building	Credibility
Communication	Understanding	Conversation/Dialogue
Partnerships and relationships	Interdependence and integration	Structures and systems

Emotion █	Willingness to participate	Optimistic
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Table 6.2 provides a brief synopsis of the results obtained within the pre-defined themes and their respective dominant codes, constructs and the respective emergent dominant tenets. The following sections of this chapter discussed and interpreted the results within the themes following the sequence presented in Table 6.2.

6.2 DISCUSSION OF RESULTS WITHIN THEMES

The results have revealed the key tenets within each theme. The discussion therefore focused on how these tenets emerged within the different themes. The tenets are explained, described and referenced to the published literature, where available, and they are also complemented and supported by the relevant direct quotations from participant responses which have been selected based on their nexus interactions between and across themes, constructs and tenets. Five (5) themes emerged from the analyses, namely Context, Value creation, Communication, Partnerships and relationships, and Emotion.

6.2.1 Theme: Context

The theme, Context, emerged as the dominant theme amongst the other themes. Within this theme, Complexity emerged as the dominant construct amongst the other emerging constructs. The dominant and key tenet within the theme Context was the tenet Ambiguity (Table: 6.3).

Table 6.3: Theme: Context: constructs and tenets

Theme	Codes→Constructs	Emerging Tenets
Context (dominant) █	Number: 8	Number for dominant tenet: 6
	Complexity (<i>dominant</i>)	Ambiguity (<i>dominant</i>) Space and system New Time Scale Multidimensional
	Culture – pragmatism	Ideological Feasibility Certainty

	Context – collaboration and coordination	Teamwork Interpersonal Cognitive
	Scale: top down	Powerful organisations Technical expertise Systems and tools Hierarchical structures Money Influential people
	Scale: bottom up	Systems, structures and tools Interdependency Creativity Volition
	Power – status	Position Influence Reputation
	Culture of diverse views	Cultural Disciplinary, practical, technical Ethical Progressive
	Culture – innovation and discovery	Processes, systems and people Supply driven Needs based Evolution

Key highlights of the theme:

- Context emerged as the dominant theme amongst the other themes and was found to be a pre-requisite for how co-creation takes place.
- Context exerts its influence at multiple levels: global, local and personal.
- Context is shaped at a broader level by global factors but at a local level it is shaped and defined by local social factors.
- Historical context was found to be important for encouraging innovation and establishing credibility.
- Context did not function independently; it interacted with other themes, constructs and tenets, allowing the Construct Complexity to emerge as the most dominant, with Ambiguity as the key underpinning tenet.

6.2.1.1 Theme Interpretation

It was found that the multidisciplinary processes of NCA, as an exemplary case context, provided the multiple realities needed to explore the impact of context on how leadership was co-created within these multiple social processes. Osborn *et*

al. (2014) argue that context is an intrinsic part of the leadership co-creation process, where leadership is seen as a socially co-constructed process. Kempster and Parry (2011) emphasise the need to integrate context and process when researching leadership. This further validated the object of enquiry of this research. Results have shown that context can therefore have an influence at multiple levels in catalysing social and local processes. It was evident that clarifying and scoping the local context was relevant for any project or endeavour to succeed and progress (see D40:1...P16).

D40:1 “*Natural capital accounting is something we decided to engage in about 2012. It was a topic that we wanted to bring to life in a Scottish context initially*” - D40: Participant 16

Results have indicated that the local context was seen as a pilot or a testing ground that needed to be adequately monitored and evaluated before it was expanded broadly to other levels. In this way context was found to set a precedent that stimulated innovation through local uptake and this enhanced credibility, which was important as it contributed to historical context. Dougherty and Hardy (in Uhl-Bien *et al.*, 2007) confirm that innovation⁸ takes place within a context where diverse ideas required supervision and control in order for innovation and discovery to emerge.

Findings have suggested that historical context was also a significant factor and may have played an important role for informing future actions. This usually sets a standard for the shaping of future context which can have a varied impact on the existing context. Indeed, the case has demonstrated that once a context was established and defined it became easier to envision the future direction and potential of the context (See D51:7...P27).

D51:7 “*Natural accounting capital accounting is based on a framework which has already got precedent in the financial sector, it has got the GDP, it is a well-established framework, it is a well-established indicator and it is now accepted and people understand it all; there is a context to it, it actually goes across sectors*” - D51: Participant 27

⁸ Despa (2014) argues that innovation which is locally relevant and applied by actors must be separated from invention and discovery that are globally significant.

Therefore, assessing the context, piloting and subsequently gaining experience and establishing a reputation, can have a positive impact on getting the necessary buy-in, improving understanding, mainstreaming and influencing other contexts.

Findings have demonstrated further that the local context appeared to be important for advancing any movement or concept which was narrowed down to the personal and technical level. For example, the personal capacities, technical expertise and even consideration of personal values contributed to scoping and defining the local context in which various social processes unfolded. Personalising context has also occurred to some extent. Results have shown that taking note of one's own context, addressing the challenges and level of understanding, and also evaluating the consequences of not taking certain actions, were important.

The case context has indicated that there appeared to be a need to review one's own context at different levels before considering any new movements, concepts or endeavours. A nested level of context also existed where the local or personal context was influenced by the broader context at the global level. Multiple levels of context were found to be relevant, resonating outwards towards the macro level and inwards towards the micro level. At different levels, context was found to be shaped and defined through different mechanisms. This also highlighted the need and benefit of a purpose-driven approach within context. Results have shown that national and global frameworks, visions and goals informed and defined context, whilst at a finer scale, such as at the organisational level, including the individual or personal level, other social dynamics applied. These social dynamics include relationships, and other social processes which can have a varied impact on the context within which they operate. Uhl-Bien (2006) argues that since leadership is viewed as a relational phenomenon, context indeed played a significant role for interpersonal relational dynamics and other social processes.

However, other social processes, such as behaviour, personal values and background, amongst others, were found to demonstrate the effects of context on leadership. It was found that when new thinking was introduced based on

innovations and developments in a broader context, many other social processes offered resistance to the change in thinking as a result of the evolving and learning context that emerged. Results have indicated that progressive and new thinking was also misconstrued or there could possibly have not been enough understanding or insufficient buy-in for a different approach, which had implications or an impact on the existing context. Therefore, if context is misinterpreted or personalised to such an extent that it affects judgement, it can have an adverse effect on leadership, future actions and future context (See D43:30...P19).

D43:30 *"This is about monetisation of nature, a great number of some trillion dollars' value world, so what you do with the numbers so large? Okay great. So the large number is an issue or numbers without context and privatisation are an issue because ultimately we are talking about public goods. So it's hard to put it in the capital language"* - D43: Participant 19.

Hutter *et al.* (2011) argue that the way innovation and thinking have changed in the present day of globalisation, has resulted in a systemic change in the innovation process.

Subsequently, historical context was found to hamper progress because such actions or experience contributed to historical context, setting a precedent for the existing context. It was found that this adverse effect suppressed or limited the evolution of context. Context can therefore be described as being dynamic and subject to rapid and frequent change due to external and internal forces at different levels. The multiple contexts and other socially constructed processes have been found to have a significant impact on relational leadership. Subsequently, NCA provided the context to observe the interaction between the tenets of co-creation and other emerging social processes.

The theme, Context, emerged as the dominant theme of the five (5) themes emerging from the analyses. There were specific interactions and tensions between the constructs Collaboration and coordination, Culture: pragmatism, and Culture of diverse views, within the theme Context, which have allowed the construct complexity to emerge as the most dominant.

6.2.1.2 Dominant Construct: Complexity

Complexity, within the theme Context, emerged as the dominant construct, after its interaction and tension amongst the constructs “Culture – pragmatism”, “Context – collaboration and coordination”, “Scale: bottom up”, “Scale: top down”, “Power – status”, “Culture of diverse views, and “Culture – innovation and discovery”.

Key highlights of the construct:

- Complexity emerged as a dominant factor amongst other factors that influence how co-creation takes place.
- Complexity is a significant contextual factor that allows leadership to emerge.
- Complexity does not function independently: key interacting variables comprising “Space and System”; “New”; “Time”; “Scale” and “Multidimensional”; have allowed the tenet “Ambiguity”, to emerge as the most dominant.
- Project-led approaches that were time-bound limited innovation and the achievement of broader visions and goals.
- Expectations are high in a complex context, and managing these expectations are time and resource intensive.
- In a dynamic context, poor understanding, ignorance, misunderstanding and the emotions of fear were common with new and emerging concepts that can have both positive and negative effects.
- Multidimensional and multi-level conditions can have both positive and negative effects on the socially constructed processes and relational dynamics of leadership.

Interpretation

It can be argued that NCA served as the context where space, system and process emerged as complex and ambiguous. Lichtenstein, Uhl-Bien, Marion, seers, Orton and Schreiber (2006) argue that complexity is a significant factor amongst the various contextual processes and contextual interactions which allow leadership to surface. Numerous participants have echoed the complexity of the

case context, reiterating the importance and challenges of process (See D60:7...Sr8).

D60:7 *"The realities of implementation and systematic use in management and policy are much more challenging and complex. There has been some progress in biodiversity accounting, but much work is still required"* - D60: Survey respondent 8.

Complexity, comprising the following variables or tenets, Space and System, New, Time, Scale, Multidimensional, and Ambiguity, was constructed in the process. Uhl-Bien *et al.* (2007) assert that complexity subtleties should consider the dynamic and interactive nature of internal mechanisms in time, space and even scale. Time, space and scale emerged as variables that were potentially significant in complexity within the theme Context. Within the case context, many of the participants have mentioned time, time frames and historical events and experiences in many of their responses. Conger (1998) argues that researching leadership in static moments of time is insufficient to gain the in-depth understanding needed for leadership studies. Many authors have argued that leadership can be sufficiently researched when viewed as a process, where trends over time within context should also be considered and where history is another consideration (Conger, 1998; Uhl-Bien *et al.*, 2007). Time was found to have encouraged project-led thinking where chasing deadlines and meeting targets could have limited creativity and innovation.

The case context of NCA provided the space for the observation of the relational dynamics of leadership. Uhl-Bien (2006) speaks of the temporal space where relational processes are constructed through human interaction and meaning making, taking place through time and space within a system. NCA has shown that expectations were high and managing those expectations within this space was challenging (See D1:70...P1).

D1:70 *"I don't think we are in a bad place for that but everybody realises we are like an industry in a developing country it is not established, it needs some protection and some leeway"* - D1: Participant 1.

The level of understanding within systems was also varied, which resulted in more challenges to the system, such as explaining mistakes and delays, a lack of interest, money and changing priorities. These dynamics also took longer than expected to resolve.

The case has shown the dynamic nature of context, where the context was changing and evolutionary in nature (See D4:54...P4).

D4:54 *"I've heard some people say this is like a house that doesn't have life in it yet we don't know how to use it"* - D4: Participant 4.

Context can also be new, where very little is known about such contexts, contributing to uncertainty within context (Sakao, Panshef & Dörsam, 2009). Findings suggested that the dynamic nature of NCA can result in drifting off in different directions, which can be expected because of the novelty of the concept. Results have shown that the emotion fear was expressed amongst stakeholders because of the various unknown aspects of the concept. This newness or novelty of context can also result in many scenarios where misunderstanding and confusion prevail. Bordt (2017) argues that having a narrow perspective on localised issues can exacerbate semantic confusion and risk technical standardization. NCA has revealed the misunderstandings of the concept where people have been ignorant, unaware of the concept and were unable to make the linkages with their current work.

Confusion and misunderstanding can have both positive and negative effects within the theme Context, allowing for ongoing interaction and engagement. The case context has shown that because NCA was a new way of doing accounting without any prescribed methodology or standard, the area of work needed new relationships and partnerships (See D31:1...P8).

D31:1 *"This whole notion of natural capital accounting is a bit of a, I think, a fuzzy notion, which also explains some of its success because many people have a slightly different understanding of what it means but that is also very beneficial for having bigger endorsement and more enthusiasm about it"* - D31: Participant 8.

Dynamic contexts may therefore allow for further social construction and relationship building. Lichtenstein *et al.* (2006) argue that a new idea or project can increase the prospects for creativity where innovation and adaptability can occur. NCA provided the opportunity to innovate and create from the very beginning without any tangible baseline or track record of success.

Yammarino and Dansereau (2008) argue that leadership is intrinsically multi-level. Scale may be similar to space as one of the emerging tenets of complexity, which includes the multidimensional nature of leadership. However, it is differentiated from these tenets, since leadership which is recognised as a global phenomenon (Parry *et al.*, 2014), has been known to manifest itself locally where the causal agents are either individuals, structures and/or relational processes. Many participants responded to questions by mentioning the relevance of scale in their responses. Because the case context deals with natural capital assets, data and information on changes in the environment at various scales were found to be necessary. Given that NCA is operative at the national level and having been conceptualised to inform the system of national accounts, amongst others, the case context has shown that it can be functional at a local level. NCA further demonstrated that even though large scale support was needed for NCA to move forward, strong advocates and champions for NCA on a smaller scale were more effective (See D1:86...D1).

D1:86 "... want a broad base support that you also don't want 40 people at the table when you building in the design of what you want to do as the next step in this process, you want fewer than 20 people at the table and you don't want more than three or four people that are going to be talking a lot in any one part of the session" - D1: Participant 1.

It can therefore be argued that large-scale interactions and discussions can actually hamper the resolution of any technical challenges that may arise during the process of NCA.

Parry *et al.* (2014) re-emphasise the multidimensional, multi-level nature of leadership as a socially constructed phenomenon with ongoing complexity and dynamism. Many participants have confirmed the multidisciplinary, multi-level

nature of the case context of NCA which has provided a dynamic context to research the relational dynamics of leadership. The case context confirmed the multitude of disciplines and agencies involved in the process and the inter-institutional and across-disciplines approach taken for NCA. It was clearly a concept that has come about as a result of many previous concepts, initiatives and movements. NCA has, however, shown that, particularly in the biodiversity and environment sector, key players have been known to pull in different directions because of different objectives and value perspectives. It can therefore be argued that the multidimensional factor that has emerged as a variable within complexity may have more influence on the socially constructed processes and relational dynamics within the theme Context than initially anticipated.

6.2.1.3 *Dominant tenet: Ambiguity*

The tenet, Ambiguity, which highlighted the nuances of uncertainty and the level of understanding of the subject matter being investigated, interacted within the construct Complexity and emerged as the dominant tenet amongst the tenets Multidimensional, Space and system, Time, New, and Scale.

Key highlights of the tenet:

- Divergent thinking and views were common.
- Language, as a means of communication, was a significant barrier.
- Ambiguity allowed the concept of NCA to be imposed onto stakeholders.
- Relationships were found to be dynamic, tenuous at times and uncertain.
- Ambiguity has both positive and negative effects on co-creation and leadership, with the positive effects allowing the concept to advance in different directions.
- Time can exert its influence on the level of understanding, both positively and negatively.
- Context through space and systems can have both positive and negative effects on the co-creation process.
- Scale was found to have a negative effect on the co-creation process.
- Ambiguity did not act independently, but it interacted with identified factors and emerged as a significant driver underpinning the co-creation process.

Interpretation

The case context of NCA, which has come about as a mechanism to address global sustainability challenges, has unveiled ambiguity as a key factor in this context. Bullock and Trombley (1999:25) define ambiguity as something having more than two meanings. It is usually and often underpinned by vagueness, confusion, uncertainty, words that are used almost synonymously to describe ambiguity. Uncertainty due to increasing global divisions has emerged as one of the key global issues that the world is currently facing (WEF, 2020). Divergent thinking and views amidst increasing uncertainty have been found to occur within the case context of NCA. Many participants have confirmed the ambiguity and vagueness of NCA. There has been much confusion regarding language, terminology, communication and concerns of duplication and overlap within the case context. There is evidence that the concept has been imposed on stakeholders by the current leadership as opposed to it being gradually and voluntarily absorbed and taken up by its followers and supporters.

The case context has shown that leadership and the emerging relationships within leadership were dynamic, tenuous at times and also uncertain. However, despite these issues of uncertainty and ambiguity within the case context, the results have indicated that the concept has been able to advance with much of its success been attributed to ambiguity. Blom and Alvesson (2015) describe leadership as complex, messy, vague and subsequently a source of confusion and ambiguity. Uhl-Bien and Arena (2017) argue that whilst leaders around the world are increasingly faced with challenges of uncertainty and explicitly the notion of ambiguity, leaders very easily and confidently take on these challenges as a way of finding hints to address them and decisively take the appropriate actions. The lack of a standardised methodology for conducting and implementing NCA has allowed it to emerge in different directions. In addition, given its multidisciplinary nature, ignorance and a lack of expertise on the part of the numerous stakeholders have also been instrumental in its progress.

Co-creation was found to be taking place within the case context, but the extent to which and how it was occurring was unknown. Czarnota (2018) argues that co-

creation is an uncertain practice largely because its numerous actors are unpredictable and often unknown. The case context therefore revealed various aspects of ambiguity as a result of its interaction and tensions between the tenets of the construct Complexity within the theme Context. Time has shown to manifest its influence over the level of understanding of new concepts such as NCA. The case context has shown that a concept can start off by appearing confusing and vague, but over “time” its scope can be defined and it can emerge clearer. However, “time” can also result in a concept diverging in a different direction, creating more confusion and misunderstanding. The “space and systems” within which any concept operates can also result in uncertainty and confusion, or alternatively it can promote and encourage more clarity immediately or over “time”. The tenets “Scale” and “Multidimensional” have shown that “ambiguity” can increase if there are too many players involved. The scale at which a concept like NCA operates can also be problematic, as it can result in some of the details being neglected or misunderstood, and some of the smaller players can be left behind and remain in a state of confusion. The tenet “New” has confirmed that “ambiguity” can arise in any process or concept like NCA. When something is “new”, often very little is known about it and hence broader understanding of it tends to be limited. This can result in confusion, anxiety or fear, which can exacerbate “ambiguity”. However, notwithstanding the adverse effects of something “new”, it can be argued that newness can also stimulate interests, enthusiasm, risk-taking and action, despite the level of “ambiguity”. There seems to have been a layering of “ambiguity” that emerged throughout the process within the case context of NCA. The dominant tenet Ambiguity within the construct Complexity has emerged as a relevant driver of processes within context.

6.2.1.4 Construct: Context – Collaboration and coordination

Collaboration and coordination are essential features in leadership theories (Scott *et al.*, 2018). Contextual factors are the physical space that are inclusive of the relational dynamics and macro and micro-processes of the interactions within relationships that supports the interdependency of thoughts, ideas and actions (Fairhurst & Uhl-Bien, 2012; VanVactor, 2012). The interactions of these key elements are instrumental in the co-creation process (Reypens *et al.*, 2016).

Key highlights of the construct:

- It is possible to collaborate with stakeholders from different disciplines.
- Face-to-face collaboration is still the most popular and preferred choice.
- Coordination is challenging and time-consuming.
- Joint collaboration is possible depending on the goals and desired outcomes.
- Multidisciplinary processes are dependent on multidisciplinary collaboration.
- Integration of ideas and diverse views requires a concerted activity, taking on many forms.

Interpretation

The case context of NCA has highlighted that close collaboration between related disciplines, including unrelated areas of work, was possible and was included in the collaboration processes that took place. De Prado Salas (2016) argues that coordination, however, can be categorised into communicative, interpersonal and cognitive coordination, all of which are significantly context sensitive and hence determine the quality of such interactions.

NCA has shown that joint collaboration can occur, depending on the intended outcomes and the tried and tested processes to get to the desired state. Durugbo and Pawar (2014) emphasise that it is necessary to explore how these interactions and relationships emerge during the collaboration of stakeholders in the co-creation stages. Results have shown that collaboration and coordination provided a physical and functional context for co-creation in leadership (See D1:210...P1).

D1:210 *"I think the UN is doing a really great job gathering as much information and feedback as they can and at every one of these major workshops they have and then digesting it carefully over months afterwards"* - D1: Participant 1.

Bordt (2018) argues that there is a need to expand the field and actively integrate the perspectives of a broader community. Results have implied that NCA, because of its multidisciplinary nature, demonstrated its reliance on the coordination of

broader key stakeholders who have had the knowledge and expertise necessary for the successful advancement of the concept.

The results have shown that in the collaborative processes of NCA, despite the availability of advanced tools such as teleconferencing and webinars, in-person collaboration, where participants were physically and collectively present at a particular venue, was still the preferred choice of engagement and collaboration. De Prado Salas (2016) explains that face-to-face coordination is preferred but that communicative coordination can still take place through other means. Results have suggested that as long as there was enough time for participants to engage and interact adequately, face-to-face or physical presence and participation were deemed more effective as a communication and coordination mechanism.

Reypens *et al.* (2016) and Nel *et al.* (2015) speak of boundary conditions which can hamper thorough stakeholder collaboration and coordination. Certain insights on collaboration and coordination have emerged that challenged how NCA has been undertaken. It was found that subject matter, such as NCA, which is often philosophically difficult to digest, experienced difficulties with the coordination of stakeholders. Each time the network was expanded and other stakeholders were included in the conversation and dialogue, foundational information needs had to be repeated at these events to bring both the previous participants as well as the new participants to the same level of understanding. Results have shown that this took place frequently, which took a lot of time and subsequently hampered progress and slowed down the process.

Integration, which is facilitated by the relational dynamics within relational leadership (Nicholson & Kurucz, 2019), is also a key consideration for collaboration and coordination, as it promotes convergence of ideas, perspectives and thinking (VanVactor, 2012). Results have indicated that integration involved bringing people onto the same level of thinking and including their perspectives into the current thinking (See D46:21...P22).

D46:21 “ <i>Obviously to do a proper NCA you need a network of people who think that way</i> ” - D46: Participant 22.

Results have further demonstrated that it was often assumed that linkages between concepts, themes and even related challenges were logical, obvious and easily interconnected. Respondents in this research indicated that NCA has been perceived to successfully interconnect water, biodiversity, carbon and how all these aspects related to the economy through the production of accounts. It can therefore be argued that integration and interconnectedness were not an easy or obvious task. Integration of ideas, perspectives and thinking from diverse heterogeneous stakeholders can take many forms and the extent to which it occurs can therefore vary extensively.

6.2.1.5 Construct: Culture: pragmatism

Pragmatism may be described as a situation-based perspective, where action and practice underpin sense and decision-making, rather than it occurring as a result of any deliberate alignment to the different ideological theories or doctrines (Dalsgaard, 2014). The issue of anthropogenic and non-anthropogenic positions, strong sustainability versus weak sustainability, may influence the way pragmatism is constructed.

Key highlights of the construct:

- Long-term goals were found to be less important than the practical relevance of accounts.
- Long-term goals were necessary to make the shift from supply-driven to policy demand.
- Feasibility and certainty were important for implementation where scope, credibility and needs were addressed.
- NCA is still very much project-driven, where accounts are supply-driven rather than demand-led.

Interpretation

Support and guidance for the production of accounts in the context of relational leadership, where multiple interactions and relationships were constructed, have emerged in the findings of this study. Afeissa (2008) highlights Norton's

philosophical endeavours to challenge the practical relevance of issues, emerging concepts and theories, and argues further that principled positions are not as important as providing the practical support and guidance. Mumford *et al.* (2008) identify three types of so-called 'outstanding or authentic leadership', namely charismatic, ideological and pragmatic. All three types of leadership have an impact on the casual factors of vision and goal setting from a leadership perspective (VanVactor, 2012).

Findings have demonstrated that there was a significant disconnection between the supply and demand for NCA and its products. It is often assumed that if something such as the accounts in the case of NCA were produced, it would be used by relevant stakeholders. NCA has shown that the production of accounts and their usage and uptake were dependent on the immediate and practical needs of the decision- and policy-makers. It can be argued that NCA has been driven by project-based targets to supply accounts. Deak (2009) argues that real innovation is not the same as project management, where deadlines and targets are achieved, and it is further argued that such practice of project management of account production can actually hamper innovation. Results have also indicated that longer term aspirational goals, ideals and vision were found to be less relevant (See D48:16...P24).

D48:16 *"Will we still be talking about it in 30 years' time, I don't know? This is an effective way of having a fruitful discussion just now, absolutely yes. And if it lasts for ten years that is great, if it last for 20 years that's great, if it lasts for 1 year and something else comes along to do the job, fine"* - D48: Participant 24.

However, evidence from the research has indicated that without a longer term aspirational goal, the focus would be limited to the production of accounts that would increase supply rather than focusing on the policy utility of accounts and the use of information contained therein. Nevertheless, it was found that a focus on supply increased the certainty of practice⁹, which in this case resulted in a better product or accounts with good information. Results have indicated that the

⁹ Certainty of practice can be described as the credibility of the variety of choices implemented that are most effective (Bordt, 2018; Knook *et al.*, 2020).

certainty of practice and feasibility¹⁰ were also relevant. Bordt (2018) argues that practicality, feasibility and certainty of practice in different contexts, can enhance convergence and improve implementation. The certainty of practice conducted by relevant stakeholders makes novel concepts such as NCA less esoteric and theoretical. Feasibility, however, underpins the certainty of practice. It was found that through feasibility analyses, certainty of practice was improved, priorities were informed, whilst an array of options available was provided (See D51:41...P27).

D51:41 “*The cool thing is once the methodology of this thing is established, and I think we have the people in place with the expertise to know the issues that have evolved over all the other things to try and come up with a clever way of doing it this time, they have all the challenges listed out in their heads that we have to address*” - D51: Participant 27.

However, the certainty of practice can also be counterintuitive as it can limit innovation and progress. It can be argued that with the emphasis placed on having certainty of any process or product, creativity can be stifled and advancing or moving forward can be hampered. The construct of a culture of pragmatism highlighted the tensions and interactions between idealism and pragmatism which were important for convergence and decision-making. These findings resonate with those of other studies (Bordt, 2018).

6.2.1.6 Construct: Culture of diverse views

The construct, Culture of diverse views, was shared between the theme, Context, and the theme, Value creation. In the former it was associated with the construct of Culture – innovation and discovery, which was balanced by the construct of Culture – pragmatism on the one hand and the construct of Context – collaboration and coordination on the other. The construct is presented here for its contextual influences that resulted in convergence in some contexts or divergence in others.

¹⁰ Feasibility in the context of NCA refers to issues of implementation where semantic differences exist between scope feasibility and need (Bordt, 2018).

Key highlights of the construct:

- Context played a significant role for allowing the expression of diverse views that were important for convergence, consensus building and co-creation.
- Despite diverse views, a willingness to collaborate allowed for interaction and engagement to achieve synergy and common outcomes.

Interpretation

The multidisciplinary nature of the case context of NCA was found to pique the interests of natural scientists who, despite their beliefs and values, still wanted to engage with the production of accounts, which were nevertheless deemed as products that were economical-centric. This may have conflicted with a biological, “mother earth”, “respect for nature” or human-centric approach that was often held by most natural scientists. Results have indicated that diverse views were given expression within the case, where the context allowed for the divergence or convergence of views, which were found to be significant for the co-creation process. Kurucz *et al.* (2017) argue that when undertaking critical thinking, leadership processes are able to adopt elements of co-production that recognise the diverse world views essential for promoting synergy and convergence. Afeissa (2008) explains that pluralistic divergent perspectives can actually interact to produce a joint outcome (See D70:42...Sr18).

D70:42 “*I think that the critical issue here is that processes and assessments of NC and NCA incorporate multiple different views, perspectives, beliefs and values of NC. This diversity of opinion and recognition of difference is the only way that equity around benefits can be incorporated*” - D70: Survey respondent 18.

The expression of diverse views through the numerous collaborative contexts created within the case context facilitated the co-creation process.

6.2.1.7 Construct – Scale: Top down

The construct Scale: top down was opposite in nature or contradicted the construct, Scale: bottom up. Uhl-Bien *et al.* (2007) claim that leadership models of the last century have focused on top-down bureaucratic models that are

structurally and functionally organised for hierarchical mechanisms of control and authority, which have come to be known as administrative leadership.

Key highlights of the construct:

- The NCA case context highlighted how big bureaucratic organisations have shaped systems around the world.
- Money and financial backing have directed the agenda.
- NCA has been conducted or implemented by external expertise that were often not particularly familiar with local contexts, systems, people and policies.
- Certain influential people have exerted their power in controlling who is part of the process.

Interpretation

Top-down contextual factors have exerted their influence on structures, systems and people. The results have revealed that the process that was undertaken to advance the concept of NCA was not democratic enough, which implied that it was still very much top-down driven (See D1:7...P1).

D1:7 *"It is also my impression that this is generally a top-down idea, meaning that the initiative is at the UN that says, Hey wouldn't this be a good idea or it is at top universities where forward thinking charismatic professors were also good writing writers say to the policymakers, wouldn't this be a good idea, or in the US which is a separate US natural capital accounting group that people know the people in the UN process but it's not complete cross over" - D1: Participant 1.*

Results have indicated that NCA appeared to be a global agenda where big bureaucratic organisations were pushing particular systems. Mumford *et al.* (2008) claim that certain leadership styles, such as charismatic leadership, are emergent in such bureaucratic systems. Uhl-Bien and Arena (2017) further argue that all human organising systems have hierarchy and features of bureaucracy and the obvious tendency of these human systems of bureaucracy is to ensure that order, structure and rules are maintained. It can therefore be argued that such systems function in a context of authority, power and position. The NCA case context highlighted how big bureaucratic organisations have shaped systems around the

world. Money, budgets and financial backing of powerful organisations have driven the NCA agenda forward. Donor-funded projects and their timelines took priority over the priorities of the local context, making it challenging for realistic achievements through NCA.

Dalsgaard (2014) argues that structures and systems emerging from various processes such as donor funded projects influence the design and structure of national systems. Results have shown that organisations by themselves took ownership of processes and developed a reputation of being the guardian of standards, which gave new concepts such as NCA legitimacy and credibility. Results have suggested that these human organised systems were shaped by certain influential individuals (See D44:36...P20).

D44:36 “*Because I really think perspective wise, like a bunch of European and a few Australians thrown, like putting these standards together, there was this process, I mean it wasn't really transparent*” - D44: Participant 20.

NCA has demonstrated how certain individuals have been able to control the key actors in this context through hiring the same people repeatedly. In this way, even the thinking and the products that were produced, such as the guidance materials emerging from these processes, were also managed in line with the wants and requirements of key individuals, thereby exercising their power and propagating their own ideas. The case context has revealed that NCA has been conducted or implemented by external experts who were often not particularly familiar with local contexts, systems, people and policies. Bogner *et al.* (2009) argue that in other contexts on a technical level, so-called experts were found to define agendas based on their knowledge and expertise. Top-down bureaucracy is still common with significant contextual impact on leadership, in particular co-creation processes and relational leadership.

6.2.1.8 Construct – Bottom up

Several key insights have emerged within the construct, Scale: top down. However, as indicated, the construct Scale: top down had tension arising with the construct, Scale: bottom up. DeRue (2011) argues that top down interacts with

bottom-up contextual factors that shape social interactions. Uhl-Bien *et al.* (2007) describe bottom-up behaviour as an informal emergence which provides the context or space where interdependent interactions and relationships emerge to produce leadership.

Key highlights of the construct:

- Significant cases where tangible issues and crisis points, including longer term development planning, were addressed through NCA.
- The case context has expressed examples of how interdependency in interacting relationships has occurred, allowing innovation to emerge.
- Volition has emerged as an important driver of the co-creation process where people were allowed to self-create their own collaborative structures which they themselves marketed and promoted.

Interpretation

The case context of NCA has shown the emergence of bottom-up behaviour despite the tension observed with the construct Scale: top down (See D42:22...P18).

D42:22 “Where there is no essential coordinated process in place to assign roles and responsibilities, I foresee it as more of a bottom up approach coming from an international organisation, whether they have a mandate or project to work in this area” - D42: Participant 18.

In terms of prioritisation, results have shown that there have been significant cases where tangible issues and crisis points, including longer term development planning, that were addressed through NCA, demonstrated the informal emergence of bottom-up behaviour.

Results have demonstrated how creativity, enthusiasm and longer term aspirations of developing a uniform standardised approach were allowed to manifest itself when given the space to do so. This further supports/gives credit to the literature (Mumford *et al.*, 2008; Scott, *et al.*, 2018), which argues that key elements, such as creativity, enthusiasm or interdependency, can emerge from flat organisational structures. Van Lange and Balliet (2015) argue that interdependency in interacting

relationships is relevant for joint outcomes, and further insights on these interacting relationships are particularly useful in understanding the common goal pursuits, stability and persistence of these relationships. The case context has expressed examples of how interdependency in interacting relationships has emerged. There were tangible examples of descaling NCA through the formation of interdependent relationships between national governments, local authorities and individual landowners, which confirmed the multi-level approach of NCA, given its national level origins. It can be argued that this is an example of innovation where NCA has been applied and improved upon to function at the local level.

Interdependency may be significant in bottom-up behaviour, and subsequently interacting with other factors, such as creativity, systems, structures and tools, and volition has emerged as relevant within the construct, Scale: bottom up. Uhl-Bien *et al.* (2007) speak of volition, which is another important factor and actor in bottom-up behaviour. Similar to other tenets of willingness to participate and enthusiasm, volition has emerged as a strong driver for the need to coalesce and organise together (See D1:15...P1).

D1:15 “*Two systems came out of that due to internal personalities and the way the offices are not designed to work together, the office of water and the office of research and development*” - D1: Participant 1.

Results have revealed examples of volition where people were allowed to self-create their own collaborative structures which they themselves marketed and promoted. The tenet of Volition has emerged as a significant factor in bottom-up behaviour.

6.2.1.9 Construct: Power – status

The construct Power – status, however, is associated with the construct, Scale: top down, and therefore balanced the construct, Scale: bottom up. The construct Power – status is therefore influential in its interactions. Osborn *et al.* (2014) argue that context for leadership emergence is important where a nested context from

the micro to the macro level exists, wherein individuals are able to act amid bureaucratic conditions of context.

Key highlights of the construct:

- Large global organisations and specific lead countries have spearheaded the NCA movement.
- Guidance materials and publications on a technical level, as well as broad guidance to assist stakeholders, are also managed.
- Influential people and strong personalities are active and do facilitate and hamper the process.

Interpretation

Results have highlighted some of the bureaucratic conditions under which NCA has been operating, where big organisations, such as the World Bank, International Monetary Fund (IMF), and countries like Australia and the Netherlands, have provided leadership and the resources for NCA. Jones and York (2016) confirm that all leaders, by virtue of their labelling as leaders, endowed titles and positions, have a certain degree of power. NCA has demonstrated the nuances of power, where large worldwide collaborative bodies, core groups of people and even influential individuals worked together to provide guidance materials, and what gets published was directed and managed by leaders and strong personalities that have been found to actually hamper the process (See D1:207...P1).

D1:207 “*You are recommending this with the best information you have now, let’s try this and that’s also a power that UNSD, has enjoyed their hands are a little more tied because even for experimental ecosystem accounting and draft technical recommendations as guidance, it always looks pretty official when the UN seal is on it*” - D1: Participant 1.

The power and status of organisations and individuals have influenced the processes of co-creation and relational leadership, both positively and adversely.

6.2.1.10 Reflection

The sub-objective of the theme Context was to investigate how leadership functioned in the context of NCA to contribute to answering the overall research question of how leadership was co-created in the emergent case of NCA. The research highlighted that context, complexity and ambiguity have emerged as key factors to improve understanding of how leadership was co-created.

6.2.2 Theme: Value creation

Within this theme: Value creation, the construct “Trust – legitimacy and consensus building” emerged as the dominant construct. The dominant and key tenet within the theme was the tenet Credibility (Table 6.4).

Table 6.4: Theme: Value creation: constructs and tenets

Theme	Codes→Constructs	Emerging Tenets
Value creation	Number: 7	Number: 4
	Trust: legitimacy and consensus building (<i>dominant</i>)	Credibility (<i>dominant</i>) Salience Common goals Sharing Choice
	Character traits and identities	
	Culture of diverse views	
	Respect	
	Intentions and interests – power	
	Experience – experts	
	Interests and intentions – humanity and morality	

Key highlights of the theme:

- The theme value creation comprised several constructs which allowed relationships to interact, illuminating the value created within for the co-creation process.
- Value created between all actors within the case was more supply-driven than demand-led.
- Different value systems, value judgements and choices at multiple levels and from multiple actors affected how people viewed nature and cost its benefits and services.

- Value judgements and value choices were influenced by the character traits of key actors, including their background, culture or their experience or inexperience in world matters.
- There is a need for correct information to inform their choices.
- Value creation did not function independently; it interacted with other themes, constructs and tenets, allowing the construct “Trust: legitimacy and consensus building” to emerge as the most dominant, with “Credibility” as the dominant underpinning tenet.

6.2.2.1 Theme Interpretation

Sjodin (2019) argues that value co-creation, comprising a number of constructs, is context-sensitive, complex, process-focused and significantly enabled by relationships. In the context of co-creation, the case of NCA highlighted how value was created between the proponents of NCA and other stakeholders. The relationship between the stakeholders’ needs and wants emerged as being complex and challenging. The case context highlighted the lack of clarity on the selection of broader stakeholders, the users and uses of NCA, and therefore appeared to be more supply-driven than demand-led (See D4:8...P4).

D4:8 “*There is still a disconnect too, between the demand for these accounts and driving them and doing them because we can, so although policy implications of accounts are pushed and pushed and pushed until people understand how they can be used and what they are, it’s very hard to generate demand*” - D4: Participant 4.

This finding resonates with the outcomes of the theme Context, where NCA was perceived as complex and ambiguous, such that the value proposition to integrate the cost of nature into decision-making and other policy-related processes through NCA was a challenging case to make to all levels within the case context.

The case context can be described as being underpinned by the different value systems of nature, its goods and services. The word ‘value’ can be described in a world or cultural context as a personal choice of how relevant something is or it can fundamentally be referred to as a measure of integrating the economic, social and environmental elements for present and future well-being (Ehrenfeld &

Hoffman, 2013; Pascual *et al.*, 2017a). Results have demonstrated that different value judgements and choices at multiple levels and from multiple actors affected how people viewed nature and cost its benefits and services. Several participants have expressed the need for correct information to inform their choices. On a technical level, the case context has shown that there were also several value judgements that took place in the processes of NCA in developing the natural capital accounts, such as the categorisation and classification of ecosystem services, or the interpretation and implementation of the supply and use tables. The case has shown that although these contexts are technical in nature, the decision-making that takes place is value laden and subjective.

Other findings have indicated how value judgements and value choices were influenced by the character traits of key actors, including their background, culture or their experience or inexperience in world matters. People's interests and intentions, which involved economic and power struggles, or the humanitarian and moral obligations of people, were also relevant factors. Findings have suggested that communication, appreciation and respect are relevant within the emerging relationships. Many participants alluded to the need for trust, consensus of ideas, perspectives and credibility, amongst the key actors.

Nicholson and Kurucz (2019) argue that in a relational leadership context, the value creation of relationships is important for collective learning and well-being. The case context has demonstrated the need for good relationships that are based on interests, passion and commitment which leads to success. Uhl-Bien (2006) speaks of shared understandings, collective meaning making and the ability to have an impact on the needs and welfare of others, which achieves social order and change. Kurucz *et al.* (2017) speak of the value proposition for the entire process of relationship building between actors that is also necessary for the co-creation process.

Within the theme Value creation, the constructs interacted, creating tension, suppressing constructs in some instances whilst promoting the dominance of other constructs. The construct "Culture of diverse views", which is also part of the theme "Context", contributed to the construct "Interests and intentions – humanity

and morality”, which contradicted the construct “Intentions and interests – power”. Subsequently, the construct “Culture of diverse views” was catalysed. This construct of “Culture of diverse views” also contributed to the construct “Character traits and identities”, which is part of the construct “Experience – experts”, and this construct is subsequently also associated with the construct “Respect”.

6.2.2.2 Dominant Construct: Trust: legitimacy and consensus building

The construct Trust: legitimacy and consensus building emerged as the dominant construct within the theme Value creation.

Key highlights of the construct:

- Association with a reputable organisation allowed initial stakeholder consideration of the concept of NCA.
- Prioritisation and establishing relevance of outputs allow for increased stakeholder buy-in and success of any project.
- The prioritisation of engaging with all stakeholders and building trust in the process has been found to be a key step in the process of relationship building.
- The coaching and mentoring approach of NCA has established a sense of confidence amongst stakeholders.
- Equating NCA to other well-known charismatic processes, such as climate change, gives new concepts credibility.
- Standardised and commonly accepted frameworks and methodologies facilitate consensus building, trust and credibility.
- Trust, consensus building and relationship building is a process that requires adequate investment and time.
- Several elements of communication, engagement, legitimacy, consensus building, time and effort are needed for the process.
- Multidisciplinary stakeholders are sensitive to hidden agendas and urgency.
- Consensus amongst strong personalities and technical experts is complex and also time-consuming.
- Smaller groupings and gatherings can facilitate and resolve technical disparities through closer collaboration, conversation and discussion.

- Communication and transparency can yield positive outcomes for consensus building, trust, relationship building and instilling confidence amongst stakeholders.

Interpretation

Uhl-Bien and Arena (2017) argue that group cohesion allows individuals and actors to rapidly come together and share information in a trusted context which results in positive outcomes, facilitating learning and risk-taking. It can be argued that stakeholders initially and generally required a sense that NCA was genuine and lawful before they considered engaging with it. The NCA process, having been initiated and associated with the United Nations and the World Bank amongst other big international organisations, has given the concept legitimacy and credibility, which has led to significant progress and success of NCA. Legitimacy is part of the consensus building that can lead to trust and further relationship building.

Kurucz *et al.* (2017) emphasise that relational leadership involves an ongoing process of consensus building between leaders and technical actors. Results have indicated that at the global level, NCA has prioritised the aspect of reaching consensus on the relevance of the accounts amongst its stakeholders, which has contributed in part to its success to date. The case context has been able to establish a global platform for training and knowledge sharing and has built international consensus around NCA. The coaching and mentoring approach of NCA has established a sense of confidence amongst stakeholders. Results have suggested that NCA has been equated to the Kyoto Protocol in that it would have the same potential in attaining an integrated and joint response from the global society for the climate emergency. The climate change process has been a flagship example of reaching worldwide consensus on an important global issue. Often, with many cross-cutting issues and multidisciplinary organisations, differences occur in how concepts and new initiatives are interpreted and sometimes there will be general consensus on what to do, but very little consensus on how to do it. This has been the case with NCA, where methodologies and inconsistencies in the way the accounts were developed were

resolved to a certain extent through the establishment of the SEEA Central Framework, which has been recognised globally as the NCA statistical standard.

The prioritisation of engaging with all stakeholders and building trust in the process has been found to be a key step in the process of relationship building. Sjodin (2019) and Czarnota (2018) argue that trust is a key component of relationship building critical for the success of the co-creation process. The research has illuminated the need for trust, which has emerged as the dominant construct within the theme Value creation. Results have indicated that trust is a process comprising several elements of communication, engagement, legitimacy, consensus building, time and effort that needed to be invested in the process in order attain an adequate level of trust. It can therefore be argued that engaging with multidisciplinary, multi-level stakeholders is difficult and challenging, especially when engaging on a topic that is complex and ambiguous. It was found that this process took time and therefore could not be rushed. It can be argued that if expediency and anxiety are detected in the process, the consensus and relationship-building process can be stalled and delayed further. Stakeholders were found to be very sensitive to these pressures, especially when the scale was large and the platform was multidisciplinary, as was the case of NCA. The case context has shown that there existed conflicts on procedural issues, particularly when dealing with difficult stakeholders, and disagreements were bound to arise, but overall these challenges were part of the consensus-building process. It can be argued that building consensus amongst strong personalities and technical experts is complex and also time-consuming. It was found that these relationships were more prone to divergence and therefore needed to be nurtured through smaller groupings where technical disparities could be ironed out rationally, logically and through closer collaboration, conversation and discussion.

This process of consensus building has been found to improve communication at all levels and subsequently led to positive outcomes. When communication amongst stakeholders has improved, stakeholders were more open and comfortable to engage and reach consensus. NCA has demonstrated that frequent communication, highlighting some of the risks and opportunities that are relevant

to respective stakeholders, has instilled greater confidence amongst actors (see Section 6.2.3 for more on communication).

6.2.2.3 Dominant tenet Credibility

The tenet Credibility, which highlighted the intentions, reliability and integrity of actors in the process, interacted within the construct Trust: legitimacy and consensus building, and emerged as the dominant tenet amongst the tenets Salience, Common goals, Sharing, and Choice.

Key highlights of the tenet:

- Multidisciplinary fields such as NCA can harness the credibility and reputation of well-established disciplines.
- The name or term that is used to describe a new concept is important and can yield positive or negative results, depending on the credibility and reputation of the name or a term.
- Credible and influential people can have an impact on establishing credibility for a particular outcome.
- Stakeholders have expressed the need for credibility of the processes within NCA, where standardisation would link to common goals and aspirations.
- Ownership of the process amongst stakeholders was also found to be necessary to drive the process forward.
- Credibility interacting with the other identified tenets “Salience”, “Common goals”, “Sharing”, and “Choice”, was found to be dominant and essential throughout the value chain of the co-creation process in relational leadership.

Interpretation

Nel *et al* (2015) reiterate how co-production builds credibility, salience and legitimacy of outcomes, which increase uptake and further implementation. Results have suggested that NCA, which is a naturally multidisciplinary field where the roles and partners have been strongly technical and financial, has harnessed

the credibility and reputation of the finance and economics profession, advancing accounting to the forefront (See D69:19...Sr17).

D69:19 “*The strength is the development of an integrated information system rooted in official statistics which gives credibility and independence to the figures*” - D69: Survey respondent 17.

The case context has used the reputation, credibility and legitimacy of accounting as an established financial reporting method to move the concept forward. This entire field of NCA, as it is now called, managed to adopt accounting as part of its collective term and definition, making it more palatable to a broader audience which has subsequently been responsible for part of its success so far. Credible and influential people, as in the case of NCA, such as Ministers, Heads of State and technically astute people, have played an instrumental role and championed the NCA movement forward. It can therefore be argued that the credibility of the people involved in the process was important for attaining legitimacy. Stakeholders have expressed the need for credibility of the processes within NCA. Findings have indicated that there is a need for standardisation of process, efforts to maintain and increase its relevance and link it to common goals and aspirations.

Progress towards attaining ownership of the process amongst stakeholders was also found to be necessary. It was found that if stakeholders felt that they owned the process, they had an incentive to exert more efforts and drive the process forward.

NCA has demonstrated the need for a global platform for training and knowledge sharing, as was the example of the World Bank WAVES programme. The results have indicated that NCA has been designed to inform choices both on a personal and technical level, whilst ensuring that individual choice and national autonomy are maintained. Findings also suggested that the products of NCA, such as the accounts and communication materials which are still in their infancy in terms of their usefulness and uptake, should have been able to bring credible information into decision-making. Hence, it can be argued that the entire value production chain requires a certain level of credibility. Cannatelli *et al.* (2017) argue that legitimacy and credibility were the two factors actually present in lower levels of an

organisation, despite traditional hierarchical structures and the lack of power and position associated with these lower levels.

The tenet Credibility interacted with the other tenets and consequently emerged as the dominant tenet. Credibility has therefore emerged as an important factor within the trust and relationship building process. It has also emerged as an important component for successful co-creation.

6.2.2.4 Construct: Culture of diverse views

Uhl-Bien and Arena (2017) describe this as an adaptive space where robust engagement between different people, perspectives and tensions interact and come together in a creative manner, allowing new ideas and fresh perspectives to emerge.

Key highlights of the construct:

- There is a need for recognition of different perspectives and approaches to value nature which are relevant for building credibility and consensus in the co-creation of leadership.
- Discipline experts are needed to improve understanding of the myriad of views emerging from personal, professional, cultural and ethical basis.
- Culture of diverse views interacted with the identified tenets “Cultural”, “Disciplinary, practical, technical”, “Ethical”, and “Progressive”, which facilitated divergence of views in some instances and convergence or consensus in other situations.

Interpretation

Findings have suggested that from a consultation and engagement perspective, different value systems, perspectives and world views that related to landscapes and ecosystem services appeared to be taken into consideration. However, this has led to NCA being implemented in a linear and limited way where the information outputs of NCA were also limited and biased.

Farrell (2011) argues that there are certain features of nature, like certain ecosystem services, whose productivity is governed by the laws of physics and therefore cannot be controlled by economic measures. The case context has confirmed the different features and perspectives of nature. It can therefore be argued that caution was expressed about the use of NCA in support of alternative ways to recognise the value of nature, such as the rights of mother earth. It can be argued that different approaches to nature and natural resource management existed.

NCA has demonstrated the influences of different cultures, communities, businesses and governments. The case context has also revealed personal and ethical perspectives in addition to different cultures, professions and disciplines. Stirling (2017) emphasises the importance of technical experts or specialist scientists focusing specifically on views and concerns of uncertainty, ambiguity and including views emerging from ignorant or from less informed persons. Findings have suggested the need for discipline experts who can demystify and clarify issues and emerging concepts such as NCA.

The construct Culture of diverse views, within the theme Value creation, overlapped with the theme Context. Here the code provided tensions and interactions between the emerging tenets “Cultural”, “Disciplinary, practical, technical”, “Ethical”, and “Progressive”, and contributed to the process of convergence and divergence within the construct.

The construct Culture of diverse views was therefore constructed with these emerging tenets and exerted its influence on the dominant tenet “Credibility” within the construct.

6.2.2.5 Construct: Intentions and interests – power

Büscher (2008) argues that the neoliberal approaches which adopt that anything can be bought and sold in the market are challenging for the environment field, which further embeds inequality and undermines any real transformative alternatives.

Key highlights of the construct:

- Broader socio-economic issues of poverty, equity and ethics are not adequately considered in the NCA case context.
- Economic and market-centric thinking to measure a price on everything is a growing alternative perspective.
- Attaining power or maintaining power, globalisation and economic domination is another consideration for the co-creation process of relational leadership.
- The construct “Intentions and interests – power” that was present, interacted with other constructs and tenets and created tension within the co-creation process.

Interpretation

Findings have revealed that issues of poverty, equality, ethics and equity have been significantly understated in the case context. There were suggestions of mistrust and abuse of the information from NCA where it could lead to the realisation of the real value of nature and subsequently result in its utilization and exploitation. The views and opinions of well-known political economists and environmental scholars, such as Fioramonti, Vandana Shiva and Monbiot, echo the concerns of a market-based system, economic perspective and the desire to price anything (The Guardian, 2014). Markets and prices have dominated people’s lives (Norgaard, 2010), and the accounting language is further supported by globalisation policies that promote western and developed country practices (Hopper, Lassou & Soobaroyen, 2017).

The Value creation provided within this construct suggested that attaining power or maintaining power, globalisation and/or economic domination, may be present in the NCA movement (See D51:65...P27).

D51:65 “ <i>There is a conditioning that is happening within our social standing</i> ” - D51: Participant 27.

The construct Intentions and interests – power has interacted with two constructs within the theme, Trust: legitimacy and consensus building, and Culture of diverse views, including emerging tensions with other themes, constructs and tenets, and has provided insights on the intentions, interests and power dynamics of actors within the various processes of leadership.

6.2.2.6 Construct: Character traits and identities and the construct: Respect

The research explored leadership through a relational leadership lens. Kelly (2013) argues that when leadership is viewed in this context, collective or collaborative characteristics surface, dominating character traits and identities. The research aimed to reveal if character traits were actually undermined and dominated by relational leadership identities where the value creation emerged through collaborative characteristics as a result of background, behaviour and culture or through social identities.

Key highlights of the constructs:

- The research was based on the perspectives and views of discipline experts from within the case context of NCA.
- Confident, intelligent people who were good champions in their own right, who commanded respect and possessed credibility, were the drivers behind the NCA movement.
- Respect and recognition surfaced in the engagements with multidisciplinary experts, other champions and diverse stakeholders.
- A small group of multidisciplinary experts that were quite well connected and networked conceptualized the notion of NCA.
- The functioning and experience of experts within a relational leadership context emerged as important for the co-creation process.

Interpretation

The case context of the research was dominated by design by discipline experts despite the multi-level, multidisciplinary nature of NCA. It must be noted that attempts to gain a broader stakeholder perspective on the research were carried

out through administering the survey and convening the focus group. However, by default only discipline experts and NCA champions were the respondents for the data gathering process. The data sample for the research was discipline experts and NCA professionals, most of whom were experienced, confident intellectuals with strong characters, personalities and technical expertise (See D47:34...P23).

D47:34 “*It is very personal but what I tell people I am an environmentalist and want to move things in the right direction, I have a lot of intrinsic motivation*” - D47: Participant 23.

Ashkanasy *et al.* (2000) emphasise that social identities are central to the sense-making process which may be necessary for greater ownership of issues. The case context highlighted the need for confident, intelligent people who were good champions in their own right, commanding respect and possessing credibility. The construct, Character traits and identities, interacted with the construct Respect. It was found that respect of the discipline experts, their work and the champions of NCA, was an underlying factor in the case context. Midgley (2016) highlighted the importance of mutual respect which serves as an anchor that ensures impartial involvement in the co-creation process. All accounts of the consultation process and the ongoing engagement with multidisciplinary experts found that respect prevailed through actively listening to all perspectives and recognising expertise.

Subsequently, the use of experts in socially constructed processes such as leadership, has been frequently justified in this study, as the experts were catalysts for uncovering the ontology of any particular phenomenon or subject matter under investigation (Bogner *et al.*, 2009; Rosenthal, 2016).

Cannatelli *et al.* (2017) speak of the relationship between distributed forms of leadership and aspects of knowledge creation. The results have shown that NCA has been conceptualised by a small group of multidisciplinary experts that were quite well connected. The functioning and experience of experts within a relational leadership context therefore emerged as important for the co-creation process. Nel *et al.* (2015) emphasise the importance of sufficient experience and knowledge in co-production processes, which further builds credibility and legitimacy.

The construct Character traits and identities interacted with other tenets and constructs within and across themes, these interactions created tension, impeding or strengthening other constructs and tenets. These construct therefore provided insights on the role of character traits, discipline experts and other social identities of actors.

6.2.2.7 Construct: Interests and intentions – humanity and morality

The interests, intended actions and consequences on humanity are driven by value judgements and perceptions that acknowledge and address the boundaries within which multiple and diverse interests compete (Midgley & Lindhult, 2019). It can be argued that NCA should not have been perceived as a competitive space where there are winners and losers.

Key highlights of the construct

- Misconceptions exist that NCA is about money but its intention is for the greater good of humanity.
- Perceptions that NCA has brought about unexpected benefits through innovation which have led to the convergence of ideas in related fields.
- NCA is significantly dependent on people's buy-in, but it excludes human behaviour.
- NCA is an objective accounting process which appeals to the key actors' sense of moral duty and obligation.

Interpretation

The proponents of NCA claim that it is not about money but rather a concept that started as a social welfare accounting exercise that has now evolved into something that takes into consideration values, perceptions and cultural beliefs. Results indicated that NCA has brought about unexpected benefits through innovation which have led to the convergence of ideas in related fields. However, it was found that although NCA is also significantly dependent on people's buy-in, it somehow excludes human behaviour. Mirvis *et al.* (2010) argue that scholarship does not include a reflection on the interacting forces of the relational aspects of leadership which integrate the multiple interests, including the moral, social and

environmental elements. Hawk (in Nicholson and Kurucz, 2019) highlights the importance of taking into consideration the well-being of all of those who will be affected by actions taken, which is an integral part of the moral response and part of the co-development process. It was found that NCA is an objective accounting process which appeals to the key actors' sense of moral duty and obligation. Results have suggested that given the current state of affairs globally with the climate emergency, the biodiversity crises and frequent economic downturns, amongst others, NCA should be morally and ethically a priority.

The construct, "Interests and intentions – humanity and morality", engaged and interacted within the theme as well as across other themes, constructs and tenets and hence provided insights into the value creation intended for the greater good of humanity.

6.2.2.8 Reflection

The sub-objective of the theme, Value creation, was to investigate how value was co-created within and between relationships to contribute to answering the overall research question of how leadership was co-created in the emergent case of NCA. The research has revealed trust, legitimacy, consensus-building and credibility as important elements of value co-creation.

6.2.3 Theme: Communication

Within the theme Communication, Understanding emerged as the dominant construct. The dominant and key tenet within the theme was the tenet Conversation/Dialogue (Table 6.5)

Table 6.5: Theme: Communication: constructs and tenets

Theme	Codes→Constructs	Emerging Tenets
Communication	Number: 6	Number:7
	Understanding (<i>dominant</i>)	Conversation/Dialogue (<i>dominant</i>) Change Empathy Self-assess Team work Explain, interpret and apply

		Information technology
	Knowledge and theory of change	
	Organic coordination	
	Consultation and inclusiveness	
	Language	
	Command and control	

Key highlights of the theme:

- Joint meaning-making to improve understanding, which is partly a function of communication, comprising the elements of language, conversation and dialogue, underpins the co-creation and relational leadership process.
- Communication is not addressed adequately in NCA but when it was addressed, messaging was successful in linking concepts and for mainstreaming into public policies and the private sector.
- Joint publications that go beyond statistical figures that improve the narrative are required.
- Communication is interdependent on identified interacting tenets and constructs, allowing the construct understanding and the tenet conversation/dialogue to dominate over other elements.

6.2.3.1 Theme Interpretation

The aspect of joint meaning-making has emerged as an important factor in the process of relational leadership (Kurucz *et al.*, 2017; Nicholson & Kurucz, 2019). Communication, language, conversation, and/or dialogue are important tenets of joint meaning-making (Uhl-Bien, 2006). Results have indicated that NCA was able to successfully pull together messaging on the importance of nature, biodiversity and ecosystem services which have been crucial for mainstreaming biodiversity into public policies and the private sector. A need for joint communication publications with strong policy linkages that go beyond statistical figures and economic data has been expressed. It was found that the aspect of communication is not addressed adequately in NCA. It can be argued that communication is not necessarily a non-linear and a long process that is difficult to accomplish.

The literature on communication highlights the various tenets interacting within communication. However, for this study, in order to gain a deeper understanding of the role of communication in joint meaning-making processes and subsequently in the co-creation process, the research explored the interactions and tensions between the various tenets that were present within the case context. Results indicated the important, relevant and dominant tenets.

Interactions and tensions within the theme, Communication, therefore galvanised the construct, Consultation and inclusiveness, which was found to be in contradiction to the construct, Command and control, but was also supported or counterbalanced with the construct, Organic coordination. The construct, Language, was found to be associated with the construct, Understanding, which also contributed to the construct Knowledge and theory of change.

6.2.3.2 Dominant Construct: Understanding

Tensions and interactions within the theme, Communication, allowed the construct Understanding to be the most dominant amongst the constructs of this theme.

Key highlights of the construct:

- There was limited capacity within the NCA case context to challenge the current level of understanding of the various concepts and terminology that were introduced.
- There was a need to improve the narrative with clear, precise, visually explicit messages to improve understanding.
- Complete understanding is not always possible because of the technical nature of the subject matter, but varying degrees of understanding have positive benefits for joint meaning-making, co-creation and relational leadership.
- The change that NCA has brought in terms of alternative approaches and new ways of doing accounting has been generally positive, with tangible developments taking place across sectors.
- Empathy present in the case context led to self-organising collaborative structures that provided opportunities for improving understanding.

- Monitoring and assessing throughout the process can be beneficial for addressing stakeholder needs more effectively.
- Teamwork, which entailed the ability to work collaboratively in a team, through cross-functional committees, working groups, and other fora, promoted common understanding which underpins the co-creation process.
- Context for collaboration and interaction towards standardisation of processes were important for progress that supported co-creation.
- Keeping up with developments in information technology and the popularity of social media platforms promoted wider understanding.
- The emerging interacting tenets, adapted from other source that provided an indication of how understanding was taking place, revealed Conversation/Dialogue as the dominant tenet.

Interpretation

Communication also involves the goal of achieving a level of understanding through discussion, conversation, and/or language. Results have indicated that within the case context, there has not been enough understanding, particularly because the subject matter was difficult. Additionally, there have not been enough understanding and capacity present to constructively challenge the subject matter. Results have suggested that limited capacity existed to facilitate the cross-disciplinarian characteristics, language and understanding of how all the pieces and parts of NCA link and fit together. Results also suggested that the narrative on NCA needs to be improved to where the message is clear and precise, which includes better visualization that tells a story of what is happening in the economy and how NCA links with it.

The case context has shown that joint understanding is improving, with efforts to eliminate the communication jargon and bringing everyone to a common understanding. However, because of the technical nature of NCA, perfect congruence of certain aspects of NCA, such as common definitions and classification systems, is not always possible and should not overlap as it would be technically incorrect. Results have also indicated that the different levels of understanding amongst stakeholders that existed within the case context have

been beneficial for getting bigger endorsement and more enthusiasm about NCA. This is similar to the outcome of Ambiguity as a key tenet within the construct, Complexity, in the theme, Context, where an ambiguous context has actually led to greater engagement and enthusiasm about NCA. Findings have indicated that multiple projects, usually internationally donor-funded projects, have advanced the understanding of NCA.

The emerging tenets that provide an indication of how understanding was taking place interacted and created tension within the construct. Several authors use a variety of models to explain the process of understanding. The emerging tenets of understanding (adapted from ASCD, 2015) provided an indication of how understanding was taking place:

- The tenet Change, which captured experiences of how participants handled changing processes and circumstances, revealed enthusiasm amongst stakeholders on NCA being a new field. On a technical level, even though there were challenges with insufficient data, information and capacity, innovations, such as spatially explicit accounts, were perceived as exciting new developments. Findings have suggested that the change that NCA has brought about has been received positively, with interesting and innovative structures, networks and relationships emerging. Even the thinking amongst the broader stakeholders has been observed to be changing with new developments in other sectors, including the private sector. The change that NCA has brought about has generally been embraced in a positive manner.
- The tenet Empathy, which captured experiences where there was a genuine interest in listening and taking heed of other interacting actors' needs and views, was found to take place within the case context. Here, NCA has demonstrated outreach approaches where there were concerted efforts to actually physically go out to stakeholders and address and resolve challenges. The narrative of NCA is positive, as opposed to previous doom-and-gloom scenarios about the environment, and as was found with the tenet Change, new self-established coalitions were found to arise, where diverse and contrasting views were given airtime while still being part of the conversation/dialogue. It can be argued that the notion of empathy was present in NCA.

- Results for the tenet, Self-assess, which reflected on individual actions and processes, have demonstrated that the players within NCA were constantly reviewing the process to improve it technically and socially, so that NCA could ensure that emphasis started to shift towards policy and end-users' needs. There is an acknowledgment that NCA cannot continue to be pursued theoretically. Tangible case studies are needed that people on the ground can use. Findings have suggested that NCA has built a reputation for its ability to carry out self-assessments and reviews.
- Results for the tenet, Teamwork, which entailed the ability to work collaboratively and in a team, have found that within the case context, cross-functional committees, working groups, and other fora have been established at inter- and intra-levels within countries, across countries and regions. Scott *et al.* (2018) refer to team leadership, where leadership emerges through networks in teams. Carter, Dechurch, Braun and Contractor (2015) claim that the relationship between the follower and leader is dynamic, where anybody can assume a particular role, allowing relational leadership to emerge at the team level. It can be argued that because of the multidisciplinary nature of NCA, teamwork was found to be implicitly important, if not a vital component of the NCA process.
- The tenet, Explain, interpret and apply, captured experiences of contexts where there was an expanded process of understanding, including efforts to explain, interpret and implement further what had been communicated. It was found that within the case context there was a concerted effort to resolve the technical issues, particularly those related to the different ecosystem classification systems that have been used and implemented differently in certain parts of the world. Efforts to resolve these issues were found to be ongoing, with annual and more frequent needs-based meetings with technical experts convened and, as such, continue to be convened on a global, regional and national level. The need for standardisation of methodology has been addressed with the current review of the SEEA central framework and its subsidiary guidelines. The tenet has been found to be supported by social media and electronic newsletters which served to provide a better understanding of the developments within NCA.

- The tenet, Information Technology, where experiences were expressed through the use of social media platforms, NCA has been found to use advanced technology for its products and social media platforms, and other electronic means for the dissemination of information which have been found to produce positive outcomes.

Further tensions and interactions within the construct and between the tenets Conversation/Dialogue, Empathy, Explain, interpret and apply, Change, Information Technology, and Teamwork, together with further interactions across other constructs, have allowed the tenet Conversation/Dialogue to emerge strongly.

6.2.3.3 *Dominant tenet Conversation/Dialogue*

The tenet, Conversation/Dialogue, which highlighted experiences where communication took place through conversation and dialogue, interacted within the construct, Understanding, and therefore emerged as the dominant tenet.

Key highlights of the tenet:

- Ongoing communication through conversation, dialogue and discussion was important for the co-creation process and relationship building, which have yielded positive outcomes for the co-creation of leadership.
- Conversation and dialogue give the impression of an informal way of communication which can be manipulated to fill certain needs and agendas. It therefore needs to be managed to ensure that it does not lead to miscommunication and negative effects on co-creation and relationship building.

Interpretation

Cunliffe and Eriksen (2011) claim that dialogue and conversation that is part of communication, are key factors within relational leadership, which leads to further engagement, respect and improved understanding within relationships necessary for co-creation. Midgley and Lindhult (2019) claim that dialogue is important to stimulate innovation for the co-creation process. VanVactor (2012) speaks of

ongoing open dialogues that enhance alliances and improve understanding. Results have indicated that NCA has provided platforms for ongoing discussions, dialogue and conversations that have been convened, mostly on a formal basis, but also certain developments have been observed on an informal basis. Results have shown that although the discussions were difficult and challenging at times, they eventually led to positive outcomes where issues were resolved, understanding was improved and relationships were strengthened.

Osborn *et al.* (2014) argue that the power dynamics within relationships that interact as a result of dialogue allow leadership to emerge. Blom and Alvesson (2015) argue that conversation and dialogue are associated with a concept of 'relational leading', where opportunities to engage in conversation and dialogue are actively pursued, but that such interactions are not associated with leadership as they are too short to have any meaningful impact or relevance. The case context has highlighted how key actors who are smart, committed and cooperative people can lead a discussion for a period of time until their point of view is agreed upon, creating the impression that robust dialogue had occurred.

6.2.3.4 Construct: Consultation and inclusiveness

Prager (2016) argues that the process of co-creation has comparable features with the process of participation, but that the process of consultation, which includes for example information sharing, discussing and needs satisfaction, amongst other factors, may be limited and not comprehensive enough to include the needs and views of all stakeholders. Communication can therefore take place through consultation, which takes place through the physical context or the functional context. Alternatively, communication can occur organically, which may or may not result in a sense of inclusiveness.

Key highlights of the construct:

- There was a concerted effort to involve people and invite other stakeholders to meetings that have been physically convened at great expense, even if the diverse stakeholders were marginally relevant.

- The increase in the stakeholder database is an indication that the consultation is expanding to include other actors.
- Miscommunication or a lack of information and sufficient appraisal stakeholders' skills set, can lead to stakeholder fatigue, information overload and further disinterests.
- Full engagement throughout the process of NCA can lead to ownership, which is important for co-creation and relationship building.
- The different levels of communication and the tensions within relational dynamics of stakeholder consultation affect the way inclusivity was operationalized.

Interpretation

Findings have suggested that within the case context, there has been a concerted effort to involve people and invite other stakeholders to meetings that have been physically convened at great expense, even if their areas of work were marginally relevant. The case context has shown that what may have started off as a small exclusive group of people has now expanded to include a broader audience.

Results have also shown that including people and making everyone happy can be counterintuitive, as it can lead to inappropriate outcomes (See D1:159...P1).

D1:159 *"IPBES has handled that because what they did was to make everybody in the room happy which is great and its exactly what the millennium ecosystem assessment is but the product when you do that when you have hundreds of people coming in and you are trying to balance the sociological and anthropological with the ecologists and economists and the statisticians perspectives you end up with a very very weak team"* - D1: Participant 1.

Notwithstanding this finding, the case context has demonstrated overwhelming interests from different stakeholders initially attending and participating in stakeholder gatherings. This indicates that there is some level of cognitive recognition taking place, despite the difficult, complex and ambiguous subject matter. Adequate inclusiveness, on the other hand, may appear to be necessary for co-creation. Blom and Alvesson (2015) argue that inclusiveness is challenging for leadership, which on some level is responsible for the ongoing ambiguity and

confusion. The consequence of communication, or a lack thereof, in the pursuit of understanding can lead to confusion, which perpetuates naivety and ignorance. Alternatively, it can lead to learning and knowledge generation. The case context has showed that the lack of information or incorrect communication that was not specifically tailored to different stakeholders, that took into consideration their skills set and knowledge, has led to stakeholders becoming overwhelmed with information. Consequently, they became disinterested in the subject matter.

Ye *et al.* (2019) speak of transparency and the importance of team speech as a form of communication in what has been termed inclusive leadership. Findings have suggested that NCA cannot be done alone. It is actually teamwork where no one person or institution can drive this process forward. There needs to be full engagement and ownership of the responsibilities within the steps of NCA, which need to all fit together like a puzzle to complete the process. NCA has demonstrated its multidisciplinary approach, where national approaches have entailed engaging with a range of sectors including government, academia and research, businesses, environmental non-government organisations, community and indigenous organisations, technical specialists and natural resource management organisations.

The construct, Consultation and inclusiveness, interacted within the theme, Communication, with the constructs Command and control, Knowledge and the theory of change, and Understanding, including the interactions across other themes, constructs and tenets. The research therefore explored the tensions between the levels of communication in the consultation process and found that there were effects on how inclusivity was operationalized.

6.2.3.5 Construct: Command and control

Metz (2015) highlights the importance of clarifying the joint responsibilities and various functions of interconnected participants in the co-creation process. The case has illuminated how a context of command and control can result in communication taking place from the top down or from the bottom up.

Key highlights of the construct:

- Communication on NCA has been a top-down approach where international and bureaucratic organisations imposed NCA roles and responsibilities onto functional staff.
- New entrants into the field were also controlled through training and coaching.
- There were cases where conversation and dialogue of senior decision-makers on novel topics such as NCA were ‘voluntarily’ taken up by functional staff.
- The manner in which communication was executed, where authoritative or controlled communication was common, exerted its impact on the co-creation process in leadership.

Interpretation

Results have shown that NCA is often seen as a very top-down process, where communication on NCA has been informed by international organisations and bureaucratic systems. The lower levels within organisations are subsequently requested to do NCA as a result of top-down mandates, frameworks and responsibilities. Roles and responsibilities of NCA seem to have cascaded down to lower levels where available capacity was identified, and where capacity was limited, it was imposed on individual work and business plans. This has raised concerns within the case context as to how this would work in less hierarchical and flatter structures. Chen *et al.* (in Shamir *et al.*, 2007) argue that the form or manner of communication of those in leadership positions can influence or have an impact on other actors or followers in the process. Findings have suggested that NCA was developed by the geographical regional blocks of the world, thereafter assigned to the regional statistical commissions and then imposed on people (See D1:243...P1).

D1:243 “*The premise is that the EU developed it, UNSD commissioned it and people were forced to use it*” - D1: Participant 1.

New stakeholders entering the field were further trained and coached to use the information provided. Walumbwa *et al.* (2014) argue that management of

information flows is important to inform the decision-making process of leaders. The results disclosed have suggested that within the case context, leaders or people in positions of power were able to discuss NCA in a conversation style and it was then assimilated and taken up by lower levels within organisations. It can therefore be argued that people down the chain in hierarchical structures were listening to and absorbing the current conversations of the leaders.

The construct, Command and control, interacted within the theme with the construct, Knowledge and the theory of change, and the construct, Consultation and inclusiveness, as well as across the themes, constructs and tenets. Results have revealed the subtleties expressed by participants on the manner in which communication was executed where authoritative or controlled communication exerted its impact on the co-creation process in leadership.

6.2.3.6 Construct: Organic coordination

Uhl-Bien *et al.* (2007) explain that flexibility and what might be called auto-coordination, produce informal but interdependent structures and activities which emerge as a result of the nature of system dynamics and not from that which is imposed or controlled by authorities.

Key highlights of the construct:

- Informal communication in informal, semi-formal and/or open structured settings, has led to roles and responsibilities on NCA being taken up.
- Voluntary community of practice structures have emerged, which have brought many diverse stakeholders together.
- Electronic and social media have also been instrumental in furthering NCA application.
- Communication has taken place in a natural and flexible manner, which has facilitated the co-creation process.

Interpretation

Results highlight examples where people working in teams and in open plan set-ups were naturally chosen to assume NCA responsibilities. Results have

suggested that many informal interactions during lunch breaks, dinner times, social events and other informal settings like the corridors, or even outside venues, have resulted in positive outcomes in terms of strengthening communication and furthering the task at hand.

Durugbo and Pawar (2014) emphasise the need to consider how functions emerge during the co-creation process and how relationships within functions emerge. Results indicated that voluntary community of practice structures have emerged, which have brought many diverse stakeholders together. Electronic newsletters and social media platforms, such as WhatsApp groups and other chat platforms, have been very effective for NCA, where progress has been noted with different people in different sectors taking up and applying NCA.

The construct, Organic coordination, interacted within the theme with the construct, Knowledge and theory of change, and the construct, Understanding, as well as with other themes, constructs and tenets. The results have revealed examples where communication has taken place in a natural and flexible manner, subsequently exerting its impact on the co-creation process.

6.2.3.7 Construct: Language

Willig (in Flick, 2014) explains the importance of language and how it can strengthen, block or hamper processes.

Key highlights of the construct:

- Language was found to be a significant barrier, both orally and in written format.
- Communication issues related to language can lead to assumptions that can have a negative effect on understanding and subsequently on the co-creation and relational leadership process.

Interpretation

Results have shown that language was a significant barrier, both on a technical level as well as on a social and/or professional level. Stakeholders have been able

to communicate about the concept of ecosystem services, which was initially a difficult concept when it was first introduced. It was found that scientists were able to communicate effectively on ecosystems, and they then spoke to economists on the subject matter of services. Results have indicated that this communication has worked but it did very little to convince broader stakeholders, including the policy-makers.

Kempster and Parry (2011) highlight that language is a common factor in various contexts, underpinned by a number of assumptions, principles and practices. Results have shown that there were situations where NCA has been perceived as a completely different language and regarded as a totally different approach. The NCA fraternity has certainly made assumptions that NCA entails the same economic and financial thinking that has been packaged systematically and that takes into consideration ecosystems, goods and services.

Hopper *et al.* (2017) argue that the dominance of the English language in many processes reinforces Anglophone perspectives whilst excluding indigenous and local languages, and therefore more effort should be placed on translation practices. Language, particularly English, has emerged as one of the barriers to communicating on NCA. Most of the guidance materials, literature and websites are a challenge, particularly for non-English speaking countries.

The construct, Language, which underpinned all the interactions and engagements of the case context and particularly with interactions within the construct, Understanding, from this theme, exerted its influence, highlighting the role of language in building relationships and subsequently exposing its impact on the co-creation process.

6.2.3.8 Construct: Knowledge and theory of change

Prager (2016) argues that co-creation involves a collaborative process in which all stakeholders participate where their activities result in joint learning, actionable knowledge and practical outcomes.

Key highlights of the construct:

- Common goals and relevance of outputs and products influence knowledge sharing and joint learning.
- People working within the case context did not necessarily identify themselves with the notion of leadership or their ability to effect change.
- The construct provided insights on knowledge generation and learning but its effect on the theory of change was limited. However, examples of innovation were evident within the case context.

Interpretation

Results have expressed examples where the collaboration and joint learning were determined largely by the goals and the products being produced. In some cases, NCA has related the goals and purpose directly to stakeholders' own interests and own benefits based on knowledge sharing and raising awareness. This has translated into positive outcomes. Alvesson and Sveningsson (2003) argue that 'minimalistic leadership' is evident in knowledge creation and the wisdom generation process. Results have suggested that NCA proponents and those working in this field do not perceive their actions on NCA as leadership. Some participants have cited leadership as important, but the role of providing information, researching and knowledge generation is viewed differently. Eacott (2013) speaks of the knowledge claims of leadership, where knowledge is 'professionalised' as a problem-solving mechanism. Some results indicated that NCA, even though it was a technical subject matter, was spearheaded by leaders, end users, policies and governance, as opposed to being dominated by scientists. This appeared to be in contradiction with other findings, where technical experts have been known to dominate this environment sector. It may be a consequence of communication which has led to this finding. Alternatively, the NCA environment may be evolving and changing towards an emphasis on the policy applications and other end-user needs.

The construct, Knowledge and theory of change, interacted with the constructs Command and control, Organic coordination, Understanding, and Consultation and inclusiveness, within the theme, as well as interactions across other themes, constructs and tenets which provided insights on knowledge generation.

Communication can, however, promote learning and knowledge generation which translates eventually into wisdom (Chenail, 2012). It can therefore be argued that this is ultimately the change or impact that is generally sought.

6.2.3.9 Reflection

The sub-objective of the theme, Communication, was to investigate how communication between the various emerging relationships promoted or impeded the co-creation process to contribute to answering the overall research question of how leadership was co-created in the emergent case of NCA. The research has disclosed Conversation/dialogue as the important tenet to improve understanding, which has been found to be part of effective communication that is necessary for successful co-creation.

6.2.4 Theme: Partnerships and relationships

Interdependence and integration emerged as the dominant construct within the theme, Partnerships and relationships. The dominant and key tenet within the theme was the tenet Structures and systems (Table 6.6).

Table 6.6: Theme: Partnerships and relationships: constructs and tenets

Theme	Codes → Constructs	Emerging Tenets
Partnerships and relationships	Number: 4	Number:6
	Interdependence and integration (<i>dominant</i>)	Structures and systems (<i>dominant</i>) Interactions Skills and discipline Attitude Reflection Adaptation
	Organic partnerships and relationships	
	Politics – value judgements Partnerships and relationships fit for a purpose	

Key highlights of the theme:

- NCA is dependent on partnerships and the emerging relationships within.

- NCA was found to be naturally multidisciplinary in nature, requiring multiple actors, multiple institutions, and multiple information sources, including multilateral funding sources.
- Duration of partnerships and relationships were found to be relevant and their sustainability depended on funding in some cases and linkages with key processes and initiatives for others.
- Partnerships and relationships in some cases emerged in line with policies and financial management.
- The theme revealed some of the relational dynamics important for co-creation where quality of relationships, joint meaning making, communication and understanding were necessary variables that impacted on the co-creation process.

6.2.4.1 Theme Interpretation

The research explored the relational dynamics within the case context and captured experiences of how leadership relationships formed and evolved in NCA. Findings have demonstrated how the different role players interacted to produce either short or longer term relationships. Marchiondo *et al.* (2015) argue that leadership is a socially constructed process that is underpinned by the interpersonal interactions of relationships. Leader-member exchange theory (LMX) affirms the importance of partnerships in leadership (Katz & Kahn, in Uhl-Bien, 2006). It can be argued that relationships, which are partly a function of how partnerships emerged and vice versa, are formed as a result of a variety of variables. Kainz (2016) argues that relationships are critically important for co-creation where their quality and the way the relationships are formed impact on the co-creation process, affecting joint meaning-making, understanding, communication and the quality of the intended outcomes of co-creation, amongst others. The theme therefore allowed some of these key variables to manifest themselves.

Findings have suggested that NCA is dependent on partnerships and the emerging relationships within. NCA was found to be naturally multidisciplinary in nature, requiring multiple actors, multiple institutions, and multiple information

sources, including multilateral funding sources. Results indicated that in some instances the partnerships and relationships emerged in line with policies and financial management. There were indications that partnerships are formed first and thereafter relationships are established which determine the length and duration of the partnership. The sustainability of these partnerships is dependent of the linkages with other corporate responsibility movements, the sustainability movement and the climate change movement, all of which are very important for what NCA is trying to achieve. Osborn *et al.* (2014) emphasise the importance of context where various interpersonal dynamics emerge. Findings have suggested that context have played an important role for the way NCA is adopted and implemented. In South Africa, for example, strong linkages with the National Spatial Development Framework have been suggested, where partnerships and relationships have emerged based on the value creation of the NCA movement. In Latin America, for example, have prioritised the SEEA central framework, as they want to see the firm linkages and connections with the economic framework of the countries as opposed to a focus on ecosystem accounting, which is very sector-specific and where the information or the outputs of NCA are used and housed within the specific sector, limiting the formation of partnerships and the potential for burgeoning relationships across sectors.

Interactions and tensions within the theme, Partnerships and relationships, have catalysed the constructs within this theme. The construct, Partnerships and Relationships fit for a purpose, contributed to the construct, Interdependence and integration, whilst being complemented by the construct, Politics – value judgements. This construct in effect may contradict the construct Organic partnerships and relationships. Both the constructs, Partnerships and relationships fit for a purpose, and Organic partnerships and relationships, contributed to the construct Interdependence and integration, which was influenced or associated with the construct Politics – value judgements.

6.2.4.2 Dominant construct: Interdependence and integration

The relative strength of the constructs within the theme Partnerships and relationships indicated that the construct Interdependence and integration was

most dominant. The results have highlighted the insights on the interdependence and integration of emerging partnerships and relationships, taking into consideration the context within which functional roles, responsibilities and disciplines interact.

Key highlights of the construct:

- Some of the relationships that have emerged during the period of NCA development have lasted for more than 10 years and continue to evolve into other forms for different project applications.
- The multidisciplinary nature of NCA and working across institutions makes partnerships and relationships difficult.
- NCA, however, was designed to be multidisciplinary, which involved close collaboration between the disciplines, economics, ecology, accounting and expertise in geo-spatial information collection.
- The opportunities for integration at various levels should be explored and actioned where NCA has shown contextual relevance between different spheres of government and across sectors.
- Numerous platforms at multiple levels were available for emerging social interactions, partnerships and relationships. Despite the possibility of tension between various disciplines because of the involvement of multidisciplinary experts, the attitude of actors within the case context was positive.
- Because of its relevance at multi-levels, across sectors and across spheres of government, there existed a practice to constantly monitor, assess impact and refine. Reflection was a practice within NCA which indicated that it could emerge as a monitoring tool, integrated reporting tool or as an information management system.
- Sustainability of partnerships and relationships is dependent upon the monitoring and evaluation of outcomes and consensus among stakeholders.
- NCA was found to be expressed as is a dynamic environment, an adaptive space, where stakeholders have expressed a willingness to integrate and jointly succeed.

- NCA was perceived as having the potential to facilitate the transformative agenda which aims to take a more integrated approach to policies and information.

Interpretation

Van Lange and Balliet (2015) explain the detailed account of the interdependence theory, where various factors that support the social interaction of individuals allow partners and relationships to emerge through adaptability, transformation, and integration. The case context has revealed that some of the relationships that have emerged during the period of NCA development have lasted for more than 10 years and continue to evolve into other forms for different project applications. It was also found that because of the multidisciplinary nature of NCA, and subsequently working across institutions, has been difficult. Findings based on the responses of participants indicated that NCA has the potential to facilitate the transformative agenda which aims to take a more integrated approach to policies and information.

Uhl-Bien *et al.* (2007) argue that interdependency amongst agents, structures, systems, skills, networks and relationships enable adaptive leadership. NCA was found to have value to other spheres of government where authoritative institutions, such as National Ministries of Finance and Development Planning, offer information and advice to guide the decision-making taking place at national and sub-national government levels. Kurucz *et al.* (2017) highlight the different dimensions of integration, which include international, sectoral and scientific, and which further involve an ongoing process of multi-stakeholder evaluation. Results have suggested that the relationships and partnerships within NCA have been assessed on a periodic basis, with the presumption that those partnerships and relationships should end unless there was consensus amongst all actors that such partnerships should last as they would continue to deliver benefits.

The emerging tenets interacted and created tension within the construct. Results for the tenet, Interactions, demonstrated the social interactions of individuals, their relationships and partnerships. Results have shown that there were a lot of social interactions where the networks, people who knew people, ongoing training and

capacity building, even addressing personal politics, took place right from the very beginning to get everyone on board. Numerous platforms for ongoing interaction have been observed in the case context. Interactions have been found to take place at multiple levels within the case context. This not only implies that the interactions have been multiple within organisations, but the interactions were spread across organisations, nationally, regionally and internationally. The tenet, Skills and discipline, highlighted how the functional roles, responsibilities and disciplines interacted. Findings have strengthened the notion that NCA is designed to be multidisciplinary. As a minimum requirement, NCA has involved close collaboration between the disciplines, economics, ecology, accounting and expertise in geo-spatial information collection.

There have been suggestions that NCA should be developed into an academic programme at universities. Findings have also revealed that the softer skills of policy development and, more so, policy mainstreaming, which is often unrecognised, are needed. Results have shown that the development of social scientists that can adequately make the links and interconnections between the various elements of NCA would also go a long way to enhancing NCA.

Results for the tenet, Reflection, which highlighted the aspects of self-reflection, monitoring and evaluation, found that NCA can also be described as a monitoring tool for many processes, including the sustainable development goals, financial performance monitoring and stratified monitoring within spheres of government to address the data information gaps that exist which ultimately feeds into the big data programme of work. There has been a suggestion that NCA could evolve into a perennial information system (See D2:72...P2).

D2:72 *“My approach is the approach of construction of perennial information systems, I have made inception studies in several countries, of Indian ocean region, and always with the perspective of putting in place the perennial information system which can be used by policy people, business people” - D2: Participant 2.*

Results for the tenet Attitude, which captured the social behaviour of key actors, found that, generally, the attitude of NCA stakeholders were positive, despite the

presence of discipline experts who very often expressed the need to reinforce their discipline specialisation.

The tenet Adaptation, which highlighted the ability of key actors to adapt to changing contexts, found that NCA is a dynamic environment where stakeholders have expressed a willingness to integrate and jointly succeed. It was also found that many countries are still pilot-testing NCA, with very few countries having institutionalised the NCA process. Findings have suggested that NCA would, however, bring about transformative change that is needed in society today. The emerging tenets within the construct catalysed the tenet Structures and systems.

6.2.4.3 Dominant Tenet: Structures and systems

Tensions arising within the construct, Interdependence and integration, between the tenets “Structures and systems”, “Interactions”, “Skills and discipline”, “Reflection”, “Attitude”, and the tenet “Adaptation”, together with further interactions across other constructs, have allowed the tenet “Structures and systems” to emerge as the key tenet within the construct.

Key highlights of the tenet:

- Adaptive leadership was found to surface as there were examples where NCA was implemented and institutionalised as a reporting system.
- NCA was found to have a lot more durability in some parts of the world.
- Findings have suggested that the level of integration, although significant where statistical offices have taken ownership of NCA, have found that the level of integration was not adequate.
- The contextual influences of the tenet “Structures and systems” interacting with the identified tenets were found to move stakeholders towards better buy-in on NCA, or in other situations it was found to move stakeholders away from it.

Interpretation

Czarnota (2018) argues that the interdependencies between the abilities and competence of actors, and structures, shape the co-creation process. Results for

the tenet “Structures and systems”, which highlighted the emergence of adaptive leadership, found that NCA is seen as an integrated reporting system that encompasses information to guide decision-making on various levels. It was found that there was a lot more durability of NCA in certain parts of the world where systems and structures have been put in place for longer term aspirations. It was also found that existing structures limited decision-making that needs to take place for NCA. However, findings have suggested that NCA, through the SEEA, is firmly rooted in the different countries’ statistical offices, which have allowed for the mainstreaming of NCA into national governance and legislation. It was found that statistical offices have taken ownership of NCA. In South Africa, for example, Statistics South Africa, through the Statistician-General, has come on board with NCA, which is a significant development. It was found that there was a need for consistency of structures to further NCA, but concerns that NCA is being driven as a parallel exercise to the development of the national accounts. This implied that far too little effort was made to integrate NCA into other similar processes that can generate information for policy and decision-making.

Results have indicated that in some countries, for example the United Kingdom and Scotland, NCA has been elevated in importance in the government and it has been found that once the government showed interest and it was then disseminated from senior decision makers to functional levels of government, civil society also started showing an interest . It was also found that people have been organising themselves as coalitions and these structures were creating communities which were taking ownership of NCA processes. Results have further indicated that Structures and systems can move stakeholders towards better buy-in on NCA or it can move stakeholders away from it.

6.2.4.4 Construct: Partnerships and relationships fit for a purpose

The research captured experiences where partnerships and relationships were formed for a specific purpose, facilitated by various factors, such as financial or human resource needs or the fulfilment of self-ambitions. Afeissa (2008) argues that strategic causal partnerships and alliances are feasible through engagement in a context of collaboration and cooperative action.

Key highlights of the construct:

- Findings have demonstrated that NCA arose with a small group of people within the United Nation Agencies conceptualizing NCA.
- Many of the partnerships that formed were with organisations that had mandates to form partnerships and they already had their own living programmes, indicating that the process of partnership and relationship building that was determined very much by their respective roles and responsibilities, was a managed process.
- The engagement of identified role players involved work shopping and participation in convened meetings which were also managed through donor-funded support. Such partnerships lasted for about for about three (3) years until the funding ran out.
- Partnerships that emerged from smaller groups of people who knew each other and worked well together, lasted longer than project deliverable timelines.
- Some relationships within the case context go back to university level, which have been sustained in the professional environment.
- Many of the roles within NCA are linking roles, linking the different stakeholders and communities, facilitating information sharing and providing motivation and assistance to scale up projects.

Interpretation

Findings have demonstrated that NCA arose with a small group of people within the United Nation Agencies, conceptualizing NCA. Thereafter there was this slow interaction, sensitizing the top management. However, it did not get a lot of traction in the early days until the top management started to engage with the concept. In addition, many of the partnerships that formed were with organisations that already had their own programmes running. The World Bank had the WAVES Program, UNSD the SEEA, IUCN worked a lot on NCA as part of their business and biodiversity programme, and then there was the Natural Capital Coalition who has been involved in NCA on the business side and UNDP with their BioFin Project. The Big Data movement also had a lot going on at the time and linkages

with this movement were necessary. The engagement of identified role players involved work shopping and participation in convened meetings, which were paid for by the host organisations. Specific people were paid to attend meetings and engage with the concept. NCA has been found to be still very much donor funded and once the project was underway and the contracts were in place, the partnerships lasted for about three years until the funding ran out (See D44...P20).

D44:29 – *“Donor money has a lot to do with it. In Uganda they did a biodiversity account or ecosystem account that they published last year, but I don’t think that was a priority for the Ugandan government at all but you know they were happy to accept the results because the donor was happy to pay for it to be done”* - D44: Participant 20.

In other instances, findings have suggested that the partnerships that emerged from smaller groups of people who knew each other and worked well together, lasted longer than project deliverable timelines. It was found that for any one gathering, there would always be one group of the same people attending the meeting, which was good for building relationships. On the other hand, findings have suggested that some relationships within the case context go back to university level, which have been sustained in the professional environment. It was also found that very good relationships were formed in this field as people did not feel threatened, even though they were competing for work. Results have indicated that NCA partnerships and relationships are determined by their specific roles and responsibilities. Each stakeholder plays a different role; where statistics agencies assist with collecting data, universities help with analysing data and the government ministries assist with data and other policy processes. Many of the roles within NCA are linking roles, linking the different stakeholders and communities, facilitating information sharing and providing motivation and assistance to scale up projects.

It was found that within the case context, organisations that have the necessary mandate and policy provisions and those that have large living programmes were active in convening the different stakeholders, and in this way, the partnerships and relationships were subsequently formed. The findings also suggested that to

some extent an element of control of how these partnerships and relationships developed and evolved was present.

6.2.4.5 Construct: Politics - Value Judgements

Uhl-Bien *et al.* (2007) argue that leaders need to be empowered to safeguard multifaceted adaptive systems from external politics and top-down influences. Bordt (2017) highlights that research agendas, even research approaches, contain value judgments that interact with values and politics.

Key highlights of the construct:

- Given NCA's multidisciplinary nature which has been confirmed repeatedly by the results of the research coordination challenges were found to be inevitable, as were the effects of external and internal politics.
- Global and national politics were found to be present that influenced that the application and further implementation of NCA.
- At an institutional and organisational level, mandates and political sensitivities regarding roles and responsibilities, affected the process of NCA.
- At a technical level, political nuances were present that influenced technical decisions and human resources.
- At the risk of undermining the value of continuity, long-standing champions and advocates of NCA were found to limit the advancement of NCA.
- Partnerships were challenged due to power dynamics, personal value judgements, a silo mentality and bureaucracy.

Interpretation

Findings have highlighted the role of politics, power and bureaucracy in partnerships and relationships. It can be argued that NCA is a worldwide concept that is multidisciplinary in nature, requiring collaboration and coordination amongst a range of institutions and organisations, people and cultures working together at multiple levels. It can also be argued that coordination challenges were inevitable, as were the effects of external and internal politics. It was found that NCA, in the

early days of its existence, was actually abandoned for a few years until it was taken up again through a different technical pathway (See D45:47...P21).

D45:47 *"If you are in the US for example, all of this is seen very much in the Democrat camp and not in the Republican camp, and it becomes a political issue and it shouldn't be a political issue, it should be across party"* - D45: Participant 21.

In Britain, the impact of Britain's exit from the European Union would mean that agricultural and environmental policy would be affected and subsequently the use of NCA to guide this policy would be in jeopardy. Participants of the research have cited the example of the land movement in Scotland of taking land away from small land owners and putting it into community control where resistance and push-back occurred, which subsequently affected NCA delivering broader scale environmental benefits.

At an institutional and organisational level, findings have suggested that mandates and political sensitivities regarding roles and responsibilities affected the process of NCA. It was found that when functioning in hierarchical systems, it was not possible to convince the top management about NCA. Findings have also suggested that outputs of NCA, that is, the accounts themselves, can provide politically sensitive information. It was found that Governments can support the NCA process, including even commission the production of accounts, but if the findings have the potential for controversy which affects the political manifesto in some way, then accounts can be rejected and not taken further to publication (See D44:82...P20).

D44:82 *"As I mentioned, this other layer is that this is political information, just as much as it can be to someone's benefit to know something it can be to someone else's detriment. And that can be hard as well"* - D44: Participant 20.

Therefore, even on a technical level, politics have been observed. For example, the use of certain classification systems as opposed to others available by the broader community of NCA practitioners was promoted and advanced based on politics, power and the resources available. Certain organisations have had the power and resources to promote their own products. This causes challenges for

implementers who are unaware of the premise behind the available options. Within the case context, it was found that the hiring of people and who gets chosen to work within the system is controlled by bureaucratic organisations. In the production of guidance materials, authors were carefully selected based on personal value judgements. These authors were required to comply with certain technical requirements, including what was prioritised in the publications. The case context has also shown that often, with the same key stakeholders and actors involved in the process, there was a tendency for certain viewpoints to get embedded into the system, which became an inherent flaw in the process.

Findings have suggested that people themselves in the production chain for NCA were the barriers to the advancement of NCA due to competing roles and responsibilities, a lack of interest, apathy, and the reluctance to share knowledge, information and data. The fear of roles and responsibilities changing due to NCA, job security and competition for work, were also found to occur. Issues between disciplines arose where economists and scientists, including environmental economists, were in conflict over work territories. This was often exacerbated by the systems and structures in place, where institutions and different organisations were pulling in different directions, pursuing their own agenda. Governance processes on how to collect data, provide access and share data, were also found to be problematic. In some instances organisations, and even at the country level, were willing to collaborate on and engage in NCA, but funding and budgetary allocations were prioritised for other activities. It can therefore be argued that partnerships were challenged due to power dynamics, personal value judgements, a silo mentality and bureaucracy.

6.2.4.6 Construct: Organic partnerships and relationships

Partnerships and relationships can evolve in an organic, natural way as a result of expertise and interests exploring common or divergent interests. Osborn *et.al.* (2014) argue that leadership can be anticipated to develop naturally from the social engagements and relations of individuals, and/or the dynamics of group interactions. Durugbo and Pawar (2014) explain that as part of mitigation approaches, the use of different sets of participants, multiple working groups and

different design environments are needed for the co-creation process. Partnerships and relationships can therefore arise seamlessly without being imposed by authorities, which may or may not have the potential to be sustained.

Key highlights of the construct:

- Longer standing relationships have been underpinned by personal, professional and intellectual aspirations.
- Long-standing relationships that were credible and had a reputation were important for the formation of new partnerships and relationships.
- Results have indicated that ad hoc acquaintances with people who want to collaborate on NCA were short-lived, with people moving in and out of phases, resulting in relationships lasting for at least the life cycle of the projects.
- Such partnerships that formed as a result of time-bound projects were found to have value in evolving into other kinds of partnerships and relationships for different project applications.
- Results have demonstrated that the institutional and administrative set-up had an impact on whether or not organic structures and relationships could form where devolvement of powers to other spheres of government as part of co-operative governance had both positive and negative effects.
- Other types of structures, such as networks, discussion hubs and coalitions of the willing, also occurred, which were influenced by a number of factors subsequently affecting their quality and duration.

Interpretation

The results have indicated the ability of partnerships and relationships within the case context to emerge as a result of professional reputation, family connections and friendship. Findings have suggested that stakeholders have personally, professionally and intellectually aspired to be part of the NCA movement. There is evidence that the stakeholders have actively sought reasons and ways to meaningfully contribute to the NCA process. It can be argued that this strong drive to be part of the process has led to relationships being formed that have lasted longer than expected.

Findings have also suggested that professional organisations that have been steadfast in their participation in NCA have produced long-standing partnerships, such as the World Bank WAVES program and the United Nations Environment Program. Flexibility, scientific and technical capability has been instrumental in ensuring their ongoing participation and involvement in NCA processes. Such partnerships have been found to be fundamental to the formation of new partnerships and relationships. Structures and networks were formed through a combination of established work partnerships and networks. These were based on reputation, and regional balancing ensuring that representivity of different groups was met. Results indicated that ad hoc acquaintances with people who want to collaborate on NCA have been short-lived, with people moving in and out of phases, resulting in relationships lasting for at least the life cycle of the projects. The results also suggested that the partnerships and relationships that have emerged as a result of projects do not necessarily die off or slow down after the project has finished, even though any further collaboration may depend on the funding available. However it was also found that these relationships tend to evolve into other kinds of relationships for different project applications. There tends to be no continuity, but the process is nevertheless ongoing. There were suggestions that because NCA was a new field, and a new approach to doing accounting, the field of work required the formation of new partnerships and relationships.

Results indicated that interested stakeholders took their own lead in terms of the level of their participation. However, it was found that there was a need for certainty in the process, where a coalition of institutes was necessary to spearhead the NCA process, defining roles and responsibilities upfront. Results have demonstrated that the institutional and administrative set-up had an impact on whether or not organic structures and relationships could form. It was found that IPBES has been instrumental in coordinating stakeholders from multiple organisations across the world. The IUCN has also been crucial in coordinating civil society that has led to other discussion platforms and networks being formed. In some countries, similar to South Africa, devolvement of powers to other spheres of government as part of co-operative governance has given flexibility to

organisations to self-organise. In the UK, however, it was found that this devolvement of powers to other territories has been problematic in terms of the quality and strength of the relationships between the territories. In South Africa, cooperative governance has led to some provinces establishing strong networks, which have given them an advantage for the implementation of NCA, whilst other provinces have lagged behind.

The case context has been found to catalyse the formation of other types of structures such as networks, discussion hubs and coalitions of the willing. Most of these structures were unfunded and were active in people's after-hours, leisure time and on weekends. Such structures have led to commitment and stronger partnerships and relationships. The natural formation of partnerships and relationships within NCA was therefore influenced by a number of factors which subsequently affected their quality and duration.

6.2.4.7 Reflection


The sub-objective of the theme, Partnerships and relationships, was to investigate the quality or types of emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA, to contribute to answering the overall research question of how leadership was co-created in the emergent case of NCA. The research showed the complex nature of partnership and relationship formation, where context played a significant role in determining the formation, quality and duration of these emerging partnerships and relationships.

The research therefore provided insights into the effects of structures and systems that influenced the formation of partnerships and relationships, confirming that context is a key element of co-creation within relational leadership.

6.2.5 Theme: Emotion

Willingness to participate emerged as the dominant construct within the theme Emotion. The dominant and key tenet within the theme was the tenet Optimistic (Table 6.7).

Table 6.7: Theme: Emotion: constructs and tenets

Theme	Codes→Constructs	Emerging Tenets
Emotion 	Number: 6	Number: 7
	Willingness to participate (<i>dominant</i>)	Optimistic (<i>dominant</i>) Sharing and learning Transparent Competence Inclusive Enthusiasm Reservations
	Competition and rivalry	
	Trust: legitimacy and consensus building	
	Subjective: personal views	
	Objective and orderly	
	Subjective: encouragement	

Key highlights of the theme:

- Fear was one emotion that was expressed by stakeholders within the case on the part of the users or potential users which underpinned decision-making and served as one of the emotions to make the case for NCA.
- Other emotions, such as inspiration, passion, enthusiasm, and a willingness to participate were present, which provided opportunities to further the case of NCA from the producer/technical or proponent side of NCA.
- NCA is a champion-driven, champion-led process where trust, authenticity and consensus building were found to be relevant elements for consideration when addressing the role of emotion in the co-creation processes.
- The emerging tenets of “Optimistic”, “Sharing and learning”, “Transparent”, “Competence”, “Inclusive”, “Enthusiasm”, and “Reservations were key elements that interacted to reveal the dominant tenet “Optimistic” underpinning the role of emotion in the co-creation process of relational leadership.

6.2.5.1 Theme Interpretation

Ashkanasy *et al.* (2000) argue that emotion plays a vital role in human interactions and dynamics. Results have revealed that emotions were present in the decisions taken by many of the stakeholders within the case context. For example, emotions

related to risk were identified as common emotions expressed by the stakeholders. Fear was one such emotion, where stakeholders expressed fear that their businesses were not profitable, the fear of their reputation being damaged or the fear of not being compliant with policies and regulations. Fear was therefore one of the drivers of decision-making and it therefore served as one of the emotions to make the case for NCA, where NCA could assist in quantifying the risk that people felt through fear.

Ye *et al.* (2019) argue that within relational leadership, inclusive leadership, which is a form of relational leadership, demonstrates the importance of emotion and culture for the formation of intense interpersonal relationships in relation-oriented societies. Findings have also suggested that other emotions, such as inspiration, passion and enthusiasm and a “genuine willingness to participate”, were present, which provided opportunities to further the case of NCA. Stakeholders who were passionate about their work were easy to work with and facilitated the NCA process. Nicholson and Kurucz (2017) emphasise that emotion is an important part of the co-creation and joint meaning-making process which enables decision-making.

It can be argued that emotions might be necessary and beneficial and was present in many forms within the case context; however, results have shown that there was need for something more than emotion. There is a need for high-level buy-in from the decision-maker. Results have suggested that NCA accounts can provide the best available information, but if the senior decision-maker does not appreciate evidence-based decision-making, there will be no progress on NCA.

Social interactions were therefore at the heart of the theme Emotion, with various interactions and tensions occurring between and within the identified emerging constructs. The construct “Subjective: personal views”, created tension with the construct “Objective and orderly”, which also contradicted the construct “Subjective: encouragement”. The construct “Competition and rivalry” was associated with the construct “Subjective: personal views”, which together catalysed the construct “Willingness to participate”.

The construct Trust: legitimacy and consensus building, was operative in both the theme Value creation, and the theme Emotion, creating further tension within the construct Willingness to participate. The construct: Trust: legitimacy and consensus building, therefore overlapped with the theme Value creation. The emerging tenets of “Optimistic”, “Sharing and learning”, “Transparent”, “Competence”, “Inclusive”, “Enthusiasm”, and “Reservations” interacted to reveal the dominant tenet “Optimistic” underpinning the role of emotion in the co-creation process of relational leadership.

Kurucz *et al.* (2017) argue that interactions and relationships based on trust are necessary in relational leadership processes. Findings have suggested that within the case context, the SEEA was devised as the global statistical standard to encourage long-term long-lasting relationships. Bergman *et al.* (2012) highlight how various levels of trust and consensus building reduce socio-emotional conflict, enhancing shared leadership. The findings have suggested that there is a big opportunity to harness people’s emotions on climate change, which is a concept that people are aware of and have been engaging with for some time now. It was therefore seen as an opportune time to engage people on NCA for its incorporation into accounting systems. The certainty and legitimacy of the climate process was found to be a catalyst for NCA.

Findings have also revealed that NCA is a champion-driven champion-led process where trust needs to be built and nurtured. It can be argued that trust, authenticity and consensus building, amongst other factors, were found to be relevant elements for consideration when addressing the role of emotion in the co-creation processes.

The theme, Emotion, interacted further with the emerging constructs, creating tension within the theme.

6.2.5.2 Dominant Construct: Willingness to participate

Tensions and interactions within the theme, Emotion, allowed the construct Willingness to participate to emerge as the most dominant construct within this

theme. Kainz (2016) emphasises the importance of stakeholders to nurture a willingness to participate, regardless of any preconceived notions or reservations of how historically issues may have been interpreted.

Key highlights of the construct:

- The success of NCA to date has been the high level of willingness of identified stakeholders to participate and contribute to the different requirements at the various stages of the NCA process.
- The ability and competence of stakeholders to participate in NCA processes depended on the available skills and the finances within countries and organisations to develop the necessary skills.
- Most stakeholders felt that the process was transparent and inclusive.
- It was found that passion, eagerness and willingness to participate, proactive action, personal convictions and goodwill were amongst the drivers behind the enthusiasm expressed by stakeholders.
- Reservations, reluctance, concerns, a lack of motivation and interests, a lack of appreciation, time and other priorities by certain actors were also expressed within the case context. Follow-up and commitment by broader stakeholders were a challenge.
- People, personalities, incorrect identification of people consulted, the presence of sceptics and the fear of change were also found to be contributory factors to the willingness of participants to engage with NCA.

Interpretation

Results have demonstrated that the success of NCA to date has been the high level of willingness of identified stakeholders to participate and contribute to the different requirements at the various stages of the NCA process. It was found that stakeholders provided their expertise and assistance willingly and voluntarily and made the extra effort to facilitate, where possible, the data provisions of NCA. In some instances it was found that the provision of expertise and assistance was without any level of monetary compensation.

The willingness to participate was found to interact with many emerging tenets within the construct. The nuances and subtleties of the actors' ability to share and learn, and their capabilities and competence were captured in the research. Results have indicated that, generally, key stakeholders were very willing to share data and eager to learn all the different areas of work within the case context. The results have also showed that there were cases where data sharing was a challenge, but other factors, such as being short-staffed, a lack of manpower, mandates and data sharing policies, affected the stakeholder's ability to share. However, despite these factors, stakeholders were still eager, interested and participated in meetings when invited to do so.

Findings have suggested that the ability and competence of stakeholders to participate in NCA processes depended on the available skills and the finances within countries and organisations to develop the necessary skills. NCA was found to harness and was open to existing skills, which resulted in stakeholders contributing whatever competencies and skills that they originally had. It was found that, based on the extensive consultation processes that ensued within the case context, most stakeholders felt that the process was transparent and inclusive. It was found that greater clarity on the audience, users, and the priority uses of NCA was necessary, as was the need for agreement on the broader vision, objectives and priorities for NCA. Results have further indicated that NCA was successful as it was to some extent seen as a bottom-up, inclusive process.

Findings have demonstrated the overwhelming display of enthusiasm amongst stakeholders within the NCA process. It was found that passion, eagerness and willingness to participate, proactive action, personal convictions and goodwill were amongst the drivers behind the enthusiasm expressed by stakeholders. The case has shown that so-called believers that NCA could work were present. Findings have suggested that as with any process, strong advocates who believe that everything will eventually be alright, are needed to achieve success. However, whilst there were strong advocates for NCA, reservations and concerns by certain actors were also expressed within the case context. Results have shown that follow-up and commitment by broader stakeholders were a challenge. The broader community outside the field also provided resistance to the process. Funding,

staffing, a lack of motivation and interests, a lack of appreciation, time and other priorities, were amongst the factors underlying reservations expressed by certain stakeholders. People, personalities, incorrect identification of people consulted, the presence of sceptics and the fear of change were also found to be contributory factors to the willingness of participants to engage with NCA.

The construct Willingness to participate, engaged with these tenets that emerged within the construct, demonstrating its impact on the willingness of stakeholders and key actors to participate in the co-creation process.

6.2.5.3 Dominant Tenet: Optimistic

Tensions arising within the construct, Willingness to participate, between the tenets Sharing and learning, Transparent, Competence, Inclusive, Enthusiasm, and the tenet Reservations, together with further interactions across other constructs, have allowed the tenet Optimistic to emerge as the key tenet within the construct.

Key highlights of the tenet:

- The NCA fraternity has been driven by discipline experts and specialists who have been open to bringing in stakeholders from other sectors, including civil society.
- An optimistic approach despite the various interacting factors and tensions within a highly complex and multidisciplinary, multi-level case context of NCA, was found to be a significant driver of the co-creation process.
- Despite the difficulties in coordinating multidisciplinary stakeholders, NCA has been able to engage stakeholders successfully and effectively with all the processes aligning in favour of NCA.
- Findings have suggested that within the case context, the pursuit of a standardised methodology for NCA was for empowering a broader range of stakeholders to apply NCA so that NCA would generate easily comparable and understandable information.

Interpretation

Results have disclosed that an optimistic approach, amongst a variety of factors, has determined how co-creation was taking place within the case context. Czarnota (2018) argues that engaging with personalities that have a positive outlook is important for the co-creation process. Results have indicated that more than 80 countries are now implementing NCA and the numbers are growing fast. Steen and Tuurnas (in Brandsen, Verschuere & Steen, 2018:08) claim that professionals who engage with other stakeholders in co-production processes must have an open and positive outlook. Results have shown that the NCA fraternity, which has been driven by experts in the field, has been very open to bringing in stakeholders from other sectors, including civil society. Findings have suggested that within the case context, the pursuit of a standardised methodology for NCA was for empowering a broader range of stakeholders to apply NCA so that NCA would generate easily comparable and understandable information. Ketonen-Oksi and Valkokari (2019) argue that the enthusiasm and willingness of participants can be affected negatively if the consultation and facilitation process is not done correctly. Results have shown that despite the difficulties in coordinating multidisciplinary stakeholders, NCA has been able to engage stakeholders successfully and effectively with all the processes aligning in favour of NCA (See D48:22...P24).

D48:22 *"You can have the same policy objectives, you can have the same policy instrument, and it goes nowhere, and for whatever reason the political planets all align, and suddenly an idea which has been around for a number of years, gets traction"* - D48: Participant 24.

Findings have shown that despite differences observed within the case context, all the actors have engaged with each other with the frame of mind that everyone will be moving forward. It was also found that previous sceptics and so-called "deniers" of the NCA process are now wanting to engage with NCA and offering ways to contribute to the process.

Despite the various interacting factors and tensions within a highly complex and multidisciplinary, multi-level case context of NCA, an optimistic approach was found to be a significant driver of the co-creation process.

6.2.5.4 Construct: Objective and orderly

Findings were based on the nuances and subtleties of emotions that were expressed by stakeholders within an objective and/or professional context. The context may have been inflexible, rigid and orderly, which may have led to emotions such as disillusionment, discouragement and failure, amongst others. Ashkanasy *et al.* (2000) argue that context is significant for the part it plays in influencing how individuals see and respond to issues.

Key highlights of the construct:

- Context exerted its influence in framing the ambitions, reactions and responses of stakeholders.
- The process of consultation and participation was dependent on people from multidisciplinary backgrounds who were not always willing to collaborate, resulting in frustration, stress and disillusionment with the process of NCA.

Not all stakeholders were convinced about the merits of NCA and subsequently offered resistance to the process, which led to further delays and a lack of action.

Results have shown that context has been a significant factor in influencing how people react to such circumstances. It was found that big ambitions, such as the United Kingdom's 25 year plan, which challenged people to be the "first generation to leave the environment in a better place than the one it inherited", motivated key stakeholders to prevent any further loss, maintain what they had and further improve on it. This was considered a big ambition but one that was embraced by the people.

Interpretation

Findings have also demonstrated that NCA, because of its heavy reliance on people from various disciplines collaborating and largely determined by their willingness to participate and share information and data, was found to result in frustration, stress and disillusionment with the process (See D29:44...P6).

D29:44 *"I had to leave, I was the project manager, well paid, but I am now leaving this because I am becoming frustrated and lots of stress so I decided it's best I be a freelancer and not depend on people so I had to leave that job"*
- D29: Participant 6.

Uhl-Bien *et al.* (2007) further highlight that in interdependent situations, the actions and behaviour of one agent are dependent on or limited by those of another. Findings have revealed that there were people in certain organisations who could unnecessarily employ delay tactics which led to a lack of action and progress of other actors (See D1:12...P1).

D1:12 *"The office of management and budget for proposed regulations felt their hands were tied. I spoke to them repeatedly, oh they would say there could be this effect and this effect and this effect and they would go through the literature and it was just not strong enough to have weight and they couldn't include certain things in cost benefit analysis"* - D1: Participant 1.

The construct, Objective and orderly, captured the emotions expressed by stakeholders in contexts that were either objective, professional, inflexible, rigid and/or orderly. The construct interacted within the theme with the constructs, Subjective: encouragement, Competition and rivalry, and the construct Willingness to participate.

6.2.5.5 Construct: Subjective: Personal Views

Findings were based on the nuances and subtleties of emotions that were expressed by stakeholders within a subjective context where personal views, thoughts and sentiments were allowed to emerge through listening, conversation or discussion and collaboration. Afeissa (2008) points out that Norton's views allow for personal subjectivity amongst various intellectual discussions.

Key highlights of the construct:

- Most stakeholders were able to express their personal views during consultation processes, albeit to a limited extent.
- Strong personalities and egos showed themselves during consultation processes.

- Occasions existed when personal views were misjudged and were incorrectly captured in the process.

Interpretation

Results have implied that the stakeholder consultation processes were often challenging, because certain stakeholders with egos and strong personalities were known to raise their own points of view, repeatedly delaying discussions when the collective or quorum had already reached consensus. Most stakeholders were able to express their personal views during consultation processes, albeit to a limited extent. However, some results have indicated that there also existed occasions where personal viewpoints and agendas were misjudged and incorrectly taken into consideration (See D64:47...Sr12).

D64:47 “*Personal issues and views are usually misinterpreted as professional, cultural or disciplinary difference*” - D64: Survey respondent 12.

The construct therefore captured insights on the experiences of actors in expressing their personal views on issues and processes.

The construct “Subjective: personal views”, interacted within the theme with the constructs “Subjective: encouragement”, “Competition and Rivalry”, and the construct “Willingness to participate”.

6.2.5.6 Construct: Subjective: Encouragement

Findings were based on the nuances and subtleties of emotions that were expressed by stakeholders within a subjective context of encouragement as a result of delegation, motivation, and appreciation.

Key highlights of the construct:

- NCA is still considered a niche where limited expertise exists and hence it was easier to motivate and inspire a small group of experts.
- With the broadening scope of work, efforts to incentivise constructive challenge are necessary.
- Overall good sense of encouragement amongst all stakeholders and actors.

Interpretation

Results have shown that people were delegated to carry out NCA work because there was so much work available and so few experts available. People voluntarily responded to demand. Hickey (2018) argues that appreciation or mutual benefit is essential where everyone feels that they are contributing to a greater good and getting something back from jointly working on any project. Results have suggested that because NCA is still considered a niche, it was found to be easier to inspire and motivate people to actually make a difference in the world. It was also found that NCA, because of its multidisciplinary nature, should find an innovative way to incentivise constructive challenge. It can be argued that, generally, there was a good sense of encouragement amongst all stakeholders and actors. The construct interacted actively within the theme with the constructs Objective and orderly, Subjective: personal views, Competition and rivalry, and the construct Willingness to participate.

6.2.5.7 Construct: Competition and rivalry

Findings were based on nuances of competitive behaviour and other subtleties that relate to the social interactions between actors, where emotions of competitive behaviour and/or rivalry were expressed, which could have led to or was the result of a protective and territorial context or a context where collaboration, sharing and learning were desired outcomes. Hutter *et al.* (2011) argue that competition is present amongst collaboration; whilst it reduces collaboration, it is important for success and innovation.

Key highlights of the construct:

- Competition and rivalry were found to be present within the case context but did not have any significant impact on the progress of NCA.

Interpretation

Findings have shown that within the case context, competition and personality issues, although present, have not had a significant impact on the progress of NCA (See D51:75...P27).

D51:75 *"The human psyche needs to always compete with something, I would love to say that we are doing better at natural capital accounting than Australia, forget the rugby, it's a kind of weird thing, and I think you have precedence where you can look at where people start to defend their beaches, through the Blue flag beaches that is a microcosm of this, people defend it they put money into it, because it is just a mini mini Natural Capital Accounting exercise"* - D51: Participant 27.

The construct, "Competition and rivalry", interacted within the theme with the constructs "Subjective: encouragement", "Subjective: personal views", and the construct "Willingness to participate".

6.2.5.6 Reflection

The sub-objective of the theme Emotion was to investigate the role of emotion in the co-creation process of leadership in answering the overall research objective of how co-creation occurred in the emergent case of NCA. Understanding and conversation/dialogue emerged as important elements for the co-creation of leadership.

6.3 OVERALL INTERPRETATION OF RESULTS IN RELATION TO THE CONSTRUCT OF CO-CREATION FOR RELATIONAL LEADERSHIP

The purpose of this section is to explain further the comparative findings of the research related to the sub-objectives of the research in answering the overall research question of how leadership was co-created within the emergent case of NCA. This construct of co-creation for relational leadership comprised five interacting themes: context, value creation, communication; partnerships and relationships, and emotion. Each of these interacting themes has been explained further to produce the constructs within each theme. Each of these interacting constructs within themes and across themes allowed the dominant constructs to emerge. The interacting tenets within each dominant construct have been explored further and have exposed the dominant tenets, which were:

- Ambiguity;
- Credibility;
- Conversation/Dialogue;

- Structures and systems; and
- Optimistic.

It was found that the themes and the respective outcomes, as a consequence of their interactions, were interrelated. These interrelations and interdependencies between themes, sub-themes and constructs highlighted the need for better integration between the theoretical underpinnings of relational leadership theory and co-creation as a tenet of relational leadership theory within the case context of NCA. Subsequently, this integration allowed for the emergence of a core set of principles needed for the further implementation of NCA and the development of an integrated co-creation model, presented in Chapter 7 as contributions to both the leadership schematic as well as to sustainability issues.

6.4 SUMMARY

This chapter provided a comprehensive discussion of the themes that emerged from the analyses of the data collected in this study. For each theme the codes or constructs that emerged were discussed, and the dominant construct was identified for each theme. The highlights for each theme, construct and tenet were presented followed by an interpretation of the results.

The analyses of the constructs revealed a number of emerging tenets. Further analysis revealed salient aspects of each of these tenets, and resulted in the identification of the dominant tenets emerging for each of the identified themes.

The study was concluded in the next chapter, with the findings of the study being summarised. The co-creation model for relational leadership theory was presented as one of the outcomes of the research. The limitations of the current study were reiterated. Possible areas for future research were highlighted.

CHAPTER 7: CONCLUSION

7.1 INTRODUCTION

The purpose of this chapter is to provide conclusive remarks based on the results presented in Chapter 5 and the discussion presented in Chapter 6 of the thesis. A quick reflection of the previous chapters is included. The overall research question and the objectives of the study are addressed against the results of the research. The importance of the study included the contributions to the academic scholarship and the chapter also included the principles emerging from the case context and management recommendations.

Limitations of the study were addressed and recommendations for future research were included.

The chapter concluded with final remarks on the outcomes of the research.

7.2 REFLECTION ON PREVIOUS CHAPTERS

Chapter 1 provided the research problem and the reason for undertaking the study. It included a brief explanation and background to the problem, a brief introduction of leadership, overview of co-creation of leadership, the rationale for the type of study undertaken and the selection of the case context. The chapter briefly explained how the research was conducted, which entailed the use of NCA as an appropriate case context. Individual role-players identified from the case context, who were considered discipline experts of NCA, provided the unit of observation for the research where the unit of analysis was the “co-creation of relational leadership”. The chapter presented the research question of *how leadership was co-created within the emergent case of NCA*. It also provided the objectives of the study.

Chapter 2 presented the literature review of leadership, with a relational leadership focus as the theoretical lens for the study. Also included was the notion of co-creation which served as unit of analysis for the research, linking the phenomenon

of leadership, the theoretical frame of relational leadership and the case context within which co-creation was taking place.

Chapter 3 provided a description of the emerging and evolving concept of NCA as an exemplary case context for the research. It gave an account of the multidisciplinary, multi-level nature of the case as an exemplary case context that enabled the research to be undertaken. The study took place nationally, regionally and globally, and comprised global discipline experts within leading organisations and institutions. These experts from within the case context served as the unit of observation for the research. The case provided the context for the examination of the relational dynamics of relational leadership theory and the embedded tenet of co-creation where the specific practices, capabilities and principles of the evolution of the concept of NCA allowed key principles to emerge throughout the research process. The chapter concluded with a rationale for the use of case studies to undertake qualitative research on leadership.

Chapter 4 gave a comprehensive account of the methodology of how the research was executed the researcher's ontological and epistemological perspectives and the method of how the study was undertaken, which included the data sample from the case context which served as the unit of observation, the method used for data collection, the data collection instruments and a detailed account of how the data was analysed and was intended to be presented in the thesis.

A qualitative research study was undertaken, using a relational leadership lens to investigate how leadership was co-created within a multi-level, multidisciplinary case context of NCA, which served as the data sample and unit of observation for the study. A critical realist ontology and a relational constructionist epistemology were selected and applied in the study. Discipline experts from within the case context served as the data sample. A method of triangulation of semi-structured interviews, a targeted survey and a focus group served as the methods of data collection.

A detailed account of how the data was analysed, using thematic analysis through manual coding and computer-assisted data analysis software, was described. A

comprehensive description, referenced to Appendix D, of how Atlas.ti software assisted the researcher in analysing the data and the presentation of results in Chapter 5 was included.

Chapter 5 presented the data using the Atlas.ti networks and maps, Microsoft Excel spreadsheets and Microsoft Word graphs, figures and tables. These data presentations resulted in the dominant themes, constructs and tenets. The latter was used as an outcome to address the objectives and sub-objectives of the study. The entire thesis was based on five (5) themes, which were colour-coded in order to assist the reader to navigate throughout the thesis.

Chapter 6 discussed and interpreted the findings presented in Chapter 5 against the sub-objectives, objectives and overall research question of the study. The results were discussed against the sub-objectives per theme, in order to answer the overall research question of *how leadership was co-created within the emergent case of NCA*:

Theme: Context: How leadership functioned in the context of NCA?

Theme: Value creation: How value was co-created within and between relationships?

Theme: Communication: How communication between the various emerging relationships promoted or impeded the co-creation process?

Theme: Partnerships and relationships: What was the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA?

Theme: Emotion: What was the role of emotion in the co-creation process of leadership?

The following objectives were addressed in relation to the objectives and outcomes of the study:

Primary objectives:

Three (3) primary objectives were identified for the research:

Objective 1: Improved understanding of the role of co-creation in relational leadership theory, the outcome of which was the key tenets of co-creation presented in Chapter 6.

Objective 2: Added evidence to relational leadership theory as the lens for investigating co-creation, the outcome of which was a construct of co-creation for relational leadership which was presented in Chapter 6.

Objective 3: Identified principles under which Natural Capital Accounting emerged as a concept, the outcome of which was a list of core principles for leadership in Natural Capital Accounting that was presented in this chapter under importance and contributions of the study.

Secondary objectives:

Five (5) pre-defined themes were identified for the research. Each theme had a sub-objective linked to it (Section 2.4.1):

Theme: Context: How leadership functioned in the context of NCA?

Theme: Value creation: How value is co-created within and between relationships?

Theme: Communication: How communication between the various emerging relationships can promote or impede the co-creation process?

Theme: Partnerships and relationships: What is the quality or type of the emerging relationships and the social dynamics by which leadership relationships form and evolve in NCA?

Theme: Emotion: What is the role of emotion in the co-creation process of leadership?

7.3 FINDINGS IN RELATION TO THE RESEARCH QUESTION AND RESEARCH OBJECTIVES

The rationale for this section is to pull together the results within the respective themes and provide a summary of the interpretation and outcomes of the study in addressing the primary objectives 1 and 2, and the secondary objectives of the

study and how these answered the overall research question of how leadership was co-created within the emergent case of Natural Capital Accounting. It must be noted that since the study was set within the case context of NCA, specific practices, capabilities and principles emerged throughout the research process which addressed Objective 3 in identifying and producing a core set of principles for leadership in natural capital accounting. Objective 3 is therefore addressed in section 7.4.2.

At the onset of the research and in designing the research to address the research problem, there was evidence that co-creation of leadership was taking place within the emergent case of NCA. The extensive consultation processes within the multidisciplinary, multi-level case context of NCA provided the evidence that co-creation that allowed leadership to emerge, was taking place. Relational leadership theory provided the theoretical lens for the research, where shared goals and joint meaning-making were underpinning elements of the co-creation process. It was therefore realised that co-creation was happening, but how it was taking place and to what extent was not very clear. The research question to improve understanding of exactly how co-creation was taking place within the case context to expand relational leadership theory was the object of enquiry.

The answer to the overall research question was enacted through the findings within the five (5) pre-defined themes which were identified as key factors within relational leadership theory. The unpacking of the various processes, interactions and relationships within the respective themes provided the evidence for the manner in which co-creation was taking place, disclosing the key constructs and tenets within.

Each of the pre-defined themes has highlighted:

- A. Why was the theme important;
- B. The key variables within the theme;
- C. The dominant elements that related to co-creation; and
- D. How the theme improved understanding of the way leadership was co-created within the emergent case of NCA?

7.3.1 Theme: Context

A. Context was found to be the dominant theme and a fundamental element for the co-creation process. Context provides the space or, more specifically, the biophysical space where the relational dynamics of relational leadership theory were able to interact, co-create and allow leadership to emerge (Osborn *et al.*, 2014). The dominant elements of context were complexity and ambiguity.

B. The key variables within the theme were:

- Complexity (*dominant*);
- Culture – pragmatism;
- Context – collaboration and coordination;
- Scale: top down;
- Scale: bottom up;
- Power – status;
- Culture of diverse views; and
- Culture – innovation and discovery.

C. For co-creation

Context was able to influence the co-creation process at multiple levels, including at the global, local and personal levels. Historical context influenced innovation and was necessary for establishing credibility that was important for co-creation.

D. For relational leadership

Relational leadership was found to be influenced at a broader level by global factors, but at a local level leadership was guided and defined by local social factors, strengthening the notion that leadership is a socially constructed phenomenon that is shaped by multiple scales.

Construct: Complexity

A. Complexity emerged as a dominant factor amongst other factors that influenced how co-creation takes place. Complexity, which is underpinned by complexity theory (Bullock & Trombley, 1999), can be described as a series of

contextual processes where contextual interactions allow for leadership to emerge (Lichtenstein *et al.*, 2006).

B. The key elements of complexity are:

- Ambiguity (*dominant*);
- Space and system;
- New;
- Time;
- Scale; and
- Multidimensional.

C. For co-creation

The co-creation process can be limited by time-bound, project-led approaches where innovation can be restricted and the achievement of broader visions and goals is constrained.

D. For relational leadership

Complexity is a significant contextual factor that allows leadership to emerge. Leadership needs to manage expectations in a complex context and managing these expectations is resource and time-intensive. In dynamic contexts, poor understanding, ignorance, misunderstanding and the emotion of fear were common with new and emerging concepts that can have positive and negative effects on leadership. Multidimensional and multi-level conditions can have both positive and negative effects on the socially constructed processes and relational dynamics of leadership. Complexity does not function independently, as key interacting variables comprising “Space and System”; “New”; “Time”; “Scale” and “Multidimensional”; have allowed the tenet “Ambiguity”, to emerge as the most dominant.

Tenet: Ambiguity

A. Ambiguity emerged as the dominant tenet within complexity. Ambiguity can be described as the level of uncertainty and understanding of a particular subject matter.

B. The key elements of ambiguity are:

- Multidimensional;
- Space and system;
- Time;
- New; and
- Scale.

C. For co-creation

Co-creation is influenced by a context where divergent thinking is allowed to emerge. Language as a medium for communication was a significant barrier. Time can exert its influence on the level of understanding, both positively and negatively. Context through space and systems can have both positive and negative effects on the co-creation process. Structures and systems represented by top-down and bottom-up structures and the resultant power dynamics were contextual factors that significantly underpinned the co-creation process. Top-down processes and power dynamics that manifested themselves throughout the co-creation process were also important in catalysing bottom-up behaviour and innovation for the co-creation process. It can be argued that without powerful top-down bureaucratic structures and systems, co-creation can be affected negatively, resulting in inadequate outcomes for the co-creation process.

Ambiguity was found to have both positive and negative effects on co-creation and leadership, with the positive effects allowing the concept to advance in different directions.

D. For relational leadership

For relational leadership, in an ambiguous context, relationships were found to be dynamic, tenuous at times and uncertain. Ambiguity is also imposed on people, affecting the way relationships and partnerships evolved.

Context provided the foundational base within which these factors were able to interact and develop further. Complexity and ambiguity were therefore dominant contextual drivers within the co-creation process. For relational leadership, this implied that the context of today is by nature complex and ambiguous. There is, however, no need to actively pursue complexity for effective co-creation of relational leadership to take place.

7.3.2 Theme: Value creation

A. Value underpins the relational dynamics within which relational leadership emerged and value is also an inherent driver within the co-creation processes (Nicholson & Kurucz, 2019). The notion of value underpins the entire research, as the case context of NCA itself is a strategic sustainability mechanism designed to capture the value of nature within accounting and economic systems. Uhl-Bien (2006) also speaks of joint meaning-making and socially constructed processes to attain a level of social balance. The dominant elements of value creation were “trust, legitimacy and consensus building” and “credibility”.

B. The key variables within the theme were:

- Trust: legitimacy and consensus building (*dominant*);
- Character traits and identities;
- Culture of diverse views;
- Respect;
- Intentions and interests – power;
- Experience – experts; and
- Interests and intentions – humanity and morality.

C. For co-creation

The value co-created was found to be produced as a result of value judgments¹¹ that took place throughout the value production chain, including

¹¹ The choices that people make that can be underpinned by several factors, scientific, cultural ethical, including choices where there is no evidence, in which case it would be personal value systems that determine these choices (Elliot, 2019).

judgements on highly technical issues. These value judgements were undertaken by a number of social roles in society that were influenced by culture, social and academic background, character traits and personalities. In order to make any value judgements, there was a need to have the correct evidence to inform choices.

D. For relational leadership

Value judgements and value choices influenced the interactions and relationships that emerged. Different value systems, value judgements and choices at multiple levels and from multiple actors affected how people viewed nature and cost its benefits and services that allowed leadership to emerge as a consequence of these choices.

Construct: Trust: legitimacy and consensus building

A. “Trust: legitimacy and consensus building” emerged as the dominant factor for co-creation processes and relationship building. There were several components of the term, “trust, legitimacy and consensus building”. Trust is seen as the glue for social relations where many other factors of honesty, protection and respect interact to create social bonds within relationships (Bullock & Trombley, 1999). Legitimacy implies certainty underpinned by legal considerations whilst consensus building entails converging or reaching a state of unison. Uhl-Bien and Arena (2017) argue that group dynamics of social cohesion involved coming together and building trust.

B. The key elements of trust, legitimacy and consensus building are:

- Trust: legitimacy and consensus building (*dominant*);
- Character traits and identities;
- Culture of diverse views;
- Respect;
- Intentions and interests – power;
- Experience – experts; and
- Interests and intentions – humanity and morality.

C. For co-creation

Association and linking with reputable organisations allowed initial stakeholder consideration of the concept of NCA, which is part of the co-creation process. Establishing relevance and prioritisation of outputs allowed for increased stakeholder buy-in and success of any project, leading to enhanced co-creation. Equating NCA to other well-known charismatic processes, such as climate change, gave a new concept like NCA credibility. Standardised and commonly accepted frameworks and methodologies facilitated consensus building, trust and credibility. Several elements of communication, engagement, legitimacy, consensus building, time and effort are needed for the co-creation process.

D. For relational leadership

Communication and transparency can yield positive outcomes for consensus building, trust, relationship building, and instilling confidence amongst stakeholders. The prioritisation of engaging with all stakeholders and building trust in the process was found to be a key step in the process of relationship building. Smaller groupings and gatherings facilitated and resolved technical disparities through closer collaboration, conversation and discussion. The coaching and mentoring approach of NCA established a sense of confidence amongst stakeholders. Trust, consensus building and relationship building was a process that required adequate investment and time. Multidisciplinary stakeholders were sensitive to hidden agendas and urgency, which affected on relationship building. Consensus amongst strong personalities and technical experts was complex and also time-consuming, and had an impact on relational leadership.

Tenet: Credibility

A. The tenet Credibility, which highlighted the intentions, reliability and integrity of actors in the process, interacted within the construct Trust: legitimacy and consensus building, and emerged as the dominant tenet amongst the tenets. Credibility is underpinned by the elements of trust, certainty, respect and authenticity, and emerged as a dominant element within the co-creation and relational leadership process.

B. The key elements of credibility were:

- Credibility (*dominant*);
- Salience;
- Common goals;
- Sharing; and
- Choice.

C. For co-creation

Feasibility, relevance and practicality were some of the emerging variables for joint understanding of any new concept within the co-creation process. Establishing trust and credibility in any system has the potential to refute any negative elements of power struggles and other social dynamics that could have impeded the co-creation process. Credibility could have been established if there are linkages with reputable processes and well-established disciplines which could have enhanced the co-creation process. Standardisation of processes and methodologies aligns with the common goals and aspirations, thereby adding value to the co-creation process. Ownership of the process amongst stakeholders was also found to be necessary to drive the process forward and contributed to co-creation.

D. For relational leadership

Identities and associations with charismatic and well-known processes and initiatives influenced the relational dynamics. Credible and influential people had an effect on establishing credibility for a particular outcome, thereby contributing to better relationships. Credibility, interacting with the other identified tenets “Salience”, “Common goals”, “Sharing”, and “Choice”, was found to be dominant and essential throughout the value chain of the co-creation process in relational leadership.

Value creation did not function independently; it interacted with other themes, constructs and tenets, allowing the construct “Trust: legitimacy and consensus

building” to emerge as the most dominant, with “Credibility” as the dominant underpinning tenet.

7.3.3 Theme: Communication

A. Communication is a key mechanism that underpins human relations. Relational leadership, which involved interactions and relationship building in a socially constructed process, was dependent on communication. Communication can be described as a process of delivery or exchange. It is commonly effected through language, conversation and/or dialogue, amongst other means. Many leadership scholars reiterated the importance of joint meaning-making and understanding as important for co-creation of relational leadership (Kurucz et al., 2017; Nicholson & Kurucz, 2019; Uhl-Bien, 2006; Uhl-Bien & Arena., 2017). The dominant elements of communication were understanding and conversation/dialogue.

B. The key variables within the theme were:

- Understanding (*dominant*);
- Knowledge and theory of change;
- Organic coordination;
- Consultation and inclusiveness;
- Language; and
- Command and control.

C. For co-creation

Communication was not addressed adequately in NCA but when it was addressed, messaging was successful in linking concepts for mainstreaming into public policies and the private sector, which allowed for improved coordination. Joint publications that went beyond statistical figures that improved the narrative were required. This complemented the co-creation process.

D. For relational leadership

Joint meaning-making to improve understanding, which is partly a function of communication, comprised the elements of language, conversation and dialogue that underpinned the co-creation and relational leadership process. Communication was interdependent on identified interacting tenets and “understanding”, and the tenet “conversation/dialogue” dominated over other elements.

Construct: Understanding

A. Understanding has emerged as an important element of joint meaning-making as part of the communication process. “Understanding” can be described as a process of reaching cognitive convergence which can translate into learning and knowledge generation. Nicholson and Kurucz (2017) and Nel *et. al.* (2016) speak of co-construction and knowledge co-production, which underpinned joint meaning-making in the co-creation and relational leadership process.

B. The key elements of “understanding” were:

- Understanding (*dominant*);
- Knowledge and theory of change;
- Organic coordination;
- Consultation and inclusiveness;
- Language; and
- Command and control.

C. For co-creation

The process of reaching a level of understanding in order to co-create effectively between the multiple actors, for those requesting co-creation and those interacting and providing value co-creation, was influenced by the interacting factors above. The manner in which communication was effected by those requesting co-creation, either by instruction or request, was found to have had an impact on the co-creation process. Understanding through informal conversations and discussions effected through networks, discussion hubs and other voluntary and informal or causal interactions, was found to

promote the co-creation process. However, findings have suggested that the order and control of formal structures and systems, including the actors and champions for co-creation to take place, optimised the benefits of co-creation that resulted from organic or informal coordination. Language was found to be a key factor underpinning the co-creation process. Language was found to be a sensitive matter where professional discipline experts felt marginalised and excluded because of the inability to understand what was being communicated. Language was noted as a significant barrier to attaining a level of understanding or for achieving any level of joint meaning-making in the process. Language was also a barrier to any learning and effective change that was expected through the co-creation process. Learning and knowledge generation was found to be hampered when language was foreign and too technical, and the means of delivery of communication was instructional as opposed to requesting participation.

There was a need for adequate cognitive capacity to challenge the existing level of understanding, as this would have improved the co-creation process. Messaging needed to be clear, simple and precise, which led to better buy-in and uptake of any particular process being communicated, this being NCA. Teamwork, which entailed the ability to work collaboratively in a team, through cross-functional committees, working groups, and other fora promoting common understanding, underpinned the co-creation process. Context for collaboration and interaction towards standardisation of processes was important for progress that supported co-creation. Keeping up with developments in information technology and the popularity of social media platforms promoted wider understanding.

D. For relational leadership

Complete understanding was not always possible because of the technical nature of the subject matter, but varying degrees of understanding had positive benefits for joint meaning-making, co-creation and relational leadership. Empathy present in the case context led to self-organising collaborative structures that provided opportunities for improving understanding. Keeping up with developments in information technology and the popularity of social media

platforms promoted wider understanding, which allowed for more sustainable relationships and social groupings.

Tenet: Conversation and/or dialogue

A. Conversation and/or dialogue have emerged as a dominant means of communication. It was also one of the mechanisms of joint meaning-making (Uhl-Bien, 2006). Conversation and dialogue can be described as the key elements within relational leadership (Cunliffe & Eriksen, 2011)

B. Key elements of “conversation and/or dialogue” were:

- Conversation/Dialogue (*dominant*);
- Change;
- Empathy;
- Self-assess;
- Team work;
- Explain, interpret and apply; and
- Information technology.

C. For co-creation

Ongoing communication through conversation, dialogue and discussion was important for the co-creation process and relationship building, which have yielded positive outcomes for the co-creation of leadership. Conversation and dialogue were therefore considered as effective means of communication, promoting the co-creation process whilst taking into consideration factors such as self-reflection, empathy, change management, teamwork, information technology and other electronic means of communication, including social media platforms. A concerted effort to engage, interpret and apply what had been communicated was also found to be required in the engagement and consultation process of multiple actors.

D. For relational leadership

Conversation and dialogue gave the impression of an informal way of communication which could have been manipulated to fill certain needs and

agendas. It therefore needed to be managed to ensure that it did not lead to miscommunication and negative effects on the co-creation and relationship building process.

7.3.4 Theme: Partnerships and relationships

A. Oral (2019) argues that leadership theories would need to address the social interactions within relationships as a continuous flow. Uhl-Bien (2006) argues that these social interactions underpinned relational leadership theory. Partnerships can be described as an arrangement, either formal or informal, between two or more actors. The ongoing interactions may lead to relationships being built. The dominant elements of this theme were found to be “Interdependence and integration” and “Structures and systems”.

B. The key variables within partnerships and relationships are:

- Interdependence and integration (*dominant*);
- Organic partnerships and relationships;
- Politics – value judgements; and
- Partnerships and relationships fit for a purpose.

C. For co-creation

The need for common goals and objectives, joint meaning-making and shared understanding through effective communication, were important factors for partnership and relationship building, necessary for the co-creation process. Interdependency between and within partnerships and relationships emerged as an important consideration, as was the need for better integration in the case of NCA's involvement with multidisciplinary systems which would promote better co-creation. Integration of the technical skills and disciplines with policy and the social sciences would improve relationships for better mainstreaming and effective co-creation to take place. Numerous platforms at multiple levels were available for emerging social interactions, partnerships and relationships. Despite the possibility of tension between various disciplines because of the involvement of multidisciplinary experts, the attitude of actors within the case context was mostly positive, which was likely to support co-creation processes.

The theme revealed some of the relational dynamics important for co-creation, where quality of relationships, joint meaning-making, communication and understanding were necessary variables that had an impact on the co-creation process.

D. For relational leadership

Purpose-driven partnerships were not as long-lasting as organically formulated associations. However, these organic partnerships and relationships in the form of semi-structured or informal networks evolved as a consequence of formal and more rigid processes. Politics, power dynamics, competition and rivalry were evident in the case context and these factors exerted their influence on the types and duration of partnerships. The need for interdependence and integration of structures and systems with adequate consideration of the relational dynamics of multiple actors, skills and discipline, attitude, reflection and adaptation, confirmed the significant impact of context on partnership and relationship building. An important finding from the research was that partnerships and relationships on the one side must be controlled to a certain extent, but on the other side must also be flexible enough to evolve and collapse when the time or need arose.

Construct: Interdependence and integration

A. "Interdependence and integration" emerged as dominant factor for partnerships and relationship. Interdependency and integration can be described as skills, structures, systems, relationships and networks that interact and depend on each other forming synergies that promote integration. Structures and systems emerged as a significant contextual element in addressing the impact of the quality or type of the emerging relationships and the social dynamics by which leadership relationships formed and evolved in NCA.

B. Key elements for interdependence and integration were:

- Structures and systems (*dominant*);
- Interactions;
- Skills and discipline;
- Attitude;

- Reflection; and
- Adaptation.

C. For co-creation

Adaptive leadership was found to surface as there were examples where NCA was implemented and institutionalised as a reporting system which has been found to assist with co-creation processes. NCA was found to be expressed as is a dynamic environment, an adaptive space, where stakeholders had expressed a willingness to integrate and jointly succeed.

D. For relational leadership

Similar to the outcome for the themes Context and Communication, emerging partnerships, which were found to develop first and subsequently transform into relationships, were influenced by structures and systems and communication. Sustainability of partnerships and relationships was dependent upon the monitoring and evaluation of outcomes and consensus among stakeholders. Because of its relevance at multi-levels, across sectors and across spheres of government, there existed a practice to constantly monitor, assess impact and refine processes and systems. Reflection was a practice within NCA which indicated that it could emerge as a monitoring tool, integrated reporting tool or as an information management system.

7.3.5 Theme: Emotion

A. Emotion was found to manifest itself in several ways, highlighting a willingness to participate and optimism amongst multiple actors as key factors that explained the role of emotion in the co-creation process of leadership. Emotions such as inspiration, passion and enthusiasm, combined with trust, authenticity and consensus building, were found to surface in the case context. Nicholson and Kurucz (2019) confirm that emotion is an important part of the co-creation and joint meaning-making process which can assist in the making of decisions.

Willingness to participate and optimism emerged as the dominant elements of the co-creation process.

B. Key variables of the theme:

- Willingness to participate (*dominant*);
- Competition and rivalry;
- Trust: legitimacy and consensus building;
- Subjective: personal views;
- Objective and orderly; and
- Subjective: encouragement.

C. For co-creation

Other emotions, such as inspiration, passion, enthusiasm, and a willingness to participate, were present, which provided opportunities to further the case of NCA from the producer/technical or champion's side to the users of NCA. This shift would encourage more co-creation, as the relevance of stakeholders needs would be taken into consideration.

D. For relational leadership

NCA is a champion-driven champion-led process where trust, authenticity and consensus building were found to support co-creation and relational leadership processes.

Construct: A willingness to participate

A. "A willingness to participate" emerged as the dominant element within the theme Emotion. The emerging tenets of "Optimistic", "Sharing and learning", "Transparent", "Competence", "Inclusive", "Enthusiasm", and "Reservations" were key elements that interacted to reveal the dominant tenet "Optimistic", underpinning the role of emotion in the co-creation process of relational leadership. A willingness to participate can be described as a voluntary action that is underpinned by several emotions.

B. Key elements of a “willingness to participate”:

- Optimistic (*dominant*);
- Sharing and learning;
- Transparent;
- Competence;
- Inclusive;
- Enthusiasm; and
- Reservations.

C. For co-creation

The success of NCA to date has been the high level of willingness of identified stakeholders to participate and contribute to the different requirements at the various stages of the NCA process, which resonated well with the processes of co-creation. Reservations, reluctance, concerns, a lack of motivation and interests, a lack of appreciation, time and other priorities by certain actors were also expressed within the case context. Follow-up and commitment by broader stakeholders were a challenge. People, personalities, incorrect identification of people consulted, the presence of sceptics and the fear of change were also found to be contributory factors to the willingness of participants to engage with NCA. These factors need to be acknowledged and taken into consideration as they affect the co-creation process negatively.

D. For relational leadership

The ability and competence of stakeholders to participate in NCA processes depended on the available skills and the finances within countries and organisations to develop the necessary skills. This has the potential for partnerships. It was found that passion, eagerness and willingness to participate, proactive action, personal convictions and goodwill were amongst the drivers behind the enthusiasm expressed by stakeholders.

7.4 IMPORTANCE AND CONTRIBUTIONS OF THE STUDY

The research problem of understanding co-creation of leadership within sustainability mechanisms had several implications and contributions towards

leadership theories, in particular, but not limited to relational leadership theory. One of the issues, as a consequence of the chosen case context, was whether or not sustainability mechanisms that were often designed and developed at significant cost to society were actually having an impact on the complex and difficult issues that the world currently faces. Consequently, this piqued the interest of several interested stakeholders, including government and academia, as to the role of leadership and whether or not leadership co-creation was embedded in the process. The other issue was on addressing the inadequacies and limitations of existing leadership theories and ontologies where not enough understanding was present on the relational dynamics of leadership at a micro level, particularly with respect to how co-creation was taking place. Subsequently, the research was designed to address these challenges and the case context of NCA was chosen as it was emergent, multidisciplinary and arising at multiple levels across the globe. Discipline experts from around the world were carefully selected to share their perspectives and experiences on this novel concept of NCA, further adding credibility to the proposed research.

The scholarly pursuit of over-layering co-creation with relational leadership within the emergent case of NCA was found to be a unique study that addressed some of the research shortcomings within the published literature.

Table 7.1: Research priorities and gaps identified for the research

Research Priority	Research Gap	Authors
<p><i>“A more relationship-focused perspective do appear in more recent leadership theories, ... these still primarily take the more leader-centric perspective of a leader caring for followers or other stakeholders, rather than the view of co-creation required of relational leadership for sustainability”</i></p>	<p>Identifies co-creation as a gap in the literature. Their ethical framework is a starting point for relational leadership which can be built upon to address co-creation</p>	<p>Nicholson & Kurucz, 2019</p>
<p><i>“Exploring relational leadership in contexts that are not specifically focused on sustainability would help to identify whether the caring concepts deemed relevant here would be equally important to relational leadership in other settings”</i></p>	<p>Suggests a call for more research studies on contexts other than sustainability</p>	<p>Nicholson & Kurucz, 2019</p>
<p><i>“Such complex problems can only be confronted through collective transdisciplinary approaches (Lang et al., 2012; Mause, et al., 2013): multi-sector (involving governments, business and civil society), multi-level (local to global), and multi-disciplinary (bringing all relevant social and scientific academic knowledge to bear on the problem definition and solution). However, the important role for leadership in collective transdisciplinary approaches to sustainability has not been adequately examined”</i></p>	<p>Call for more leadership research on multidisciplinary, multi-level, multisector contexts</p>	<p>Kurucz <i>et al.</i>, 2017</p>

<p><i>“Based on this initial model of relational leadership for strategic sustainability, and allowing for future empirical refinements, it is also important to focus on how to design an approach to relational leadership development that will nurture and encourage the leadership practices and capabilities that best support strategic sustainability initiatives”</i></p>	<p>Call for leadership studies that support strategic sustainability initiatives</p>	<p>Kurucz <i>et al.</i>, 2017</p>
<p><i>“The ontological challenge is thus how one may remain true to the processual ontology whereby leadership is seen as a continuous social flow, and at the same time delimit the notion of leadership to discernible practices and interactions in order to make it possible to study”</i>. <i>“Therefore, leadership interactions and practices will also have to include possibly diverging processes and instances of unresolved conflicts, ambiguities and debates”</i></p>	<p>Acknowledges that leadership is a continuous socially constructed process that is co-constructed and re-constructed. Calls for co-orientation of leadership processes</p>	
<p><i>“Leadership itself is likely to become increasingly collaborative”</i></p>	<p>Acknowledges that leadership will become collaborative but the tripod model focuses on the leader with less focus on the follower and shared goals. Many authors have expressed their views on the limitations of the “tripod” in addressing the relational aspects of leadership amongst others</p>	<p>Bennis, 2007</p>
<p><i>“Research on collective leadership is therefore encouraged to assess both identity and status”</i></p>	<p>Has explored research in small groups and argues that leadership emergence can take place as a collective. There is a call for more research at multi-level, interpersonal relations, group traits and the important role of context on collective</p>	<p>Paunova, 2015</p>

	leadership	
<i>“We need to move beyond a focus on the manager-subordinate dyad or a measure of relationship quality to address the question of what are the relational dynamics by which leadership is developed throughout the workplace”</i>	A key article on the complexity and future focus on relationships within relational leadership. Emphasis is on the relational and social dynamics by which relationships form	Uhl-Bien, 2006
<i>“A new, relational, knowledge style of leadership is emerging that, through its ability to engender creativity and cooperation, is making an important contribution to the learning”</i>	Has explored leadership beyond spatial boundaries, acknowledging that the new approach to leadership as relational is complex, having qualities of collaboration and co-creation	Horlings, 2017
<i>“A complexity leadership approach adds to leadership research a consideration of the mechanisms and contexts by which change occurs”</i>	New paradigms of what leadership is taking into consideration complexity dynamics	Uhl-Bien <i>et al.</i> , 2007
<i>“Any continuous and circular use of all the functions of Meaning Management, on the other hand, is even a more complex and demanding process and therefore necessitates more than shared leadership models”</i>	The author has highlighted the limitations of existing leadership theories in addressing the dynamic nature of more progressive leadership models such as relational leadership and proposes a meaning management model that is also does not take into consideration co-creation in relational leadership	Oral, 2019
<i>“Context plays a significant role in relational leadership theory”</i>	Authors have acknowledged the important role of context in relational leadership. Contextual issues have been unpacked to varying degrees in the scholarship and it is an ongoing pursuit to understand the role of context in complexity dynamics	Bryman <i>et al.</i> , 1996; Grin <i>et al.</i> , 2018; Osborn <i>et al.</i> , 2014; Pettigrew & Whipp 1991; Stentz <i>et al.</i> , 2012; Uhl-Bien & Arena, 2017
<i>“Meaning making”</i>	This is an ongoing pursuit of what meaning-making entails within leadership processes. Many authors have identified several	Kurucz <i>et al.</i> , 2017; Nicholson & Kurucz, 2019; Oral, 2019; Sjodin, 2019; Uhl-Bien, 2006

	combinations of variables that have improved understanding the process of meaning-making in leadership. This is an ongoing area of research. Work on joint meaning-making and its role in co-creation is developing	
<i>“Communication”</i>	Scholarship on the role of communication has highlighted its importance in co-creation and leadership processes. The evolving nature of communication is an ongoing research area	Cunliffe & Eriksen, 2011; Sjodin, 2019
<i>“Partnerships and relationships”</i>	This underpins new interpretations of what leadership entails with a greater focus on the relational dynamics within leadership	Kainz ,2016; Nicholson & Kurucz, 2019; Uhl-Bien, 2006; Uhl-Bien & Ospina, 2012
<i>“Emotion”</i>	Emotion is a relatively new area of research, particularly for its role in relational leadership and socially constructed phenomena. The scope of emotion and what it entails is an area of future research	Nicholson & Kurucz, 2019

In addressing the research gaps that were identified (Table 7.1), where the research findings contributed to the leadership body of knowledge, the research provided a deeper understanding of the relational elements of leadership at a micro level, with a particular focus on the relational leadership trajectory. However, relational elements were also found in other theories and frameworks. Hence, the findings of this research which have been developed into a co-creation model serve to better integrate the key relational factors of the co-creation process thereby improving understanding and thus contributing to other relationship centred leadership theories and philosophies including but not limited to responsible, collective and/or collaborative; transformational, inclusive, authentic, complexity, shared, servant and global leadership amongst others.

7.4.1 Academic contributions

The study made use of the relevant published literature, including earlier publications from the nineties to the latest publications in early 2020. Each of the research actions and the subsequent findings was related to the published literature and where no publications were found, it was interpreted as being a valid contribution to the body of knowledge on relational leadership theory.

The key tenets of co-creation of relational leadership are:

- Ambiguity;
- Credibility;
- “Conversation and/or dialogue”;
- “Structures and systems”; and
- Optimistic.

These five (5) key tenets have emerged to indicate how leadership was co-created. Each of the tenets has emerged from the respective pre-defined themes of context, value creation, communication, partnerships and relationships, and emotion.

Context, complexity and ambiguity emerged as dominant factors within the theme context, highlighting the emerging relationships with the other contextual elements of the research. It can be argued that context provided the foundational base within which other factors were able to interact and develop further.

The leadership scholarship has reiterated the importance of context in leadership (Bryman *et al.*, 1996; Pettigrew & Whipp, 1991). It can therefore be argued that context has been found to be relevant today, confirming scholarship that has been spanning for more than 25 years. The Intergovernmental Platform on Biodiversity and Ecosystem Services calls for transformative change (IPBES, 2019), whilst the World Economic Forum reiterates the need for joint coordinated action to address global challenges (WEF, 2020). Nicholson and Kurucz (2019) recommend that leadership studies that focus on contexts other than sustainability, including the aspects of co-creation, would contribute to a deeper understanding of the

relational leadership theory. Whilst NCA is a sustainability mechanism, its multidisciplinary nature highlighted in the current research, has provided additional insights into the relational leadership theory. Uhl-Bien and Arena (2017) and Uhl-Bien *et al.* (2007) speak of complexity leadership of today's global challenges, where the complexity science is deeply embedded in context. It can be argued that complexity is an important element of context. The research has gone further in exploring complexity, revealing ambiguity as a key driver within context.

The research also found "Structures and systems" emerging as a dominant tenet within the theme Partnerships and relationships. Structures and systems are contextual elements. It is argued that the quality and duration of emerging partnerships and relationships are underpinned by context. This outcome aligns well with the finding that an ambiguous complex context underpins leadership. Many authors, including Bryman *et al.* (1996), Osborn *et al.* (2014), Pettigrew and Whipp (1991), Stentz *et al.* (2012), and Uhl-Bien and Arena (2017), have researched the role of context and confirmed that context played a significant role in the relational leadership theory. Grin *et al.* (2018) speak of "relational transformative leadership" and confirms the strong influences that context has on leadership.

The research provided a finer analysis of context within which partnerships and relationships formed and evolved, illuminating the dominant tenet "Structures and systems" within the construct "Interdependence and integration". Whilst structures and systems are part of the structural elements of context, the construct "Interdependence and integration" provided further insights on how partnerships and relationships formed as a consequence of the identified interacting elements of context.

The case context has demonstrated how multidisciplinary systems are interdependent, where their coordination and effective functioning require integration for co-creation to take place. It is argued that "structures and systems" in highly complex and ambiguous contexts are very much interdependent and functioning in such systems does require a concerted effort for integration. The detailed analysis of the interactions of the tenet "Structures and systems" between

the tenets, “Interactions”, “Skills and discipline”, “Reflection”, “Attitude”, and the tenet “Adaptation”, also provided further insights into the influence of context at a deeper level, confirming that context is a key element of co-creation within relational leadership.

Context therefore emerged as an important variable for co-creation and leadership processes. The research therefore confirmed this finding, which has resonated throughout the years as an important consideration in leadership studies. The body of knowledge on context is, however, ongoing. The present research addressed some of the shortcomings in going further and identifying **ambiguity** as a key tenet within the co-creation process of leadership. Context, through the emergence of structures and systems, which emerged as another contextual element from the theme partnerships and relationships, confirmed the finding of ambiguity as a key tenet within context. This finding of this research, identifying ambiguity as a key element within complexity, addresses the gap in the literature which highlights complexity as a significant contextual element but does not provide further information about complexity. Global leadership which is underpinned by multiple complex contexts, mentions that global leaders need to deal increasingly with complexity (Bird & Mendenhall, 2016).

The tenet ambiguity was found to be a key factor for context and for communication. Kurucz *et al.* (2017), Nicholson and Kurucz (2019), and Uhl-Bien (2006) have reiterated the ongoing pursuit of meaning-making and, in particular, joint meaning-making in leadership studies. Oral (2019) highlights the meaning management process into what has been developed as the PVA model which however, does not allow for diverging leadership processes nor the process of co-creation. The research highlighted the role of joint meaning-making as part of the co-creation process, through revealing ambiguity and conversation and/or dialogue as key interacting factors. The literature on co-creation confirmed the importance of joint meaning-making as part of the co-creation process. Sjodin (2019) argues that joint knowledge management, comprising the knowledge requirements and the joint activities needed for co-creation, can lead to the success or failure of co-creation processes, particularly in a context of complexity, equivocality, uncertainty and novelty. Davenport and Leitch (2005) speak of

strategic ambiguity in the co-creation process as a valuable asset for the New Zealand science and research sector and they called for further research on the value of strategic ambiguity in other contexts. Hence, **Ambiguity as a dominant tenet within complex contexts therefore implies that leadership would need to transform and adapt in order to deal specifically with ambiguity.**

The research validated previous scholarship in identifying trust as an important element at all levels within the leadership process. Trust was found to be an important component of relationship development, which is also a key factor of successful value co-creation. It can be argued that trust is an important element in both context and the value co-creation process. Kainz (2016) argue that relationships are critically important for the co-creation process. Sjodin (2019) identified trust as an important component of value co-creation. Whilst these scholars have identified trust as an important part of relationships and co-creation processes, the current research went further in identifying **Credibility**, together with the interacting tenets of “salience”, “common goals”, “sharing”, and “choice”, as important components of trust within the process of relationship development. Reypens *et al.* (2016) highlight the need for diverse collaboration of stakeholders that is needed to improve innovation and co-creation. Van Dijk, Antonides and Schillewaert (2014) explore the effects of co-creation, claiming that co-creation effects on behaviour and perception can improve innovation, cut costs and increase sales. However, there has been no further information on the role of the quality of participants engaging in the co-creation process. It can be argued that the quality of actors participating in the co-creation process affects the value gained from such practices. It can further be argued that credibility is relevant for the entire value production chain process. This has management implications when engaging with co-creators amongst diverse stakeholders. In order to improve the value created from the outcomes of co-creation, adequate attention to the credibility of stakeholders who are expected to co-create should be considered.

It can also be argued that credibility, which emerged as an important tenet of the value created within relationships, underpins modern day transformative leadership required to address complex global challenges. Uncertainty in an

unsettled environment tends to dominate global issues, where old systems and frameworks are increasingly being tested in favour of new systems that are driven by individual and nationalist postures (WEF, 2020). Van Zuydam (2014) argue that credibility is regarded as political capital that is relational and dynamic in nature. In the public sector, the need for policy certainty and consistency in decision-making has been expressed frequently (Haricharan, 2015). The observations by Cannatelli *et al.* (2017) of trust and credibility in lower hierarchical structures of an organisation were useful in confirming the findings of this study. Tanner (2019) claims that the quality level of credibility, which is underpinned by trust, respect and authenticity, can be regarded as a tenuous asset in leadership. The study therefore improved understanding of how value was co-created, considering the levels of trust, credibility and effective communication needed for the co-creation of relational leadership. The findings also contribute to improving understanding of other relationship centred leadership theories and frameworks where for responsible leadership theory has an increased focus on integrating more holistically different stakeholders concerns (Voegtlin *et al.*, 2019). **For future stakeholder engagement and co-creation activities, adequate consideration of the appropriate and relevant stakeholders, taking into consideration their credibility, may provide positive outcomes for both leadership and co-creation processes.** Credibility is a notion that is earned over time, and hence its relevance as an embedded tenet can add value to the leadership and co-creation process.

The research further confirmed understanding as an important variable within communication and addressed some of the shortcomings in the literature by exposing **conversation and dialogue** as an effective means of communication amongst the identified interacting tenets. It is argued that communication that takes place through “conversation and dialogue” is important for improving understanding of complex ambiguous systems. It is further argued that “conversation and dialogue” are an effective means of communication for joint meaning-making in the co-creation process. Sjodin (2019) confirms that in highly technical contexts, communication and personal integration become more important for the co-creation process. The research therefore added value in exposing the interacting tenets to explain the level of importance of increased

communication in technically complex and ambiguous contexts. Cunliffe and Eriksen (2011) also identified “conversation and dialogue” as important factors within communication, but their paper does not go further in exploring these two factors. Similarly, with Midgley and Lindhult (2019), who identified dialogue as an important part of the co-creation process, the paper did not investigate the tenet “dialogue” further. Cullen-Lester and Yammarino (2016) speak of network and collective leadership that can contribute to informal leadership and call for further research to explain the relational dynamics within these networks. The current research therefore filled the gaps in research where communication has been identified as an important factor in relational leadership, but the research went further in exploring communication into the various constructs and tenets. Cunliffe and Eriksen (2011) argue that further research should focus on the conversation and dialogue between actors other than leaders within relational leadership.

NCA was a multidisciplinary, multi-level case context. It can therefore be argued that the level of understanding for a range of stakeholders at multiple levels within the case context was investigated, illuminating “conversation and dialogue” as an effective means of communication. The findings also have management implications. For highly complex and technologically challenging situations, where a goal for co-creation has been set, adequate consideration of “conversation and dialogue” to promote better understanding between all actors would be needed for successful co-creation. **Conversation and dialogue is relevant at various scales** and this implies that in all communication, conversation and dialogue should be encouraged as an effective means of communication.

Co-creation within these complex structures and systems that required credibility and effective communication was also affected by the expression of emotions by the multiple actors within the case context. The role of emotion in co-creation and leadership processes is often a neglected scholarly pursuit. Some authors have argued that emotion, including the aspect of the willingness to participate on the part of co-creators, was a significant element of the co-creation process. Scott *et al.* (2018) argue that relational leadership is co-created based on the follower-leader relational dynamics that are also shaped by well thought-out systems and structures. The research has illuminated the various factors of emotion. It can be

argued that emotion affects the co-creation process. The research therefore confirmed that emotion is a significant element of the co-creation process. However, it went further in identifying optimism or an optimistic approach as being a key element in explaining how co-creation took place. This finding addresses the gap in the literature as it has not been previously found or mentioned in the published literature on leadership and co-creation.

It can be argued that optimism, alongside the other contextual factors of ambiguity, credibility, conversation/dialogue and “structures and systems”, is one of the key drivers within the co-creation process. It can therefore be claimed that despite ambiguous complex “structures and systems”, an optimistic outlook is essential for the co-creation of relational leadership. This finding is significant, not only for relational leadership but for relationship focussed theories and frameworks where for example responsible leadership and global leadership are increasingly focused on the behaviours and interactions of a vast array of stakeholders (Bird & Mendenhall,2016; Voegtlin *et al* .,2019) . As the world battles with complex global challenges, it can be further argued that **optimism amongst leaders is required if systemic transformative change in society is to be achieved**. This subsequently has implications for how leadership emerges and, more so, for how **leadership should manage optimism within co-creation and relational leadership processes**.

The study confirmed and contributed to the academic literature on co-creation and relational leadership, as well as to other related relationally focused theories, frameworks and ontologies. The new elements in relational leadership theory based on the co-creation of leadership in the case of NCA were:

- Ambiguity as a key element of context;
- Credibility as an embedded element within trust; and
- Optimism as a key element of emotion for co-creation.

Not until this study has literature in relational leadership theory mentioned Ambiguity, Credibility and Optimism, where the study has provided clear evidence of the importance of Ambiguity, Credibility and Optimism, and by so doing, advancing relational leadership theory. The co-creation model presented in section

7.4.3 is a modest contribution to complement and address some of the limitations of existing and emerging leadership theories. The model further served to integrate the various key elements that have emerged from the research into an integrated mechanism for understanding co-creation in leadership.

Studying relational leadership theory by investigating co-creation of leadership in a multi-layered and multi-disciplinary case of NCA, has offered a unique approach in filling a gap in the literature, contributing to the leadership schematic. The use of the case context highlighted specific practices, capabilities and principles of the evolution of the concept of NCA which allowed key principles for leadership in NCA to emerge for the further implementation of NCA as one of the effective sustainability mechanisms.

7.4.2 Core principles for leadership in Natural Capital Accounting

The third objective of the study which emerged through the use of NCA as a case context for the research was the identification of core principles under which NCA evolved as a concept. The case context highlighted specific practices, capabilities and principles of the case throughout the research process. The (5) five pre-defined themes selected for the research that were based on the key attributes of both relational leadership theory and the tenet of co-creation, were also identified as key focal areas of the case of NCA. Seven (7) key active principles have emerged from the findings of the research that are envisaged to promote and advance the co-creation of leadership in NCA.

Establish the relevance of the local context

Context was found to be a key factor during the evolution of the concept of NCA. Feasibility, relevance and scope of the local context were found to be necessary before embarking on any project or proposal. The process does need an adequate balance of demand and supply of natural capital accounts. Strategic complexity and ambiguity have been found to be an effective organisational management mechanism. However, proper management would be needed to ensure that this is executed in a manner that does not hamper transparency but complements the co-creation process.

Establish trust and build credibility

Value creation, amongst all factors, was found to be dependent on trust. Establishing an environment of ongoing trust through establishing legitimacy and credibility from the beginning that went beyond purpose and goal-driven objectives was found to be necessary. Pilot studies and developing a track record of success is one of the options to build trust and credibility.

Ensure transparency and inclusiveness

Value creation and communication factors revealed transparency to necessary for stakeholder engagement, buy-in and ownership. Transparency is a managed process where information dissemination required judgement. Managed information flow should not compromise openness and transparency.

Promote conversation and dialogue as often as possible

Adequate attention needs to be given to communication, taking into consideration local language, structures and systems. A communication strategy may be co-developed at the inception of any co-creation process, including factors such as empathy, change management, including information technology, teamwork, self-reflection, effective engagement and consultation. Communication and language are considered sensitive matters that require the necessary attention for any process. Adequate translation services and/or interpretation and publications in local languages need to be planned and budgeted for and included as part of the NCA process.

Develop strategic partnerships and relationships

Partnerships and relationships underpinned the NCA process. Partnerships need to be identified initially for their relevance and explicit purpose. These partnerships and relationships, once formed, require appropriate governance structures with adequate flexibility, which allow for monitoring and evaluation to take place to assess their durability, interdependency and longevity. Such systems should aspire towards integration and explore synergies for optimal effectiveness, particularly in a resource-constrained world. Significant consideration needs to be

given to the role of politics and political alliances that can move society towards transformative change through effective leadership.

Reward and incentivise

Emotions and human behaviour have been found to influence numerous processes. Multiple actors needed to be acknowledged and incentivised, where appropriate. Multi-level processes are the building blocks of any process and providers of such services require appreciation and acknowledgement along the value chain.

Promote continuous co-creation

Enthusiasm, eagerness and optimism amongst multiple actors can advance the co-creation process, complementing other requirements of transparency, inclusiveness, credibility and ownership of outcomes. Ongoing collaboration and communication between relevant stakeholders will enhance the process. Synergies and closer collaboration between soft and technical skills and multidisciplinary expertise will promote co-creation and policy mainstreaming.

7.4.3 Joint Contributions

Based on the findings that have contributed to leadership scholarship and informed practical management recommendations, an integrated co-creation model was developed based on the wedding cake model for the sustainable development goals that were developed to provide better clarity on the interdependencies of systems (Lucas & Wilting, 2018). The model demonstrates how co-creation takes place through the dominant interacting tenets to produce relational leadership and vice versa. Relational leadership itself is interdependent on the interactions of the key tenets that promote and optimise co-creation processes. The model, which is an integrated mechanism, is intended to also contribute to the ontology of leadership, addressing gaps of existing models such as the tripod and DAC models, and to complement emerging approaches such as that of the PVA model.

The model therefore highlights the interdependences between relational leadership and co-creation (Figure 7.1).

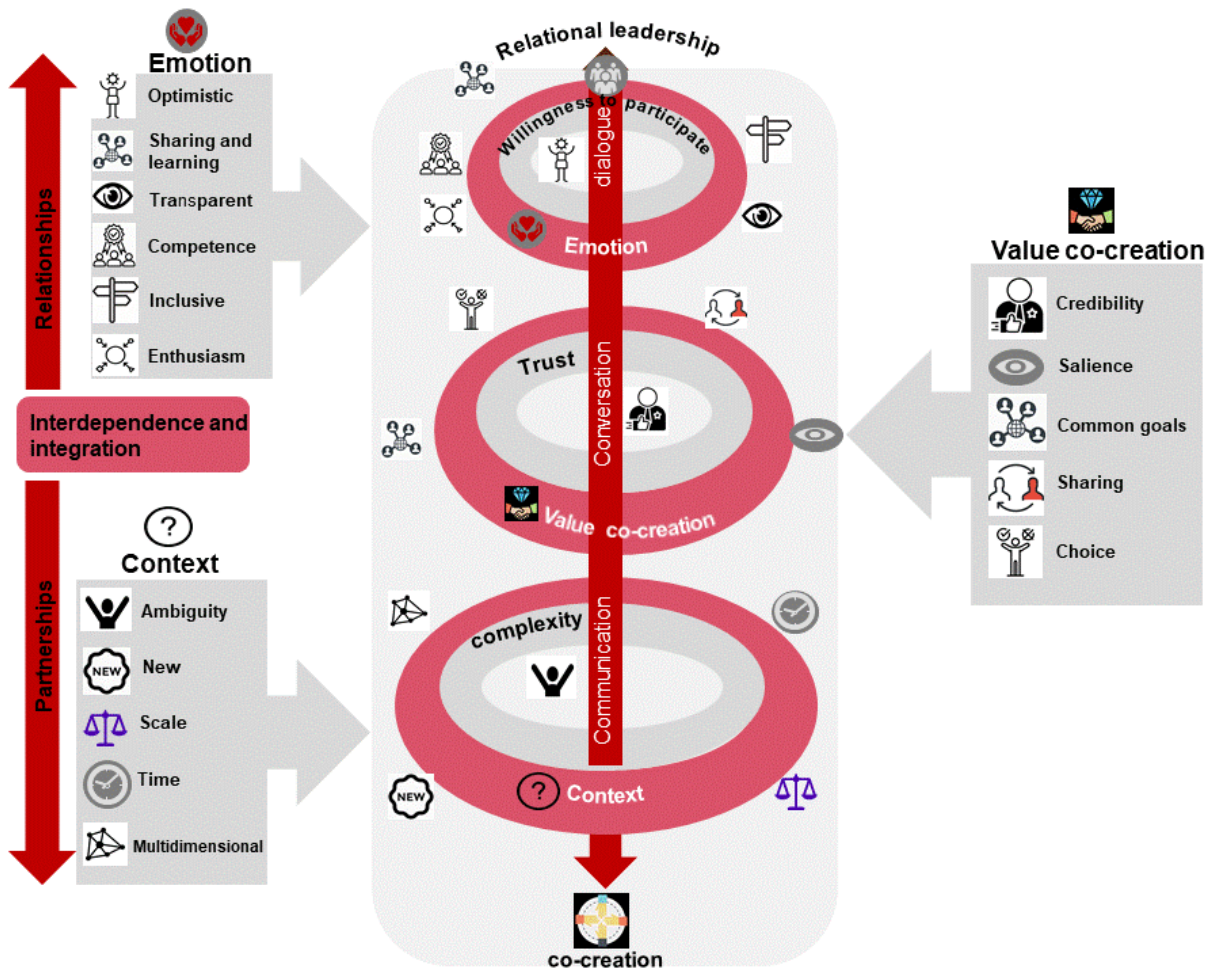


Figure 7.1: Co-creation model for relational leadership theory

It can therefore be argued that the co-creation model that has been developed based on the findings of this research, can be used and applied in other contexts, particularly in those contexts other than sustainability research. The integrated co-creation model can contribute to improving understanding of the relational dynamics of related relationally focussed leadership ontologies, frameworks, approaches and styles including but not limited to global, complexity, shared, followership, collaborative, servant and responsible leadership theories and frameworks.

7.4.4 Recommendations

- Take note of the findings of the research and internalise the information to inform organisational planning and internal policy.
- Apply the core principles to advance the implementation of NCA and other sustainability mechanisms.
- Test and apply the co-creation model for its integration ability to contribute to leadership research, theory and practice.

7.5 LIMITATIONS

The research has focused on the perspectives and experiences of discipline experts within the case context of NCA. Although it has been verified that the use of experts was an acceptable sample for qualitative research, the findings were nevertheless restricted to the observations and experiences of experts within the case context. An attempt was made to gain the perspective of broader stakeholders through administering the survey. However, by default, the surveys were only completed by discipline experts. In addition to the experiences and observations of discipline experts, observations of group dynamics were attempted with the focus group convened. However, the focus group took the same form as the semi-structured interviews and as such, the added value of observing the group dynamics of the session was not realised. The study was therefore limited to the perspectives of discipline experts.

Several constructs emerged within the case context within the pre-defined themes. This approach of pre-selecting themes was in line with the approach of navigating between the entity and relational attributes of relational leadership theory. These contrasting attributes of relational leadership theory according to the scholarship were allowed to coexist albeit the tension created which was necessary for the unfolding of the co-creation process. However, the use and selection of pre-defined theme may have restricted the exploratory potential of the research by precluding possible themes and sub-themes beyond the pre-defined themes. This is therefore acknowledged as an inherent limitation of the research. In addition, amongst the numerous constructs that did emerge, only the dominant constructs were developed further. The research went as far as disclosing the key tenets and

the identified interacting tenets within the respective themes and constructs. Further exploration was beyond the scope and duration of the research.

The research also focused on the positive effects of co-creation. Evils (in Brandsen *et al.*, 2018:21) claims that most of the scholarship on co-creation have focused on its positive effects, but that there are the negative effects of co-creation that must be considered. These elements that had a negative impact on co-creation did emerge in the study but were not developed further.

7.6 RECOMMENDATIONS FOR FUTURE RESEARCH

Future research can benefit from the exploration of similar studies on a wider stakeholder base other than discipline experts within multiple case studies.

For continued research, going beyond the pre-defined themes might be a worthwhile scholarship pursuit, in particular if the future research is linked to smaller case studies and levels of analysis. The research provided some guidance in this regard as future research should focus comprehensively on some of the underdeveloped constructs that have emerged from the research. It is also suggested that future focus should be on the key tenets that emerged from this study and to explore in detail how the identified interacting tenets influence the co-creation of leadership. The integrated co-creation model can be investigated for its potential in addressing the relational dynamics of other leadership ontologies.

Some of the elements identified in the research that did not optimise the co-creation process should be explored further to understand their role in suppressing co-creation, which may have implications for leadership studies.

A research study of the group dynamics of multiple stakeholders within a case context such as NCA, taking into consideration the identified tenets from this study, would add value and improve understanding of leadership co-creation.

7.7 FINAL REMARKS

A qualitative research study, using discipline experts from a global pool within the emergent case context of NCA, was undertaken to improve understanding of how leadership was co-created. The key tenets that explained how co-creation took place emerged from the study. An ambiguous complex context emerged as a significant driver and influencer of the co-creation process. Credibility and trust were found to be significant for value co-creation, whilst conversation and dialogue that emerged as an effective means of communication were found to improve understanding. However, despite the dominant impact of context that surfaced throughout the research, optimism was an unexpected revelation amongst complexity and ambiguity. It was therefore argued that ambiguity, credibility, conversation and dialogue, structures and systems, and optimism were the key tenets underpinning the process of leadership co-creation. The study further identified the interacting tenets that have allowed these five key tenets to emerge dominantly. It can be argued that these tenets are necessary for optimising co-creation that allows leadership to manifest itself within burgeoning relationships.

Undertaking research on the relational dynamics of relational leadership has been an interesting and enlightening experience. The relational leadership field is complex, with many different variables to consider, because it covers human relations and their interactions and relationships with the world at large. The evolving concept of NCA, which is a multidisciplinary multi-level “phenomenon”, provided a charismatic case context to investigate how leadership was co-created. With the onset of the fourth industrial revolution, and with the world presently facing very complex challenges to deal with, human relationships are going to be the focus of attention for finding solutions to bring about transformative change. It is hoped that the findings of this research, which just touches the surface of this burgeoning area of relational leadership, will contribute and be enhanced further to bring about the necessary change that society needs. Elements of ambiguity, credibility and optimism that have emerged as key findings of this research have addressed some of the research and knowledge gaps in relational leadership theory. In conclusion, the research study was effective in improving understanding of how leadership was co-created.

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APPENDIX A: SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE INSTRUMENT



Semi Structured Interview Questionnaire Instrument for the Research Project:

Leadership in Natural Capital Accounting

This research interrogates leadership as a relational and process phenomenon using the multi-level processes of natural capital accounting as a case study to investigate the relevance of *co-creation in the process of leadership*

Tenets of Relational Leadership that relate to Co-Creation	Questions
<p>Context:</p> <p>Meindl (1995) argues that the relationship between leaders and followers is primarily a constructed one, influenced significantly by context.</p>	<p>1. Explain your understanding of the NCA process focussing on the key highlights over the past 8 years?</p> <p>2. Explain your role in the NCA process to date taking into consideration your personal expertise?</p> <p>3. Clarify on whether you see NCA as an evolution?</p>
<p>Value creation:</p> <p>The different world views on value may inform and determine the purpose of leadership. Relational leadership theory fosters collaboration, and co-production (Nicolson & Kurucz, 2017).</p>	<p>4. What are your views on NCA related to its intended purpose?</p> <p>5. Explain what (if any) are the priorities, targets and KPIs for the NCA process?</p> <p>6. Can you explain how these targets are met?</p>
<p>Communication:</p> <p>Nicolson and Kurucz (2017), Kurucz <i>et al.</i> (2017), Uhl- Bien (2006) introduce the notion of joint meaning making in the process of relational leadership. Communication, language, conversation and or dialogue are important tenets of joint meaning making (Uhl- Bien, 2006).</p>	<p>7. How were roles and responsibilities allocated during the evolution of NCA and its process?</p> <p>8. Describe the structures/networks involved (stakeholders) in the NCA evolution?</p> <p>9. What are the barriers to effective communication on NCA and its process?</p> <p>10. What are the opportunities to effective communication on NCA and its process?</p>
<p>Partnerships and relationships:</p> <p>Emerging relationships is a socially constructed process that underpins relational leadership theory (Uhl-Bien, 2006). Leader-member</p>	<p>11. List all partners in NCA including their specific role (s) in the NCA process?</p> <p>12. How long do these partnership and or relationships last?</p>



exchange theory (LMX) affirms the importance of partnerships in leadership (Katz & Kahn in Uhl-Bien, 2006).	13. Describe the partnership challenges on NCA evolution?
Emotion: Ashkanasy, <i>et.al.</i> , (2000) argues that emotion plays a key role in human interactions and dynamics. Nicolson and Kurucz (2017) emphasises that emotion is an important part of the co-creation and joint meaning making process which enables decision making.	14. Explain main drivers during the evolution of NCA and its process going forward relating to the behaviour of people and differing personalities?
	15. Can you explain if the NCA process gives you a sense of encouragement?
	16. What do you think is required to ensure fair and equitable benefit sharing from NCA processes?

APPENDIX B: FOCUS GROUP QUESTIONNAIRE INSTRUMENT



Focus Group Questionnaire Instrument for the Research Project:

Leadership in Natural Capital Accounting

This research interrogates leadership as a relational and process phenomenon using the multi-level processes of natural capital accounting as a case study to investigate the relevance of *co-creation in the process of leadership*

Tenets of Relational Leadership that relate to Co-Creation	Questions
<p>Context:</p> <p>Meindl (1995) argues that the relationship between leaders and followers is primarily a constructed one, influenced significantly by context.</p> <p>The research therefore aims to investigate the functioning of leadership in the context of NCA which provides the space to explore the interaction between the tenets of co-creation and emerging social processes</p>	<p>1. Can you explain if NCA as an evolution provides the necessary platform for co-creation and leadership to take place?</p>
<p>Value Creation</p> <p>The different world views on value may inform and determine the purpose of leadership. Relational leadership theory fosters collaboration, and co-production (Nicolson & Kurucz, 2017).</p> <p>For this research, exploring how value is co-created /co-destroyed within and between relationships would improve our understanding of relational leadership theory</p>	<p>2. What is the value proposition of the NCA process for leadership and decision making?</p>



<p>Communication:</p> <p>Nicolson and Kurucz (2017), Kurucz <i>et al.</i> (2017), Uhl- Bien (2006) introduce the notion of joint meaning making in the process of relational leadership. Communication, language, conversation and or dialogue are important tenets of joint meaning making (Uhl- Bien, 2006).</p> <p>The research therefore aims to highlight how communication between the various emerging relationships can promote or impede the co-creation process</p>	<p>3. Explain the role of communication in the NCA process?</p>
<p>Partnerships and relationships:</p> <p>Emerging relationships is a socially constructed process that underpins relational leadership theory (Uhl-Bien, 2006). Leader-member exchange theory (LMX) affirms the importance of partnerships in leadership (Katz & Kahn in Uhl-Bien, 2006).</p> <p>This research aims to highlight partnerships as a means to understand not only the quality or type of the emerging relationships but also the social dynamics by which leadership relationships form and evolve in NCA</p>	<p>4. How relevant is Partnerships for the NCA process?</p>
<p>Emotion:</p> <p>Ashkanasy, <i>et.al.</i>, (2000) argues that emotion plays a key role in human interactions and dynamics. Nicolson and Kurucz (2017) emphasises that emotion is an important part of the co-creation and joint meaning making process which enables decision making.</p> <p>The Research aims to highlight the role of emotion in the co-creation process of leadership relationship development and leadership emergence:</p>	<p>5. Explain the role of Emotion in the NCA process?</p>
<p>How relevant is the notion of co-creation in the NCA Process?</p>	



<p>Communication:</p> <p>Nicolson and Kurucz (2017), Kurucz <i>et al.</i> (2017), Uhl- Bien (2006) introduce the notion of joint meaning making in the process of relational leadership. Communication, language, conversation and or dialogue are important tenets of joint meaning making (Uhl- Bien, 2006).</p> <p>The research therefore aims to highlight how communication between the various emerging relationships can promote or impede the co-creation process</p>	<p>3. Explain the role of communication in the NCA process?</p>
<p>Partnerships and relationships:</p> <p>Emerging relationships is a socially constructed process that underpins relational leadership theory (Uhl-Bien, 2006). Leader-member exchange theory (LMX) affirms the importance of partnerships in leadership (Katz & Kahn in Uhl-Bien, 2006).</p> <p>This research aims to highlight partnerships as a means to understand not only the quality or type of the emerging relationships but also the social dynamics by which leadership relationships form and evolve in NCA</p>	<p>4. How relevant is Partnerships for the NCA process?</p>
<p>Emotion:</p> <p>Ashkanasy, <i>et.al.</i>, (2000) argues that emotion plays a key role in human interactions and dynamics. Nicolson and Kurucz (2017) emphasises that emotion is an important part of the co-creation and joint meaning making process which enables decision making.</p> <p>The Research aims to highlight the role of emotion in the co-creation process of leadership relationship development and leadership emergence:</p>	<p>5. Explain the role of Emotion in the NCA process?</p>
<p>How relevant is the notion of co-creation in the NCA Process?</p>	

APPENDIX C: SURVEY QUESTIONNAIRE INSTRUMENT



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Economic and
Management Sciences

Letter of Permission

Title of the study
Leadership in Natural Capital Accounting

Research conducted by:

Mr. K. Naicker. Student no. : 15402232

Cell: +27716785455

knaicker@environment.gov.za/kiruben@gmail.com

Dear Participant

You are invited to participate in an academic research study conducted by Kiruben Naicker, Doctoral student from the Department of Business Management at the University of Pretoria.

The purpose of the study is to determine the relevance of co-creation in the process of leadership in the emergent case of Natural Capital Accounting.

Please note the following:

- This is an anonymous study survey to a targeted sample audience. Your name will not appear on the questionnaire. The answers you give will be treated as strictly confidential as you cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us as you have been identified as a key stakeholder in the process of Natural Capital Accounting. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the attached questionnaire as completely and honestly as possible. This should not take more than 25 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.
- Please contact my study leaders, Prof D de Jongh, Director: Albert Luthuli Centre for Responsible Leadership, Faculty of Economic and Management Sciences, Tel: +27 (0)12 420 3386 or email: derick.dejongh@up.ac.za & Dr. Joel Houdet -Senior Research Fellow, The Albert Luthuli Centre for Responsible Leadership, Department of Business Management, University of Pretoria, Tel: +27 (0)73 446 2671 or email: j.houdet@iss-za.com ; j.houdet@acts-net.org if you have any questions or comments regarding the study.

In research of this nature the study leader may wish to contact respondents to verify the authenticity of data gathered by the researcher. It is understood that any personal contact details that they may provide will be used only for this purpose, and will not compromise their anonymity or the confidentiality of their participation.

Please sign the form to indicate that:

- You have read and understand the information provided above.
You give your consent to participate in the study on a voluntary basis.

Signature

Date

Email:



Survey Questionnaire for the Research Project: Leadership in Natural Capital Accounting

This research interrogates leadership as a relational and process phenomenon using the multi-level processes of natural capital accounting as a case study to investigate the relevance of co-creation in the process of leadership

CONTEXT

Meindl (1995) argues that the relationship between leaders and followers is primarily a constructed one, influenced significantly by context.

1. Explain your understanding of the NCA process focussing on the key highlights over the past 8 years?.....

2. Explain your role in the NCA process to date taking into consideration your personal expertise?

3. What were the major challenges in the NCA evolution?.....

4. What were the success stories of NCA to date?.....

VALUE CREATION

The different world views on value may inform and determine the purpose of leadership. Relational leadership theory fosters collaboration, and co-production (Nicolson & Kurucz, 2017).

5. What are your views on NCA related to its intended purpose?.....

6. Explain what (if any) are the priorities, targets and KPIs for the NCA process?.....



7. Can you explain how these targets are met?.....

.....

COMMUNICATION

Nicolson and Kurucz (2017), Kurucz et al. (2017), Uhl- Bien (2006) introduce the notion of joint meaning making in the process of relational leadership. Communication, language, conversation and or dialogue are important tenets of joint meaning making (Uhl- Bien, 2006).

8. How were roles and responsibilities allocated during the evolution of NCA and its process?.....

.....

.....

9. Describe the structures/networks involved (stakeholders) in the NCA evolution?.....

.....

.....

10. Who decides on the media type, location and format of communication.....

.....

.....

11. What are the different communication/ media on NCA within institutions and with your partners?

What are the most important ones to achieve your targets?.....

.....

.....

12. What are the barriers to effective communication on NCA and its process?.....

.....

.....

13. What are the opportunities to effective communication on NCA and its process?.....

.....

.....

PARTNERSHIPS AND RELATIONSHIPS

Emerging relationships is a socially constructed process that underpins relational leadership theory (Uhl-Bien, 2006). Leader-member exchange theory (LMX) affirms the importance of partnerships in leadership (Katz & Kahn in Uhl-Bien, 2006).

14. List all the partners in NCA including their specific role (s) in the NCA process?.....



.....
.....
15. How long do these partnerships last?.....

.....
.....
16. Who gives you your mandate and funding for NCA?.....

.....
.....
17. Who is needed to make decisions to invest in NCA and to collaborate on NCA?.....

.....
.....
18. Regarding Data access, data providers, methodology, data compilation and analysis, who are your collaborators, users of the information and for what purpose?.....

.....
.....
19. Describe the partnership challenges on NCA evolution?.....

EMOTION

Ashkanasy, *et.al.*, (2000) argues that emotion plays a key role in human interactions and dynamics. Nicolson and Kurucz (2017) emphasises that emotion is an important part of the co-creation and joint meaning making process which enables decision making.

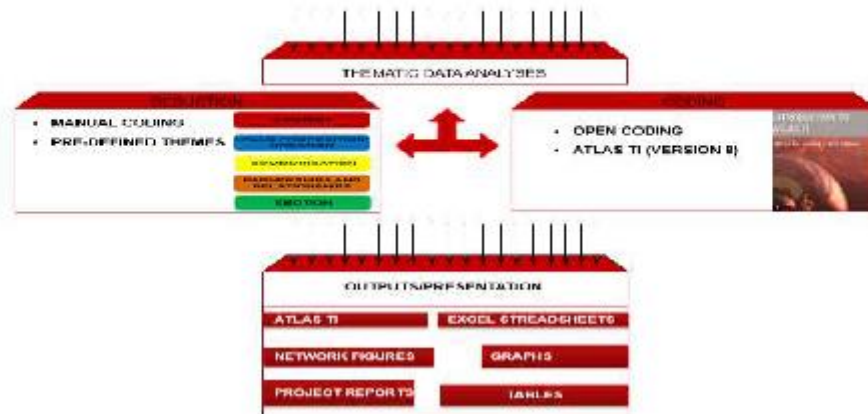
20. Explain the main drivers during the evolution of NCA and its process going forward relating to the behaviour of people and differing personalities?.....

.....
.....
21. Can you explain if the NCA process gives you a sense of encouragement?.....

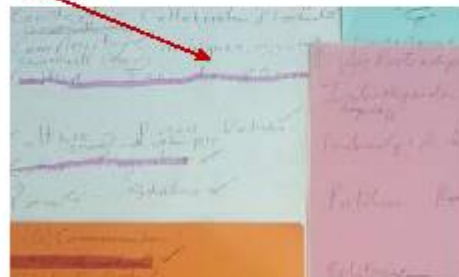
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22. Does your professional environment take into consideration personal issues and views? How?

.....
.....
23. What do you think is required to ensure fair and equitable benefit sharing from NCA processes?



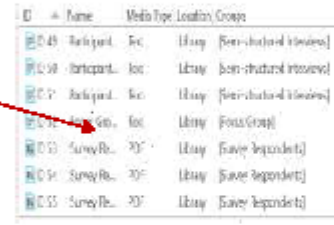
APPENDIX D: STRUCTURE AND PROCESS OF DATA ANALYSIS



STEPS	PROCESS
1	<ul style="list-style-type: none"> Each transcript was read and re-read, identifying common themes and words. The predefined themes served as guiding categories for the identification of collective terms and words from both the published literature, the data itself and the internet. A manual coding process took place on the printed hard copies of the transcripts, using different coloured highlighters and writing notes/memos in the margins of documents.

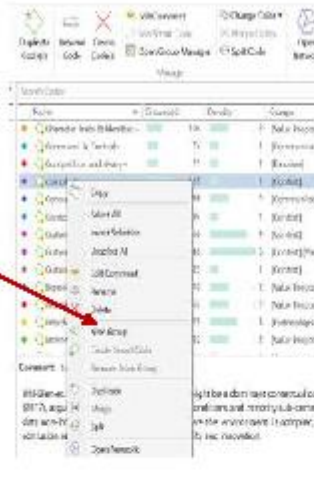
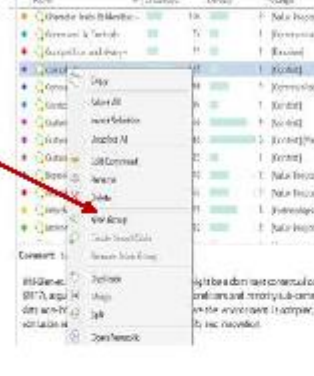



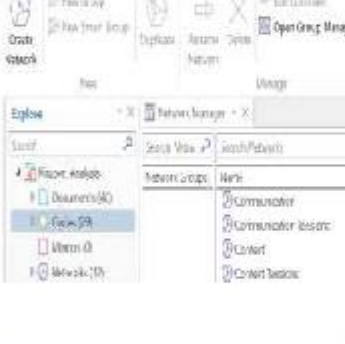


<p>2</p>	<ul style="list-style-type: none"> All data (transcripts and surveys) were cleaned and prepared for loading into qualitative data analysis software, commonly referred to as Computer-Assisted Qualitative Data Analysis (CAQDAS). 	
	<ul style="list-style-type: none"> The different software options available today allow for better management of qualitative data through computer-aided assistance on filtering, reviewing, organising, sifting, quantification and presentation of data. 	
	<ul style="list-style-type: none"> ATLAS ti version 8 was used, which is an improvement on previous versions of the software. The process of breaking down qualitative data into the smallest units called codes and then reorganising and grouping these codes into collective categories known as themes and sub-themes has been made a lot simpler and more user-friendly in version 8 of the software. 	

<p>3</p>	<ul style="list-style-type: none"> A project bundle was created comprising document and output folders. 																																									
	<ul style="list-style-type: none"> The toolbar or ribbon contains several object managers that are used in Atlas ti to sort and arrange activities within the software. 																																									
	<ul style="list-style-type: none"> All data from the three sources (semi-structured interviews, focus group and surveys) were loaded into the software ensuring that documents were correctly labelled and all references to names, people or organisations were replaced with pseudonyms. Documents were then referenced by the software (D1..2..3). 	 <table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Media Type</th> <th>Location</th> <th>Groups</th> </tr> </thead> <tbody> <tr> <td>D145</td> <td>Participant...</td> <td>Text</td> <td>Library</td> <td>[Semi-structured Interviews]</td> </tr> <tr> <td>D146</td> <td>Participant...</td> <td>Text</td> <td>Library</td> <td>[Semi-structured Interviews]</td> </tr> <tr> <td>D147</td> <td>Participant...</td> <td>Text</td> <td>Library</td> <td>[Semi-structured Interviews]</td> </tr> <tr> <td>D148</td> <td>Participant...</td> <td>Text</td> <td>Library</td> <td>[Focus Groups]</td> </tr> <tr> <td>D149</td> <td>Survey Re...</td> <td>Text</td> <td>Library</td> <td>[Survey dependent]</td> </tr> <tr> <td>D150</td> <td>Survey Re...</td> <td>Text</td> <td>Library</td> <td>[Survey dependent]</td> </tr> <tr> <td>D151</td> <td>Survey Re...</td> <td>Text</td> <td>Library</td> <td>[Survey dependent]</td> </tr> </tbody> </table>	ID	Name	Media Type	Location	Groups	D145	Participant...	Text	Library	[Semi-structured Interviews]	D146	Participant...	Text	Library	[Semi-structured Interviews]	D147	Participant...	Text	Library	[Semi-structured Interviews]	D148	Participant...	Text	Library	[Focus Groups]	D149	Survey Re...	Text	Library	[Survey dependent]	D150	Survey Re...	Text	Library	[Survey dependent]	D151	Survey Re...	Text	Library	[Survey dependent]
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D151	Survey Re...	Text	Library	[Survey dependent]																																						

4	<ul style="list-style-type: none"> The Coding process was initiated. 	
	<ul style="list-style-type: none"> The software provided various options for allocating codes of which open coding was chosen where codes were allocated a name for a specific piece of text. 	
	<ul style="list-style-type: none"> Deductive coding from Step 1 where codes and themes that were already manually allocated provided direction and guidance for the coding process. 	
	<ul style="list-style-type: none"> The coding process included an inductive process whereby codes were assigned to the text emerging from the data itself. 	

	<ul style="list-style-type: none"> 29 codes were assigned names and described in detail. 	<table border="1"> <thead> <tr> <th>Name</th> <th>Grounded</th> <th>Density</th> <th>Groups</th> </tr> </thead> <tbody> <tr> <td>Character traits & identities</td> <td>104</td> <td></td> <td>2 (Value Proposition)</td> </tr> <tr> <td>Consumer & Customer</td> <td>74</td> <td></td> <td>1 (Communication)</td> </tr> <tr> <td>Competition and Rivalry</td> <td>71</td> <td></td> <td>1 (Process)</td> </tr> <tr> <td>Complexity</td> <td>185</td> <td></td> <td>1 (Context)</td> </tr> <tr> <td>Consultants & Institutes</td> <td>96</td> <td></td> <td>2 (Communication)</td> </tr> <tr> <td>Consumer-Collaborator &...</td> <td>99</td> <td></td> <td>1 (Context)</td> </tr> </tbody> </table>	Name	Grounded	Density	Groups	Character traits & identities	104		2 (Value Proposition)	Consumer & Customer	74		1 (Communication)	Competition and Rivalry	71		1 (Process)	Complexity	185		1 (Context)	Consultants & Institutes	96		2 (Communication)	Consumer-Collaborator &...	99		1 (Context)
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4.1	<ul style="list-style-type: none"> The code manager provided a measure of how grounded the respective codes were, which is measured by the number of quotations within a code and the density, which is a measure of the frequency or number of times a quotation appears across codes. 																													
	<ul style="list-style-type: none"> The code manager facilitates drag and drop coding, which can strengthen or increase how grounded or strong a particular code can be. 																													

5	<ul style="list-style-type: none"> Revision of allocated codes within and across predefined themes. 	
	<ul style="list-style-type: none"> Navigating between the codes took place, linking and unlinking quotations, increasing or decreasing strength/groundedness through changing quotation length, deleting renaming or combining redundant or duplicate codes where appropriate. 	
	<ul style="list-style-type: none"> This process was supported by the published literature, the data itself, combined with the intuition and experience of the researcher. 	

6	<ul style="list-style-type: none"> Creating Networks and establishing relationships were measured by frequency (number of times a particular code appeared) that was strengthened or weakened by quotation content (number of quotes). 	
	<ul style="list-style-type: none"> Density (frequency or number of quotations across codes and themes), allowed for the establishment of networks and relationships between codes and themes. 	
	<ul style="list-style-type: none"> The software assists with the establishment of such networks and relationships which can be presented in a variety of ways. 	

<p>7</p>	<ul style="list-style-type: none"> Atlas Ti can generate outputs of the analysed data which can be presented in a variety of ways and saved as bitmaps, word document project reports and excel spreadsheets 	
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<p>7.1</p>	<ul style="list-style-type: none"> Atlas ti can generate project reports that manage and arrange the quotation content and number of quotations under the respective themes, sub- themes and codes. A 532 page report, categorising the 29 codes and quotation content into the respective themes, was produced. 	<p>Project: Kiruben Analysis Report created by Atlas Ti on 20/04/2022</p> <p>Code Report - Grouped by: Code Groups All (73) codes</p> <p>Communication</p> <p>Quotation content: I believe that... 2012... 2017... 2018... just... communication... 2018... being... through... communication...</p>
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<p>7.2</p>	<ul style="list-style-type: none"> Microsoft Excel spreadsheets for each of the 29 codes were produced in the form of a quotation browser report comprising quotation name, content, and the actual code density across themes and codes by name and number. 	<table border="1"> <thead> <tr> <th>Quotation Name</th> <th>Quotation Content</th> <th>Code</th> <th>Reference</th> <th>Density</th> </tr> </thead> <tbody> <tr> <td>It was... sustainability... resources...</td> <td>It was... sustainability... resources...</td> <td>Code 205</td> <td>205</td> <td>1</td> </tr> <tr> <td>UN... could... problems...</td> <td>UN... could... problems...</td> <td>Code 876</td> <td>885</td> <td>1</td> </tr> <tr> <td>they... problem... which... exists...</td> <td>they... problem... which... exists...</td> <td>Code 860</td> <td>861</td> <td>1</td> </tr> <tr> <td>the... UN... countries... are... not...</td> <td>the... UN... countries... are... not...</td> <td>Code 707</td> <td>711</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>Code 745</td> <td>745</td> <td>2</td> </tr> </tbody> </table>	Quotation Name	Quotation Content	Code	Reference	Density	It was... sustainability... resources...	It was... sustainability... resources...	Code 205	205	1	UN... could... problems...	UN... could... problems...	Code 876	885	1	they... problem... which... exists...	they... problem... which... exists...	Code 860	861	1	the... UN... countries... are... not...	the... UN... countries... are... not...	Code 707	711	1			Code 745	745	2
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