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Influence of organisational culture on strategic collaborations amongst the supply chain partners

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

06 November 2017

Abstract

The dynamic and global economy presents organisations with opportunities to prosper, however, the market has increasingly become more competitive. The challenge for organisations is to remain competitive sustainably manner while delivering value to shareholders and stakeholders. Supply chain function plays a vital role in ensuring that an entity stays competitive and what has become prevalent is for entities to enter into strategic supply chain collaborations to maximise on synergies and expertise to increase competitiveness of both partner organisations. Although many collaborations are formed on a mutual basis, not many have succeeded, and organisational culture has been pointed out as one of the leading actors contributing to the failure of such strategic partnerships.

A quantitative and explanatory research was conducted with an objective of identifying and isolating the subsets of organisational culture, which influences the outcome of supply chain collaborations. It was found that the adhocracy culture, based on the competing values framework (CVF), is more influential towards a successful outcome of the collaboration. Furthermore, the chances of supply chain collaboration success increase with the more experienced participants being part of the collaboration to provide a leadership role for aligning expectations, roles and responsibilities; and thus, reducing conflict among collaboration partners.

Keywords

Artefacts

Competing Values Framework

Inter-organisational partnerships

Leadership

Social exchange

Strategic alliances

Strategic partnerships

Supply chain collaboration

Organisational culture

Declaration

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

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1 Chapter one: Introduction to the research problem

1.1 Introduction

Chapter one is aimed at providing a succinct, yet in-depth background of the origins of this research study and it will highlight the issues of organisational culture influence in strategic collaborations. In this chapter, the purpose of the research is discussed to justify the gaps which might not have been addressed in previous research. The chapter concludes with highlighting the envisaged benefits of the study within both the academic fraternity and industry at large.

1.2 Background

More and more organisations are faced with the challenging task of remaining competitive and operating sustainably within markets that are constrained with limited resources. Financial resources and expertise are among some of the most valuable resources required by organisations to extend their offering in order to capture as much market share as possible. It therefore requires organisations to be strategic about how they stretch themselves in order to remain competitive. One of the most successful methods used by organisations to expand their market share is partnering with other organisations' supply chain structures in order to complement each other's capacity and capabilities.

Strategic supply chain alliances among supply chain partners, also referred to as supply chain integration or development of strategic inter-company collaboration (Cao, Huo, Li, & Zhao, 2015), have been widely seen and accepted as a strategic imperative for value creation and an alternative for improving an organisation's performance. Specifically, supply chain collaboration enables faster product development, enhances quality, lowers product and supply chain costs, shortens fulfilment times and improves customer service (Fawcett, Fawcett, BJ, & Magman 2012).

To establish whether the alliance creates value or not, the performance of the alliance is measured based on a number of variables (Sambasivan, Siew-Phaik, Mohamed, & Leong, 2013). If these variables are not well managed, they can drastically affect performance of the partnership.

Supply chain collaboration partners are either classified as internal, in other words partners that are inter-functional, or external, referring to suppliers and customers (Braunscheidel, Suresh, & Boisnier, 2010). For clarity in this study, the type of supply chain partners to be focussed on relates to external partners and key suppliers that the organisation is either spending significant amounts with or their dependency on the key suppliers is so high that the impact they have on the supply chain can be detrimental in their absence. The aim of strategic supply chain collaboration is not only to manage the simple delivery and quality of goods and services, but it also involves creating value for both collaboration partners.

Although there seem to be value from a supply chain collaboration, implementation and success of such collaborations is dependent on mutual commitment and relation-specific investments among the partners. Literature on strategic management indicates that strategic alliances, which are critical aspects of supply chain integration, have a high failure rate (Cao, Huo, Li, & Zhao, 2015). The notion that companies collaborate to obtain supernormal relational rents is known as a relational view, and, despite possible benefits, few companies have demonstrated the ability to cooperate in a way that leads to unique advantages (Fawcett, et al., 2015).

1.3 Research problem

Although supply chain collaborations are theorised to have a high probability of overcoming the constraints of supply chain systems, the collaboration structure plays a very important role in enabling positive outcomes (Kampstra, Ashayeri & Gattorna, 2006). The effort to make a supply chain collaboration function efficiently requires both entities' cross-functional teams to individually and collectively excel. The structure alone will not resolve the problem of effective value delivery for the entities, it requires deliberate leadership efforts to provide adequate steering and keep the collaboration groups focussed and enabled.

The formation of the collaboration can thus be likened to the formation of any relational group, as it requires two different organisational groups to fuse and work as one. Although organisations are oriented according to the economics of business, the social factors in collaborations can provide explanations about the behaviour of the collaboration.

Furthermore, elements of social exchange theory become helpful for the understanding the dynamics of collaborations (Feng & Zhao, 2014). The dyadic nature of the partners in collaboration lends itself to different power bases; interests and expectations even though the intent of the group's fusion may be determined based on the premise of delivering shared value for both alliance partners.

Feng and Zhao (2014) ranked trust as a crucial element of social capital, which is required for a relational exchange of the groups. Feng and Zhao (2014) posited that high levels of mutual trust among collaborating partners are likely to discourage culture conflicts. However, trust does not develop spontaneously, even among supply chain partners who might have known one another for long. It takes effort to make sure that none of the partners will be opportunistic and abuse their position or power in the relationship. It follows that without trust and relationship commitment from both partners, the chances of the collaboration to succeed becomes limited.

A part of the social capital required in a relational exchange is the relationship skills, which Beugelsdijk, Koen and Noorderhaven (2006) defined as an organisation's ability and behavioural tendency to actively grow and manage its relations with other organisations. The nature of relationship skills being linked to behavioural sciences lends itself to being influenced by the culture of the environment within which the behaviour is overtly portrayed. It is important to note that the relationship skills acquired within the organisation go beyond being useful within the organisation, because they are crucial in fostering external relationships, such as those in collaborations that are expected to deliver beyond financial gains.

Furthermore, the general view is that for relational transactions, as in the case of inter-organisation collaboration, the degree of managing relational risk is influenced by the organisational culture. Therefore, it may be inferred that organisations with a certain culture profile will be prone to having developed better relational skills (Beugelsdijk, Koen, & Noorderhaven, 2006)

Although there has been an extensive amount of studies done on the antecedents of supply chain collaborations, this study is focused on the influence of organisational culture on supply chain collaborations. According to Cao, Huo, Li, and Zhao (2015), organisational culture is defined as the shared values and beliefs of an organisation. Previous researchers have theorised and demonstrated that organisational culture leads to adopting management practices consistent with the culture and that these practices are associated with the organisation's performance (Braunscheidel, Suresh, & Boisnier, 2010).

The definition of organisational culture suggests that employees adopt certain skills, which they apply in the normal running of the business and these, in effect, affect how they relate and interact within the organisation and outside the organisation. At a macro-conceptual level, the best way to distinguish definitional and methodological approaches to culture is by focussing on culture as something the organisation has versus something the organisation is (Schneider, Ehrhart, & Macey, 2013).

To date, there has been a significant amount of collaborations that have failed even though their formulation was for the mutual benefit of the partnering organisations, therefore there seems to be an association between organisational culture and these failures, the extent of which this study seeks to ascertain.

The problem of culture being the crucial actor leading to failures of the collaborations, is exacerbated by the reality that it is often embedded at multiple levels of the organisations which Fawcett, Magnan, and McCarter (2008) referred to as organisational, intra-organisational and inter-organisational. While it might be relatively easy to resolve glitches which may be present on the organisational and intra-organisational levels, it is is often difficult to diagnose and resolve problems and difficulties on an inter-organisational level.

The effects of the failure of the inter-organisational collaboration may be so far reaching on an intra- or organisational level, where both organisations lose significant market share due to a loss of faith from customers. The undesirable immediate and medium term results will be a loss of revenue, but a more detrimental and long-term effect may be the loss of the good reputation and brand value of the organistaion.

1.4 Purpose of the research

The ability for supply chain collaborations to add to the capabilities of the business and improving the competitiveness of organisations has been extensively theorised (Fawcett, et al., 2015). By engaging in supply collaborations, Frankel and Mollenkopf (2015) posited that the value is unlocked through cross-functional integration, a systematic process which promotes cooperation towards arriving at mutually acceptable results for the collaboration. Despite the fact that organisations intend to collaborate is based on the premise of achieving relatively more relational rents in the markets in which they operate. Previous cases have proven that more collaborations ended up failing to deliver on their manadate.

The literature that exists surrounding supply chain integration and strategic management, where inter-organisation and intra-organisation integration and collaboration were studied, has indicated that supply chain integration is not easy to implement with the effect of a high failure rate of the collaborations being reported (Cao, Huo, Li, & Zhao, 2015). While there are many factors that may affect supply chain collaborations, which Fawcett and Magnan (2002) highlighted, however, Fawcett, Magnan and McCarter (2008) state that organisational culture is an element of human behaviour and is one of the substantive barriers for the success of supply chain collaborations.

Previous studies have demonstrated, among others, the relational resistors indicating how structural and sociological resistors destabilise collaboration and impede the growth of relational skills (Fawcett, et al., 2015). Additionally, other studies have been able to demonstrate, through the competing value framework, how different intra-organisational profiles influence the supply chain collaborations. However, the gap still exists in specifically understanding how the differing intercompany cultures affect the performance of supply chain collaboration and if they can be attributed to the failures of these collaborations.

1.5 Benefits of the study

This study will expand the well-formulated and researched theory of supply chain management and supply chain collaborations by confirming to which extent organisational culture affects supply chain collaborations. The study aims to confirm that certain profiles of organisational cultures are enablers of successful collaboration and as such can proactively be an indicator of what type of a partner the organisation should look for in a collaboration in order for the success probability to be increased.

The outcomes of the study aim to enable supply chain partners and leaders within the supply chain to improve the understanding of the prerequisites of a successful collaboration and should encourage them to adopt best practice in their strategic collaborations. It is expected that the study will also emphasise the need for collaboration partners to undergo a pre-collaboration culture matching process before finalising the collaboration mandate. Pre-collaboration culture will proactively identify and eliminate risks which may lead to resource waste and value destruction for both collaborating organisations.

1.6 Document scope

1.6.1 Chapter one: Introduction to the research problem

This chapter briefly introduces the concept of supply chain collaboration and provides a clear distinction between this type of collaboration and other types of collaborations and why there is a need for the collaboration from the business' perspective. The research problem is also provided, highlighting what has been researched in the field of supply chain collaboration and what gaps still exist. The chapter closes by justifying the reason for the research and the possible implications it could have for businesses.

1.6.2 Chapter two: Literature review

In this chapter, a detail of the literature that exists around the field of supply chain is presented, highlighting the fundamental theories that support existing research. The chapter presents literature on supply chain collaborations and how the performance of collaborations is measured. In addition, organisational culture fundamentals and how organisational culture influences collaborations are presented. Lastly, the chapter presents the interdependence of culture and leadership, with an aim of indicating the necessity of leadership as a steering function that should moderate the impact collaboration could have on organisational culture.

1.6.3 Chapter three: Research hypotheses

In chapter three, four hypotheses upon which the research is developed are presented and discussed. The first hypothesis seeks to narrow the constructs to investigate the cultural element and business profiles that are prevalent in failed collaborations and successful collaborations. Hypothesis two and three pose an inquiry surrounding the relational implication and skills associated with members of the collaborations. Hypothesis four brings the leadership role to the fore and theorises about the type of leadership that is required to moderate organisational culture in collaborations.

1.6.4 Chapter four: Research methodology

This chapter presents the research methodology that was applied in the study and the reasons why a quantitative methodology was chosen. The organisational culture measurement instruments are also discussed in detail, including the organisation's reputation. The data collection method and the subsequent validation and reliability testing requirements are also detailed. Lastly, the chapter concludes by highlighting the limitations of the study and the possible implications thereof.

1.6.5 Chapter five: Analysis of results

In-depth analysis of the survey results is provided in chapter five. The chapter also highlights the shortcomings and strengths of the collected data based on the sample size. Various statistical tests for normality, differences and associations are also detailed in this chapter.

1.6.6 Chapter six: Discussion of the findings

Chapter six provides a thorough discussion of findings based on the results and analysis carried out in chapter five. The discussion is carried out within the context of the sampled data and also highlights the implications of the findings for business and academia. The limitations of the results are somewhat highlighted with particular focus on detailing the shortcoming of generalising the findings for the population.

1.6.7 Chapter seven: Analysis of results

This chapter provides a conclusion and recommendations for future research. In concluding, the chapter highlights the underpinning theory which supports the findings of the study and what still remains unclear. The study's overall limitations are highlighted with respect to methodology, results and findings. The chapter concludes by suggesting a few recommendations for managers and future researchers to amplify the validity of the study findings.

2 Chapter two: Literature review

2.1 Introduction

In the previous chapter, the research problem, the purpose of this study and the benefits of the research were discussed in detail. However, the chapter brought to the fore the need to understand a certain amount of in-depth theory based on the research subject so as to establish the extent of theory and knowledge that have been acquired on the subject already. Therefore, this chapter reviews all the relevant literature surrounding supply chain collaborations, organisational culture and the link between organisational culture and supply chain collaborations.

In the last section of this chapter, the steering and shaping role of leadership is brought to the fore, highlighting the moderating role that leadership plays in shaping cultures of groups such as strategic supply chain collaborations. The ultimate aim of the chapter is to create a base for understanding and steering the study towards the correct gap analysis, which subsequently influences the research approach that is applied (as discussed in Chapter three).

2.2 Introduction to strategic partnerships

Relationships between organisations can take many forms and can occur at different levels of the business. This research project is primarily focused on relationships between two organisations at a supply chain level. It can be argued that these relationships can be defined in various different ways, as seen in existing literature, where these relationships are defined as inter-organizational, supplier-manufacturer or sometimes supplier-buyer relationships.

According to Goffin, Lemke & Szwejczewski (2006), these forms of relationships are classified as business relationships and the difference between the different types of business relationships is brought about by the legal basis under which they are formed. Therefore, it can be argued that no one organisations will have the same type of relationship with another organisation's supply chain and therefore they are often categorised based on the transactions, longevity and the closeness of the relationship (et al., 2006).

Goffin et al. (2006) also argued that the closeness of the relationship would result in the relationship being called a partnership. However, if it is a short-term relationship, it is often described as transactional, whereas relationships with a lot of closeness on a long-term basis can be classified as tactical and are often referred to as strategic. For the purposes of this research study, the strategic partnerships or strategic alliances between supply chain partners are referred to as supply chain collaborations.

Albers, Wohlgezogen & Zajac (2013) defined strategic alliances as purposive relationships between companies that share compatible goals and strive for mutual benefits. The definition is consistent with Todeva and Knoke (2005), who stated that companies undertake strategic alliances to enhance their productive capacities, to reduce uncertainties in their internal structures and external environments, to acquire competitive advantages that enable them to increase profits, or to gain future business opportunities that will allow them to command higher market values for their outputs.

It also emerged in the literature that alliance structures play a vital role in understanding some of the dynamics concerning how it is administered to the extent that most legally binding partnerships tend to be very hierarchical and lead to the relationship being too transactional. Albers, et al. (2013) argued that a large number of alliance failures might be attributed to high transaction costs incurred during negotiation and monitoring partnership agreements and the possible misappropriation of realised benefits from the deal.

While the selection of alliance partners can be considered as one of the critical success factors of a collaboration, it is notable that a systemic approach for the formation of the alliance is essential, as suggested by organisational design literature that emphasise the cross-pollination of resources and the leveraging of the expertise between different partners. This argument is supported by Albers, et al. (2013) who stated that the strength of the linkages between partners significantly impacts on coordination, learning and trust among partners.

Furthermore, this argument is supported by the notion that partnerships among dissimilar organisations are riskier than those between similar organisations, because dissimilar organisational cultures and management procedures can cause partnerships to struggle and fail (Albers, et al., 2013). Therefore, it can be argued that the effort, priorities and resources placed by the individual partner organisations in strategic collaborations are indicative of the organisation's culture, which may be an impediment to the alliance's success if the participants are not aligned in terms of strategic makeup and competence.

The antecedents of strategic alliances and their implications on alliance outcomes were extensively researched and reviewed by Christoffersen (2013) who distinguished between subjective measures and accounting measures. The applicability of game theory and transaction based theory was used to examine complexities caused by inter organisational strategic alliances (Parkhe, 1993; Sambasivan & Yen, 2010). From their research, it emerged that the type of cultures at the organisations that are forming the strategic collaboration have a substantial impact on the degree of integration between the collaboration partners and on value creation. It can therefore be deduced that the failure of partnerships can be mitigated by the careful selection of partners and the legal structure of the collaboration.

Christoffersen (2013) classified alliance antecedents into four categories: behavioural attributes, dissimilarities, experience and control. Firstly, behavioural characteristics are a subjective measure of performance and they are affected by commitment, trust, cooperation, and conflict. Secondly, dissimilarities are mainly due to national cultural distance, organisational cultural distance and relatedness between partnering organisations. Thirdly, experience attributes revolve around expertise relating to alliances and the management thereof. Finally, control is related to where the power lies between the partnering organisations and informs how the legal framework should be structured for the alliance or collaboration (Christoffersen, 2013).

It can be argued that the relational nature of strategic alliances is informed by the agency theory and transactional cost economics theory, whereby behavioural attributes such as trust play a key mediating role in the success of the partnership. Therefore, it requires participants of the alliance to recognise and accept the requirements of power sharing while allowing themselves enough time to learn about the other partner's uniqueness.

Hence, an enormous amount of social capital should be invested in the alliance to ensure elevated levels of trust, interdependence and reduced transactional costs.

An important factor of strategic partnerships is the implied requirements, which would enable the partnership to sustain itself more than any other ordinary relationship. The implied requirement is that the customer and supplier know each other's environment well enough and have a better understanding of each other's requirements so that there is an element of mutual dependency between the two partners. There ought to be meaningful economic gains for both parties in the partnership to make it attractive. Partnerships require a lot of resources to create and sustain their existence. Lastly, collaborations are only suited for specific areas of the business or its functions and cannot necessarily be applied for all operational requirements between different suppliers or customers.

2.3 Supply chain collaboration

Supply chain collaboration was defined by Fawcett, et al. (2015) as the ability to work across organisational boundaries to build and manage unique value-added processes. It is worth noting that the definition refers to unique value-adding processes, which is consistent to the views of Simatupang and Sridharan (2005) who stated that the supply chain that is enhanced by collaboration includes supply chain process improvement, information sharing, collaborative performance systems and incentive alignment.

It can therefore be argued that differentiating between the features of one strategic supply chain collaboration and another is centred around uniquely identified supply chain processes, which are tantamount to improving value created, resulting in growth, higher profits and increased levels of efficiency. More literature has emerged examining the factors influencing supply chain collaborations, more so with an aim to understand and expand on the knowledge of the factors impeding the success of most strategic supply chain collaborations. It is confirmed in Sambasivan, Siew-Phaik, Mohamed and Leong, that collaborations have the potential of establishing closer customer-supplier relationships with numerous technical, financial and strategic advantages. Similar to the literature regarding generic strategic alliances, relational capital and learning features are considered prominent behavioural factors in collaborations.

While most scholars in the field of supply chain collaboration mostly agreed that relational strategies are crucial to understanding and succeeding in the effort of such collaborations, within the organisational transformation literature, social interaction and organisational structure are sources of relational resistance (Fawcett, et al., 2015). With regards to social interaction, it is clear that the individuals who are seconded to be part of such supply chain collaborations must have the correct interpersonal profiles to allow social cohesion between themselves and their partners.

Additionally, this fact can be linked to a perceived dominant organisational culture, which may be prevalent in either of the partnering organisations and as previously mentioned that, very dissimilar organisational cultures may impede successful collaborative efforts. Structurally, long-standing organisational structure with high levels of bureaucracy and restrictive hierarchies, add to the difficulty of allowing the collaboration to adapt.

Supply chain trust is very critical towards achieving meaningful collaboration between any two organisations in strategic supply chain collaborations. From an organisational perspective, as opposed to the personal perspective of trust, Fawcett, et al. (2012) expanded on the two-dimensional nature of trust, since it is a relationship commitment capability as well as a performance capability. The two trust dimensions are required to move from limited trust to collaborative trust. Fawcett, et al. (2012) further argued that while collaboration skills-building can be viewed as an antecedent to improved learning and operational efficiency, trust remains to be at the core of transitioning to a collaboration with innovation capability.

It can further be argued that the nature of the relationship, the legal framework within which it was created and its functions imply that there are transactions experienced by the partners in the collaboration. This argument is supported by Carr and Pearson (1999) who stated that transactions include the costs associated with maintaining the collaboration, negotiation efforts, the implementation of the collaboration and coordinating, measuring and enforcing contractual terms. However, the existence and magnitude of transactional costs can be used to translate and explain the effectiveness of the relationship by stating that the lower the transactional cost, the more efficient will the collaboration will be.

Therefore, the more discrete the relationship is between the two parties, the higher the uncertainty that is brought about and the higher the chances of poor financial performance of the partners (Carr & Pearson, 1999). It can therefore be argued that uncertainty in such collaborations can be reduced by reducing transactional costs, whereby both partners invest in one another and exchange information equally, thereby ensuring that the asset specificity between the two is reduced significantly.

According to Carr and Pearson (1999) the exchange of transaction-specific assets communicates the credibility of the commitment to the relationship and the expanded alliance by sharing. Hence, with transactional costs kept at the minimum, the relationship tends to move towards long-term collaborative exchange relationships. Therefore, the argument that with low transactions, the relational capital that is invested allows the collaboration and relationship to strengthen over time, while the cognitive capital allows for differences in culture and expectations to become more aligned.

2.4 Performance of supply chain collaboration

The most important aspect of any strategic relationship is the intended outcome and whether the actual performance meets the expectations. Although the expected outcome is conceived and agreed at the time when the partnership is formed, the outcome can only be ascertained over time. The one theory that can better help explain the intricacies of the partnership formation towards meaningful results is the notion of social exchange perspective (Leuschner, Rogers, & Charvet, 2013). Therefore, it is quite critical to ensure that the expected outcomes from both parties are aligned with one another with the aim of reducing possible conflicts. The main reason for measuring the supply chain collaboration is to determine its efficiency and use the measurement data to establish the collaboration's viability to continue existing, as well as finding opportunities to continuously improve the collaboration.

Wu, Chuang and Hsu (2014) argued that, from a social exchange theory perspective, any two groups or partners often enter into a relationship or partnership with an expectation to be rewarded in some way. It was further posited that it is important to acknowledge that the exchange beliefs of the two partners will influence the expected rewards, hence positive rewards will be seen as the difference between the extent of the interaction between the two partners and the cost associated with the interaction (Wu,

Chuang, & Hsu, 2014). Furthermore, the rewards will be deemed positive if the cost of the transaction is less than the contribution towards the interaction.

Continuing from the argument of rewards for partnership performance, are the issues around what contributes to good supply chain collaboration performance. It is therefore critical to realise that the collaboration is, among other reasons, formed to enhance three complementary supply chain flows, namely: material, information and finance. It is on this basis that it can be argued that information-sharing and collaborative effort are the two major enabling factors influencing collaborations, from a social exchange theory perspective (Wu, Chuang, & Hsu, 2014). These are the two elements that are dependent on the four social issues, which can be seen as the antecedents (trust, commitment, reciprocity and power). Further to this argument, Blome, Paulraj and Schuetz (2014) argued that an ideal collaboration profile, which often would have low relational rents and sustainable performance, should be based on trust. They further argued that in the absence of trust it is hard for both collaborating partners to achieve sustainable performance and market performance.

Strategic information-sharing can be used between the partners in helping to understand the market within which they operate, as it will enable coordinated decision-making concerning their responsiveness to the market. By implication, aligned partners who share information strategically would be able to create an inter-organisational platform for sharing tactical and operational information, thereby improving the coordinated flow of supply chain activities. Knowledge-sharing can therefore be considered a very critical relational resource (Blome, et al., 2014). In cases where the partners exchange information the collaborative effort has to be reciprocal, which is determined by the degree of trust, communication and interdependence between the partners. In this way, the more willing the partners are to working together leads to significantly fewer transactions and reduced market uncertainty.

Ramanathan and Gunasekaran (2014) argued that supply chain collaboration is dependent on collaborative planning, collaborative decision-making and collaborative execution of supply chain processes. Blome, et al. (2014) supported the argument of collaborative decision-making, stating that from a resources-based view that knowledge

about the other partner's processes improves the coordinated decision-making process, which subsequently improves the collaboration's performance .

Many scholars and researchers have looked at supply chain performance measurements and many frameworks were developed in the process. Most of the models are classified as either being a performance-based model or a decision-making model. Both types have a place in supply chain collaborations in that the measured performance enables and facilitates informed decision-making particularly due to the integrative nature of decisions (Ramanathan & Gunasekaran, 2014). One common factor, which seems to affect how supply chain performance is measured, is the degree of collaboration and the environment within which it operates.

The more strategic the collaboration is, the more comprehensive the measurement becomes, hence the more involved the partners' resources and senior management ought to be. Therefore, it is necessary to consider the various control factors of performance to establish the adequacy of the measurement and accuracy of the statistical results. In addition, the relational nature of collaborations impacts on the duration of the collaboration. It can be argued that short-lived collaborations are bound to lead to bad performance or perceived failure, unlike supply chain collaborations, which have been in existence for longer.

In essence, supply chain collaborations, due to their very nature of attempting to create value for partners, have elements of financial and non-financial performance measures in place. In some cases, the performance measures may be referred to as objective or subjective and alternatively, tangible or intangible measures. In all the different situations which the collaboration may be subjected to, the measures of performance must be aimed at identifying efficiency, dependability, flexibility and quality.

Efficiency can be classified as a financial measure of collaborations as it focuses on processes that reduce cost, reduce inventory levels and increase throughput, which are all linked to revenue improvements. The other three measures, dependability, flexibility and quality, can be classified as non-financial indicators for supply chain collaboration performance (Wu, et al., 2014). Quality is concerned with products and services, which

will be satisfactory to customers served by the collaboration. Dependability is linked to coordinated planning, which increases on-time delivery at predictable prices. Flexibility measures the agility of collaboration partners concerning the change in the markets and the environments it served.

Ultimately, the measurement of performance requires an understanding of the health of the supply chain collaboration and the value it adds for both partners. However, the performance metrics used cannot be generic across all supply chain collaborations, but must be adequate in establishing indicative outcomes, which can then be used by senior management to make coordinated and integrated decisions relating to the collaboration.

A sense of sensitivity must also be applied to the intangible metrics as they can be difficult to measure and may be perceived as subjective. Therefore, it is necessary for both supply chain collaboration partners to align themselves correctly when setting up their goals and targets for the collaborations. The alignment will, in turn, facilitate the effort of the interactions from both parties and subsequently affirm the rewards gained from the collaboration.

2.5 Organisational culture

Most of the literature on strategic alliances, and specifically supply chain collaborations, highlighted the criticalness of organisational culture and its influence on strategic collaborations. It is therefore prudent to refer to theories of organisational culture, and particularly, the impact of dissimilarities or cultural distances between two organisations. Bortolotti, Boscari and Danese (2015, p.183) defined organisational culture as a combination of artefacts (also called practices, expressive symbols or forms), values and beliefs, and underlying assumptions that organisational members share about appropriate behaviour.

Schein (2004) further explored what organisational culture entails and proposed that there are three levels of organisational culture. The outer layer of organisational culture is represented by artefacts and includes, but is not limited to language, rituals, dress, myths and the organisation of space. This layer has an element of ambiguity, because artefacts may look the same across organisations, but they may mean different things to

different organisations. The second layer revolves around the values that are core to the organisation, but they may not necessarily be the same values for the individuals in the organisations. The third layer concerns the underlying assumptions that are shared by persons in the organisation about appropriate behaviour. The third layer is a difficult level to project and understand and often requires in-depth inquiry to get to the core of how they developed and what they mean.

Further to the definition of culture, one has to contextualise its meaning by bringing it closer to the organisation, which can be done from a group's perspective. Due to this perspective is it is clear that organisational culture evolves due to the social nature of the employees within common-shared history. The culture which evolves over time in the organisation differs in strength based on how long the organisation has existed, its members' stability and the emotional intensity of the historical experiences they have shared. Therefore, Schein (2004) posited that the shared element of culture can be associated with structural stability, depth, breadth and integration in an organisation. However, the shared element of culture is limited to only a certain collective and Hofstede (1980) explained it as the mental programming common to people belonging to particular group, which may be different in other groups.

Structural stability speaks to culture in a way that as it is formed, keeps the group's structure stable. In addition, it often becomes difficult to change, which is why even when losing some members of the organisation, the culture still remains intact. The depth of culture pertains to the fact that culture is usually subconsciously deeply embedded among the organisation's members. The breadth of culture speaks to its pervasive nature, which cuts across all functions and routines within the organisation. Integration speaks of the coherent nature of pulling values, belief and norms together among different individuals in the social setting of the organisation and embedding them on a deeper, subconscious level.

The important characteristics of culture, as discussed above, are approached from a slightly different perspective in an argument by Cameron and Quinn, 2006). Their argument stated that organisational culture is a subconscious guideline of how things should be done in the organisation and also provides an identity, with which people can associate in the organisation. In this way it promotes social stability and cohesion among the people in the organisation.

Cameron and Quinn (2006) further highlighted the fact that there are different levels of culture and these are global cultures, national culture and organisational culture. Within these three levels of culture, sub-cultures also exist, which in the case of an organisation, can be sub-cultures of the different functions or departments. At an organisational level, culture will be reflected by the values of the organisation, leadership, routines and the definition of victory, which makes the organisation unique.

An interesting critical observation was revealed in multiple of research projects, which subscribes to the Global Leadership and Organisational Behaviour Effectiveness (GLOBE, 2006) project that highlighted two important points about the relationship between organisational culture and national culture. National culture has an impact on organisational culture and this effect leaves a considerable amount of variability in organisational culture profiles (Schneider, et al., 2013). It thus can be argued that because organisations exist in a nation, they will distinctively project a particular culture, which will be vastly different when a comparison is made between two organisations.

Whether the organisational culture types, as defined by Sambasivan and Yen (2010), have to be similar for the strategic collaboration to realise its maximum value, causal mechanisms with different impacts on performance will have to be tested (Christoffersen, 2013). Sambasivan and Yen (2010) posited that shared cultural values between the collaboration partners increase the likelihood of collaboration success and that the success would be as a result of transparency, mutual respect and willingness to trust one another.

2.6 The influence of organisational culture in a collaboration

Drawing from the various definitions of organisational culture, the common element in each definition is the individual's shared values and beliefs, which in turn shapes how the company does business. Shared values help employees navigate their way internally to build relationships and integrate with peers, while guiding them on how to interact with external stakeholders, for example, as partners in a collaboration.

From a relational aspect, organisational culture creates a platform for organisational learning by promoting the exchange of learning among the individuals who take part in the collaborations. It is crucial to note that a particular culture that has developed in an organisation will enable a platform, which will promote the relationship capability and willingness of the party to integrate, both internally and externally (Cao, Huo, Li, & Zhao, 2015).

Based on the competing value framework, it has also been indicated that a particular type of culture will facilitate certain aspects of the relationship between partners. In the case of developing trust among collaborations, the clan culture has been positively associated with trustworthiness (Schneider, Ehrhart, & Macey, 2013) (Cao, Huo, Li, & Zhao, 2015) (Cameron & Quinn, 2011).

Upon inspecting the four dimensions of culture, clan, adhocracy, hierarchical and market, from a competing value framework (CVF) perspective, it can be argued that organisational culture profile will influence the formation and outcome of the collaboration. The adhocracy culture type is expected to influence the collaboration by enabling and promoting the importance of looking forward and innovativeness to the intended outcomes of the collaborations. The team's cohesiveness and collaborative efforts will also be affected by the clan's culture, in that a successful collaboration will indicate high degrees of team cohesion. The market dimension promotes the necessity for the partners to remain focussed and realise the incentives brought about by the sum of the collaborations.

Therefore, the incentives will be perceived as high in cases of a successful collaboration and, in this way, the culture will have been more rational. Lastly, the hierarchy of a culture may be perceived as stifling for innovation and progress and a very strict hierarchy may lead to the collaboration failing.

Although the four cultural dimensions are expected to affect the performance and outcome of the collaborations, it is critical to understand that they are not independent within an organisation. According to configuration theory, all four aspects of the culture will form a collective profile of the organisation and this profile will be unique to the particular organisation, due to the specific cognitive and socio-cognitive processes that are inherent in configuring this cultural profile. Depending on the organisation's cultural profile, the organisation may be very internally focussed, thus it might find it easier to integrate with intra-functional units, but find inter-organisational interactions more difficult. Hence the impact of each cultural dimension might not be the same such that some cultural dimensions may be more prevalent than others.

Cultural fit is another important factor that affects the outcome of supply chain collaborations. It relates to the integration of both cultures into the other organisation's culture, hence specifically looking at the compatibility of the organisation's values, beliefs and behaviours towards the meaningful performance of the collaboration (Cadden, Marshall, & Cao, 2013). Recent studies have indicated that organisations that still operate their partnerships within the transaction cost economics theory tend to have a narrow-reaching culture, which may create difficulties in finding a cultural fit within a supply chain partnership.

The detriment of such cultural misfits or clashes has been found to be one of the causes of conflict and poor outcomes within supply chain collaboration. According to Cadden, et al. (2013) social mechanisms must be used as an enabler of bridging any cultural misunderstanding between the collaboration partners. It is also important to be aware as to what role or influence each partner has over the other one with respect to the facilitation of socialisation.

Another element of organisational culture that demonstrates the influence it has on collaborations is the paradoxical nature of organisations. Most organisations' strategies provide guidance as to how the organisation envisages to navigate the future and capture more of the market, but often it also re-affirms the importance of maintaining and managing the organisation sustainably. By applying a competing values framework, it is clear that the paradox of remaining competitive in the market externally while maintaining sustainable internal operations becomes a challenge. This paradoxical challenge is

exacerbated by the complexity of forming collaborations that which are expected to achieve strategic intents of the collaboration partners without destroying their organisations (Prajogo & McDermott, 2011).

Prajogo and McDermmott (2011) also posited that it is critical for the organisation to understand its own culture, which would enable it to achieve its desired goals. Based on this fact, it can be argued that, similarly, when entering a collaboration, certain cultural profiles will enable or disable the collaboration's desires to achieve greater goals. If cultural profiles clash significantly they may be an impediment towards the success of the collaboration.

In essence, organisational culture can thus be seen as one of the resources required for obtaining the correct fit between two organisations for a successful collaboration. According to Prajogo and McDermmott (2011), the organisations must be aware of the link between their multidimensional cultural profiles and their impact to the organisation's goals. Therefore, culture management is necessary to ensure that the selection of the collaboration partners is not going to be destructive to normal business operations and will deliver more value.

Hofstede (1981) made a profound statement about the routines and functioning of organisations by stating that the structure and functioning of organisations are dependent on both the rationality of its employees and the cultural environment within which they function. However, the rationality of the individuals is affected by the environment in that the more conducive the environment, the more rational the employees are. This is a crucial element of obtaining social cohesion in a traditional hierarchical organisation, since reasonable functioning is dependent on somewhat predictable behaviour, which is often controlled through hierarchy.

According to Hofstede (1980), any organisation or group (similar to a collaboration) has dominant coalitions and the influence of the coalition towards the distribution of power in the organisation affects how people are expected to behave. The structure of the coalition, its members, its composition and how power is distributed among its members influences the culture of the group. The effect on culture affected by dominant coalitions

subsequently influences the following aspects within a group or organisation: the organisation's goals and objectives; the decision-making process; the organisation's structure and procedures; and the organisation's reward system.

The hierarchy, method of control or style used in a group or organisation influences how people behave and subsequently how the organisation performs. The behaviour and involvement of the members of a group is reciprocal to the type of power, which they experience, be it coercive, remunerative or normative. To illustrate the concept, an organisation that assumes calculative involvement of employees by using remunerative power may find themselves experiencing alienation by more-skilled employees who value job content more than monetary rewards (Hostede, 1980). Often rules and regulations are necessary to manage expected behaviour and the more spontaneous the cooperation from everyone in the group, the lesser the required regulations.

However, frequent conflicts may lead to the establishment of rules and controls to minimise conflicts. Furthermore, the organisational culture of the partners in a collaboration is also affected by the external environment within which they function. To a large extent, the values that dominate the environment of the respective organisations influence how the organisations respond in the environment and what it prioritises as important or not. This is simply because of the legitimacy status of the group in the environment, which may in turn create difficulties for an organisation if there is a big shift of values.

In a study by Cartwright and Cooper (1993), they emphasised the importance of the process of recognition and acceptance in the collaboration process, as well as the different aspects that affect the collaboration parties, to the extent that the performance of the collaboration is affected. This brings to the fore the fact that acculturation will take place during a collaboration through a process of contact, conflict and adaptation. Therefore, the success of the collaboration becomes dependent on the speed and the extent of eliminating ambiguity between cultures to form a coherent group. Ambiguity and uncertainty increase the chances of cultural misfits and conflict; hence the success of a collaboration depends on the extent that the organisational cultures can align and integrate.

Successful integration means that the group culture will be coherent and unitary in that both cultures would have been combined into an emergent and acceptable culture with shared perceptions from both collaboration partners. Both organisations should rather seek a win-win collaboration from the onset, because if not, the cultural distance between the two partners will grow even wider. As Cartwright and Cooper (1993) posited, the greater the dissimiarities between the two cultures, the greater the magnitude of change and effort required to establish an acceptable culture. They make further propositions that one way to increase the chances of a successful collaboration is by baselining both cultures before the collaboration. The organisational culture baseline is a good source of information relating to differences in overt behavioural practices and procedures, and the values on which they are based. Such information will enable leaders to proactively identify and assemble set of actions required towards mitigating possible risks, which may lead to the collaboration failing.

2.7 The role of leadership in collaborations

The preceding sections of literature review introduced the concept of strategic alliances in general, and further reduced it to a more focussed area relating to supply chain collaborations. The emphasis was on collaboration between two organisations. Additionally, a section on organisational culture was discussed to elaborate on what constitutes organisational culture, but more importantly, how it influences strategic collaborations between two organisations to form a collaboration.

It emerged from the preceding sections that organisational culture is a valuable resource, which is acquired over time and its degree of depth depends on the depth of the culture in an organisation. It is primarily this characteristic that makes the organisation's culture a unique resource that is difficult to imitate by others. More importantly, supply chain collaboration's two partner organisations have to work together towards an emergent culture for the collaboration to such an extent that it creates value for both partner organisations.

The inherent nature of culture indicates the complexity that is involved when trying to merge two cultures. Therefore, when translating such complexity from a leadership perspective one can argue that there is a specific type of leadership required to transition the two cultures towards an emergent culture for the best interest of creating an effective collaboration. As Schein (2004) also indicated, the formation of new strategies in a turbulent environment requires a specific kind of a leader who will ensure that the organisation develops a learning culture, which is adjustable to the requirements of new challenges. Fixation to old ways of doing things may be fatal to the company and therefore, leaders with proactive problem-solving and continuous learning abilities are required to navigate the organisations through such changes.

The traditional hierarchical nature of the organisations informs the regulation and control structures of the organisations. It is the role of leadership structures to enable and create adequate controls. As Cartwright and Cooper (1993) indicated, dissimilar cultures in a partnership promotes conflict and creates anxiety, which is why Schein (2004) posited that it is the role of leaders to absorb the anxiety and moderate conflicts, while directing the organisations towards a new culture for the collaboration. Without leadership in the collaboration, groups will find it difficult to adapt to changing environments and new cultures. Therefore, it is crucial for the leaders in the learning culture environment to ensure that they themselves acknowledge their limitations in order to remain objective towards the common cause, which will create a beneficial collaboration for both parties.

Scott, Mannion, Davies and Marshall (2003, p. 925) defined the term organisation as a technical instrument to harness human energies and direct them towards set aims. From this definition, it can be argued that there is a need for appropriate leadership in both organisations that are involved in an alliance to perform a moderation function. Leadership as a moderator ensures that efforts are harnessed and directed correctly and efficiently within the constraints of available resources. This argument is supported by Giltinane (2013, p. 35) who defined leadership as a multifaceted process of identifying a goal; motivating other people to act and providing support and motivation to achieve mutually negotiated goals.

Therefore, it can be deduced that collaborations should put in place a leadership structure that is conducive and enable to achieve the mutually negotiated goals. Kampstra, et al. (2006) argued that the leaders involved or entrusted with steering the collaborations are the most strategic partners in the collaboration, particularly in collaborations that have very influential and powerful individuals as part of the team. Fawcett, et al. (2012) further argued that leadership that steadies the ship is a critical element at the early stages of a transformational process whereby stability ought to be maintained while going through the stages of transformation. The same applies to the case of the formation of collaborations or at a point of inflection period during the life of the collaboration, which may be a threat to the stability or performance of the collaboration.

It can be argued that, based on the formation of a collaboration and the sustenance thereof, through its life cycle stages of forming, storming, norming and performing; the collaboration will be subject to varying degrees of transformational changes, which can never be successful without proper shared leadership (Huxham & Vangen, 2000). The dynamic nature of the alliance and the life cycles requires leaders with capabilities that subscribe to the full range of leadership theory, which is viewed as an extension of contingency theories of leadership and the behavioural theories of leadership. Avolio (1999:45) explained in his study that a leader who seems to have full range of leadership capabilities often exudes traits of a transformational leader and supplements those with traits of a transactional leader.

Schweitzer (2014) posited that the influence of a leader's behaviour is a relational mechanism and determinant of joint capability development, which cannot be ignored because of the influence it has on the collaborative efforts of progressing towards a common goal. Therefore, it can be argued that leadership plays a moderation role when a group is formed for a common purpose. The leader provides guidance to ensure that resources are allocated equitably and establishes measurable targets and assigns roles and responsibilities according to the strengths of the team members.

When two organisations collaborate, often as supplier and customer within the supply chain context, it is clear that they do this to leverage each other's competencies to create maximum value for both collaboration partners, while simultaneously increasing their competitive advantage. An understanding of common intent for reaching a particular goal is usually not too difficult for the collaborating organisations to accept. However, the fact remains that the same organisations will have to adjust to different organisational cultures, heterogeneous ideas, different jargon and working etiquette, the differentiation of power and equitable allocation of gains and perceived interpersonal differences (Hu, Chen, Gu, Huang, & Liu, 2017).

These challenges prove that the collaboration of any two organisations is no small feat and must therefore be steered adequately by well-skilled and experienced leaders throughout the entire lifecycle of the collaboration. It requires leadership which will recognise stakeholder inclusion, decision-making process and distribution of power (Vangen, Hayes, & Conforth, 2015).

2.8 Conclusion

This chapter commenced with the introduction of broad literature on strategic partnerships and the different formations they may take. This section approached existing theory from its origin of partnerships so as to understand that supply chain collaboration is a subset of a strategic partnership. The section also highlighted some of the historical studies that have been done in this field.

The chapter further delved deeper into studies of supply chain collaboration. The definitions of what supply chain collaboration is being detailed and the underlying reasons of their existence are discussed. Theories that inform the formations of these alliances and the management thereof were also discussed, as well as why and how their performance is measured. Supply chain collaboration performance measurement has been necessitated by the intent of forming these collaborations from relation rents perspective with an aim of maximising value for both partners, hence baseline must be established against which performance can be tracked.

The link between supply chain collaborations and organisational culture is examined by first inspecting what organisational culture is and how it could possibly be an influencing factor in any form of collaboration. Together with organisational culture, the specific influential role it plays in collaborations, and theoretically what leads to the different mechanism of influence, were discussed. The theory further brought to the fore to which extent such influences enable or disable the supply chain partnerships.

Lastly, the chapter succinctly discussed the role that leadership plays in steering and shaping the culture of an organisation. This chapter looked at the leadership challenges that may be posed by the formation of a group from two autonomous groups with two distinct cultures, and from a theoretical perspective, how leadership positions itself for such a transformation.

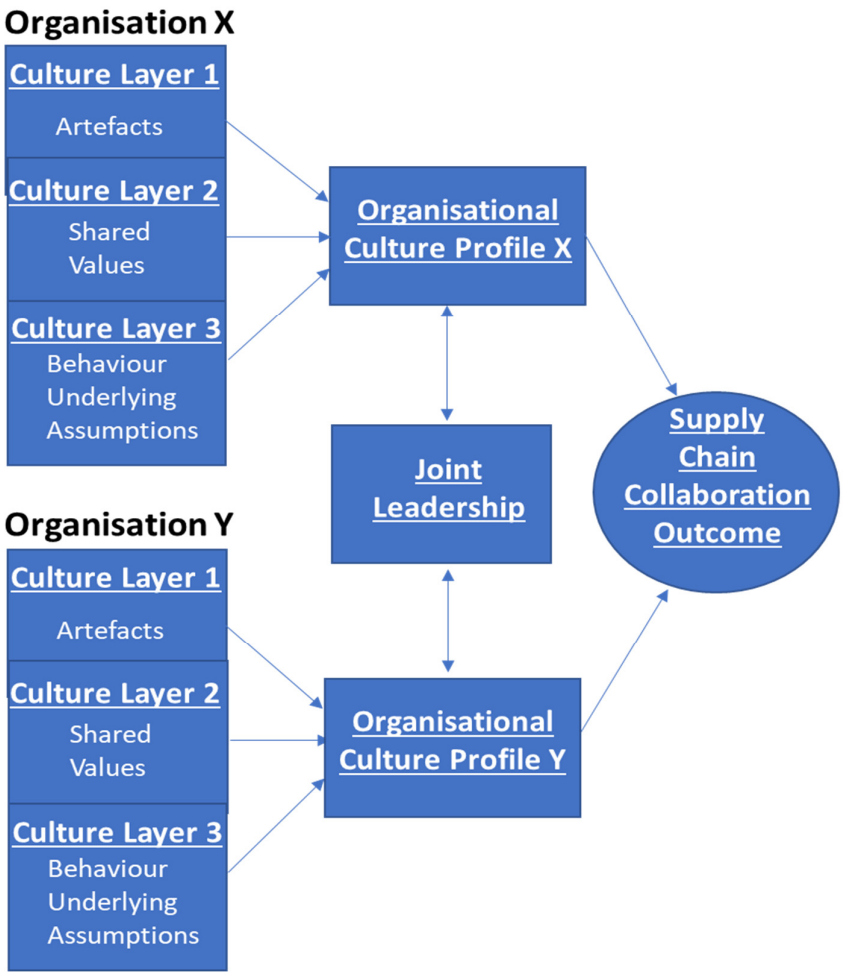
It was clear from the literature review that many organisations realise that in order for them to remain relevant and competitive, one of their strategic approaches should be to establish supply chain partnerships. However, it was also clear that any two organisations with very dissimilar cultures may find it difficult to form and manage a successful partnership. It is therefore one of leadership's roles to proactively identify the risks in partnerships and enable the partner members to mitigate risks timeously by making them resourceful. Based on the literature review in Chapter two, the basis of hypothesising certain constructs is discussed in detail in Chapter three.

3 Chapter three: Research hypotheses

3.1 Introduction

The overarching hypothesis for this research is: "Organisational cultures influences the failures of supply chain collaborations". With the aim of breaking down the main hypothesis, the research framework in Figure 1 below is proposed from which a subset of hypotheses has been derived. The research framework is formulated based on the literature review in the previous chapter.

Figure 1: Proposed research framework: Influence of organisational culture on supply chain collaboration outcome



3.2 Hypothesis one: A dominant subset of organisational culture layers affect supply chain collaboration's outcome

Hypothesis one focuses in the inherent impact and contributions that different organisational cultures have on the failure of supply chain collaborations. The literature indicates that when organisational cultures that are too dissimilar, it is difficult for a strategic collaboration to function efficiently and successfully.

3.3 Hypothesis two: A lack of hierarchical commitment between the participating organisations impedes the success of the collaboration

Although transactional leadership is encouraged to develop a structure and governance for operationalising the collaborations, too much bureaucracy inhibits the taking of risks and limits idea generation, which may lead to the withdrawal of the collaboration participants. This hypothesis seeks to ascertain to which extent that bureaucracy impacts on collaboration's failure.

3.4 Hypothesis three: Leadership orientation reduces the organisational culture distance between supply chain collaboration partners

If proven to be true, this hypothesis will confirm if present and visible leadership in the collaborations, and a particular style of leadership, ensures the collaboration's success or failure. Existing literature has indicated the importance of leadership to the extent that some scholars posited that a combination of transformational leadership and transactional leadership is the key to a successful collaboration, hence the need to confirm the type of suitable leadership style for supply chain collaborations.

3.5 Conclusion

In this chapter, the approach of hypothesising certain constructs was informed by the acknowledgement of the extensive body of theory that already exists in academic literature. Previous studies investigated most of the fundamental constructs, however the hypotheses put forward in this chapter were based on the missing or unclear explanations of the outcome of supply chain collaborations. Based on the hypothesis method of inquiry, the appropriate research methodology to support the hypotheses was chosen, which is discussed in the following chapter.

4 Chapter four: Research and design methodology

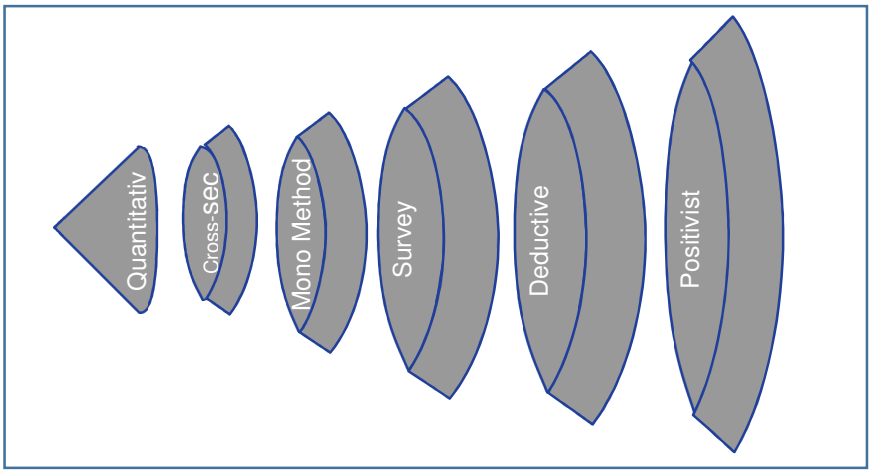
4.1 Introduction

In academic research, it is of great importance to ensure that the research methodology chosen supports the research hypotheses (as established in Chapter three) from the beginning to the end, while bringing to the fore a high-quality research study with the highest possible credibility. Knox (2004) posited that in order for researchers to state transparently what their philosophical and methodological stance is, the relationship between the two requires lots of understanding. Therefore, this chapter describes the detail of how the research design and methodology were undertaken to ensure a meaningful and credible study.

4.2 Choice of methodology

A better understanding of the philosophies and methods applied in a research study improves the chances of ensuring consistency and coherence of the information throughout the entire study (Saunders, Lewis, & Thornhill, 2012). Although the research study is classified as predominantly confirmatory, it is likely that the results of the collected data and the analysed data may lead to explanatory elements being brought to the fore. While the research was to be anchored in a positivism philosophy, it was noted that this was no limitation to the researcher in applying some interpretivism to explain any inferences that may have been identified. Interpretivism philosophy was applied based on the psychological nature of culture as it involves behavioural and social traits which had to be interpreted (Saunders, Lewis, & Thornhill, 2012).

Figure 2. Layers of the research design strategy



Source: Whittaker (GIBS, 2016)

Figure 2 above shows an adapted research onion representing the chosen philosophies, approaches and strategies that were followed for this study (Saunders & Lewis, 2012). The outer layer represents the view of a positivist research, which is informed by the fact that the study sought to apply the existing rich theory in describing what might be possible hypotheses of an observed trend among strategic supply chain partnerships. Positivist research places emphasis on predicting the outcomes of a research so that it can then provide alternatives for controlling the measured and observed variables in the future (Saunders & Lewis, 2012, p. 105)

A deductive approach was used for the study, primarily because a broad theory base exists on the research topic, therefore it was expected that the collected data would allow the research to deduce some meaning and inferences based on the statistical observations that were made. Zikmund (2003, p.46) defined deductive reasoning as a logical process of deriving to draw a conclusion about a particular instance based on a known premise or something known to be true. On the other hand, Creswell (2003) suggested that, with the objective of testing or verifying theory rather than developing it, the researcher advances theory, collects data to test it and reflects on the confirmation or disconfirmation of the theory by the gathered results. A deductive research approach lends itself to the utilisation of survey strategies as measuring instruments and for data collection. This requires that a questionnaire be developed and structured to be able to inquire about the theory constructs to be tested. Since this study was based on known theories that were used to predict or develop and understand relationships between variables, the time required to complete the study was relatively short, which is why a survey strategy was suitable given the time frame.

A mono-quantitative study was applied to collect evidence and data of the theory that exists and use the data to determine if there are any correlating relationships or associations, which can be described towards explaining the root cause of the research problem. Quantitative research was chosen over qualitative, because it is not the objective of the study to develop new theories and because quantitative research is concerned with resolving two primary validation concerns namely, reliability and validity of data (Venkatesh, Brown, & Bala, 2013). Therefore, it was imperative that enough effort be placed in ensuring that the study's credibility would not be affected negatively by the validation shortfalls.

The fifth layer of the research onion speaks to the time horizon associated with the period of the study. For the purposes of this research study, a cross-sectional research design was applied because after having established that data collection was going to happen at only one period within the academic year, the timeline which was relatively short. Therefore, a cross-sectional research approach was deemed appropriate.

4.3 Population

The research population was determined as all the organisations that have been part of supply chain collaborations within a particular organisation irrespective of the geographic location including both multinational and local organisation. However, to have a manageable research study, only a relevant and adequate sampling frame, representative of the population, was considered (as specified in section 4.6 below). This sampling frame was based on organisations with active operations in South Africa and has somewhat interacted with the researcher's own organisation.

4.4 Unit of analysis

In this study, the unit of analysis was supply chain collaborations. The suppliers and the customers were the sources of the collected data, with the list of suppliers obtained from the researcher's organisation's suppliers database. The database for suppliers is categorised according to suppliers, from which a pool of strategic suppliers, who are part of strategic collaborations, could be selected. To ensure that the correct suppliers were selected, the list of suppliers that was identified was verified with the respective sourcing category managers in the organisation to verify that the identified suppliers were indeed participating in supply chain collaborations.

4.5 Sampling method

Probability sampling techniques was used, because according to Saunders and Lewis (2012), probability sampling is a variety of techniques that are used for selecting a sample at random from a complete list of the population. For the purposes of this research, the sampling population was all the organisations that participated in supply chain collaborations and were either in active collaborations or have previously been part of the collaboration.

This approach ensured that there would be no limit to the study's timeframe as it would include historical data and current data and would also include both failed and successful collaborations. A stratified random sampling technique was applied to select collaborations that involved strategic partners out of all the suppliers in a database of about seven thousand suppliers. The strategic collaborations stratum was used for a sampling frame in which simple random sampling was applied to select five suppliers per supply chain sourcing category.

4.6 Sample size

In order for the sample size to be determined and acceptable, the impact of sample size on a research study must first be understood. In statistical terms, increasing the sample size decreases the width of the confidence interval at a given confidence level (Zikmund, 2003, p. 423). Therefore, it is of critical importance to note, when determining the sample size, to take into consideration the following factors: the heterogeneity of the population, tolerance of errors and confidence level of the statistical results.

The sample size for this study was determined based on a hub and spoke approach. The hub was represented by the organisation's supply chain core function, from which fifteen sourcing categories were derived. The hub was used to provide respondents from the organisation in order to provide a representative sample of the customers.

A total of seventy-five hub respondents were approached to participate in the survey. Spokes were represented by the population of suppliers, which translated to five strategic suppliers per sourcing category, which resulted in a total amount of seventy-five suppliers. Two respondents were targeted per supplier to make a total sample size of 225 respondents. The targeted respondents' hierarchical roles in the different supplier organisations ranged from senior managers to senior executive members who were participants in supply chain collaborations at the time.

With such a modest sample size proposed, it was critical to ensure that the response rate was high in order to not compromise the credibility of the study and the breadth of the data analysis. According to Saunders and Lewis (2012), a benchmark of a minimum thirty responses is required for any reliable statistical computation and analysis to be performed. To ensure a high response rate, a three-reminder rule was applied, which meant that the survey was allowed to run for four weeks and the respondents were sent a reminder at the beginning of each week.

Another consideration that was taken was the impact that each variable in the questionnaire instrument would have, because if primary variables were being measured with categorical data, the sample is required to be much bigger that when using the Likert scale. The other element that was considered when making the sample size decision was the acceptable margin error, which Bartlett, Kotrlik and Higgins (2001) suggested should be 5% for categorical data and 3% for continuous data. For the purposes of the study, a sample calculation method was derived from the table developed by Bartlett, Kotrlik and Higgins (2001),

Table 1: Minimum returned sample sizes for a given population: Adopted from Bartlett, Kotrlik and Higgins (2001).

Population	**Sample Size**	
	Continuous data @ margin error = 3%	Categorical data @ margin error = 5%
	Alpha = .05; t=1.96	Alpha = .05; t=1.96
225	119	138

A minimum sample size was calculated to be 119 based on the five-point Likert scale for continuous data and 138 for categorical data. However, due to the continuous data variables being more critical than the categorical variables for measurement in this study, the target sample for the study was to be that of the continuous variable, which is 119.

The formula used to calculate the sample is:

$$n = [(95\% \text{ confidence level})^2 \text{ X } (\text{standard deviation})^2] / (\text{error rate})^2$$

4.7 Measuring instrument

A survey questionnaire was used as the main instrument for data collection as it allowed quantitative data to be collected from many respondents, within a short space of time. A survey questionnaire is considered one of the best methods for collecting primary data specific to a particular research study. Surveys provide a cost-effective, fast and efficient means of assessing a lot of information about the population (Zikmund, 2003, p.49). The survey was designed in such a way that it used self-administered questions to solicit responses, which would be analysed statistically to draw any inferences observed from the results with respect to existing theories.

A proposed questionnaire was adopted from the organisational culture assessment instrument (OCAI), developed by Cameron & Quinn (2011), as shown in Appendix A. Researchers are permitted to use the OCAI questionnaire on the condition that they acquire a copy of the book "Diagnosing and Changing Organizational Culture" by KS Cameron and RE Quinn, from which they obtain password access to the instrument. In the case of this research, access to the instrument was obtained by registering on the Jossey-Bass website with the specific password obtained after acquiring a copy of the book.

Additionally, a request was sent to the Jossey-Bass publishers to make them aware of the research study and they also approved the use of questionnaire on condition of citing the authors in the research report. Approval and confirmation from Wiley global permissions is attached in Appendix B. The original questionnaire was customised to have a fit-for-purpose demographics section that is applicable to the context of the study. Section one had two sub-sections measuring data about the respondents and data about the organisation respectively. Section two of the questionnaire measured the "as-is" cultural elements, using the 5-point Likert scale from which diagnosis of cultural strength, cultural congruence and cultural type of the organisation were established (Cameron & Quinn , 2011). The questionnaire measures four culture constructs as indicated in the confirmatory factor analysis path diagram of figure 3 (section 4.10.1). The latent variable F1, F2, F3 and F4 in figure 3 represent culture dimension clan, adhocracy, market and hierarchy respectively.

The rationale behind opting to use the OCAI instrument as the principal model from which the questionnaire was developed, is because it has been extensively utilised in more than a thousand organisations since its development. In the process of its utilisation, it has also been subjected to various validity and reliability testing by various scholars during different studies associated to organisational culture (Cameron & Quinn, 2011). Therefore, it can be considered a tried and tested data collection instrument. The OCAI-based questionnaire supports this study, although it is very short and it was designed to take about fifteen minutes to complete, however, it still enabled data to be retrieved, to such an extent that an organisational culture profile could emerge from the analysis, which would then support the enhancement of the hypotheses of the study.

The questionnaire was web-based and was developed on Survey Monkey so as to make it easy to launch for all the identified respondents. It comprised of three main sections, namely, demographics, organisational culture and cultural leadership.

4.7.1 Rating scales

Differences in response styles are a direct threat to the measurement of validity of the involved scales, because it hampers the possibility to make meaningful comparisons across groups (Tobi & Kampen, 2013). Gob, McCollin and Ramalhoto (2007) emphasised that the specific problem, the context of data analysis and the problem-solving potential of methods are crucial for choosing the scale type and the appropriate analysis methods. It is therefore required for the researcher who collects either ordinal or cardinal data to appropriately apply the correct rating scale accordingly.

In this study, the demographic sections were measured using mostly categorical and list-type questions. Data for the organisational culture and cultural leadership sections used open-ended questions measured based on a ranked scaled. Therefore, the appropriate perceptual 5-point Likert scale, with values ranging from one to five with the midpoint at three, was used for this purpose.

4.7.2 Pilot test

Pilot testing is an important stage in the development of a measuring instrument, as it allows the researcher an opportunity to establish the content validity of scores on an instrument and to improve the questions, format, and scales (Creswell, 2014, p. 179). The measuring instrument was piloted for a week, with a sample of eleven respondents with similarities to the "real" respondents. The reason for the pilot was to establish any flaws in the structure of the questionnaire with respect to the clarity of the questions, the appropriateness of the scales utilised and to determine whether the constructs were well measured for the context. The results of the pilot were available for a week before the launch of the final survey to allow for any amendments to the measuring instrument to be implemented.

The feedback that was received from two of the pilot respondents was that question nine in the questionnaire was unclear. As a result, the question was re-written from "Are you or were you a customer or supplier in a supply chain strategic alliance relationship?" to "In relation to the strategic alliance/collaboration you are or have been involved with, was your organisation's role that of a customer or supplier?"

4.8 Data gathering process

Zikmund (2003) explains that a survey as a data collection tool must describe what is happening regarding the business' activity. Therefore, it is important to ensure and understand that the survey may be utilised to collect both quantitative and qualitative data, which is possible thanks to the flexibility it offers in its design to provide descriptive, causal or exploratory data. A questionnaire, as indicated in Appendix A, was used as measurement instrument launched to respondents via email with a web-based link. The rationale for selecting a survey questionnaire was mainly to support the quick turnaround for data collection, using a cost-effective method of collecting data and using a controlled sample to represent a much broader population.

For this research, questionnaires were suitable because they are a good method of collecting data about the same items from a large number of respondents (Saunders & Lewis, 2012). The questionnaire comprised of a combination of questions, including categorical, ranked or list-type questions, as mentioned in section 4.6.

Prior to the final launch of the survey, the majority of the respondents were contacted to inform them that they were identified to take part in the survey and the background behind the survey was explained. This communication made it clear to the respondents that there would be an email request with a website link where they could complete the survey and that there would be regular follow-ups and reminders during the period of project data collection. This step in the process was critical in minimising the possibility of the email request being ignored or considered as a misdirected email.

The questionnaire was administered via email to all the respondents and included the web-based link through which the survey could be accessed. The time that was allowed for the responses to be complete was originally four weeks, followed with three weekly reminders to the respondents before the survey's closing date. The consent letter was included in the body of the email to give a brief background to the respondents about the research study and its authenticity, the structure of the questionnaire and its main sections and to provide an explanation of the measuring scales and their application. The progress of responses was monitored weekly on the Survey Monkey platform to ensure that there was no adverse deviation on response rate.

4.9 Data analysis

The data that was collected from the survey was scrutinised before analysis could be run so as to ensure that it was not contaminated by missing data points, inconclusive or incomplete responses. Thereafter, all the data was coded in Excel before it being transferred to IBM SPSS, a statistical analysis tool used for detailed testing and analysis of data. The choice and details of the tests depended on the quality of the collected data, therefore data analysis was concluded to present descriptive statistics, relationships and any other conclusive results.

The framing of data the analysis included the separation of control groups for failed and successful collaborations. The respective groupings results were aggregated and examined for differences by using independent groups' t-tests to test significant differences before relationships and associations were established between the control groups and other variables. Test for difference tests were also considered between the supplier group and customer group and associated analysis differences for more than two groups technique was applied.

Based on the proposed research framework (Figure 1), organisational culture is viewed as an independent variable, while the failure or success thereof is a dependent variable. For this reason, a multivariate analysis was employed to examine the relationships between organisational culture or its different layers and the outcome of the collaboration, whether it was successful or not depending, on the control group. The appropriate technique to use, in light of the categorical ranked data collected, was the Pearson's correlation to examine both the correlations of the various variables and the significance of the respective correlations.

There was an opportunity to test for significant associations between the group of participants and the outcome of the alliances, using unranked categorical data obtained. The appropriate test to apply was the chi-square test to test the null hypothesis and to determine whether there is no significant association between the group of participants and the outcome of the alliance.

The fact that the unit of analysis was supply chain collaboration at an organisational level, data was analysed at an organisational level as well. Due to the data being collected from individuals as representative of organisations, the aggregation of individual responses was performed at aggregated customer and supplier level. However, with aggregation comes the challenge of reliability and validity, therefore to maintain reliable and valid data results from analysis, variances of means at aggregated level were checked. High variability indicated that data analysis might be compromised and therefore the tests that could be performed were limited. Aggregation and heterogeneity of the population was also impacted by the response rate, given the modest sample size.

4.10 Validity and reliability

It can be noted that the use of surveys was not without limitations; hence it was necessary to make provision for errors that could occur due to the use of surveys for data collection. Appendix C is a representation of the tree diagram, which represents all the possible errors that were kept in mind and catered for in the study in order to keep the study's results reliable.

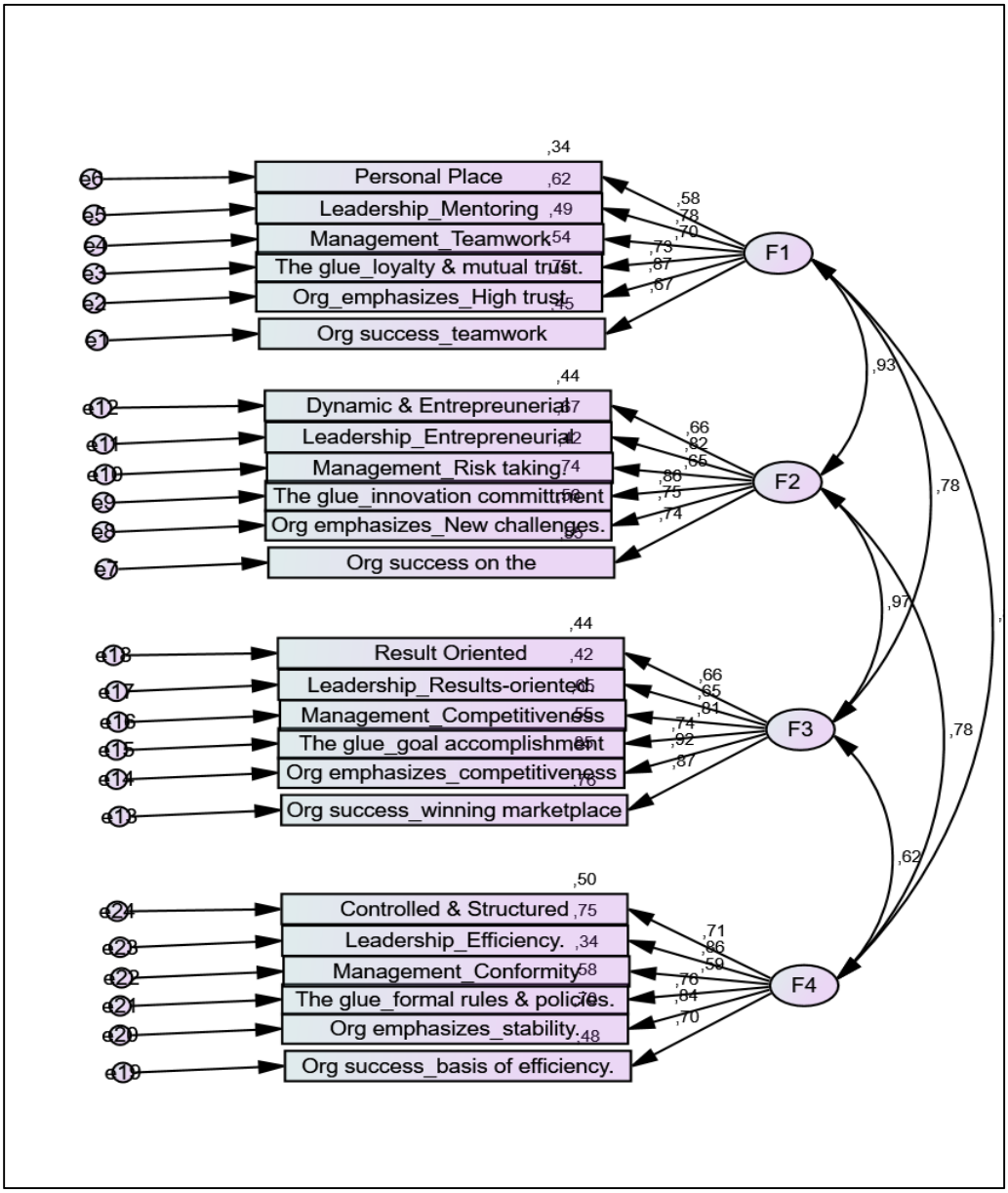
The total error is as a result of mainly two major errors, namely random sampling error and systematic error. A random sampling error's effects can be reduced by ensuring that adequate sample sizes are utilised for the study. All other errors, other than random sampling, are classified as systematic errors, also referred to as non-sampling errors, and are as a result of imperfections in the research study or the execution of the survey. To simplify the understanding of all possible errors leading to systematic errors, two main categories were defined: administrative errors and respondent errors. The questionnaire design was finalised with the aim of ensuring an adequately balanced questionnaire, which will encourage the participation of respondents with ease. Details of statistical tests performed are in chapter five.

4.10.1 Confirmatory factor analysis (CFA)

As mentioned in section 4.3 above, the OCAI measuring instrument used for the study is an established instrument with predetermined latent variables structure to measure four cultural dimensions. According to Hair, Black, Babin and Anderson (2010), it is good practice for the researcher to confirm the theory of the model to be used against the specific sample of the study as the instrument is often developed over time with different size samples. In the case of this study a confirmatory study was done from the path diagram of figure 3 below the model fit results of which are indicated in Appendix D.

The model comprised of four latent variable F1(Clan), F2(Adhocracy), F3 (Market) and F4 (Hierarchy). Each latent variable had six measured variables thus making a total of 24 measured variables for the model. To determine the good fit for the model there are limitations which must be considered and these are sample size, the number of measured variable, covariance loading factors and the statistical confidence levels. In the case of this study, due to the sample size smaller than 100, all covariances had to be above 0.6. (Hair, Black, Babin, & Anderson, 2010). Based on the path diagram of figure 3 above it can be seen that covariances are all above 0.6 except for variable "personal_place" which recorded 0.58.

Figure 3. CFA path diagram for testing model fit of the OCAI



The summary of the model fit results is shown in table 2 below. Based on the results summary, it can be concluded that for this study's sample data the model has a weak to moderate fit. The p value is lower than 0.05 and therefore renders the model not fit and the statistical results for GFI, CFI, TLI and RNI are all below the preferred threshold of 0.9 (Hair, Black, Babin, & Anderson, 2010). The sample size for the analysis was a major limitation and therefore the exploratory factor (EFA) analysis was recommended in order to derive the suitable latent factors suitable for this study.

Table 2. CFA model fit results

Statistic	N<250; 12< m<30 Recommended	N=94; m=24 Actual
p-value	<0.050	0.008
Goodness-of-Fit Index (GFI)	>0.9	0.728
Comparative Fit Index (CFI)	>0.9	0.413
Tucker Lewis Index (TLI)	>0.9	0.341
Relative Non-Centrality Index (RNI)	>0.9	0.089
Root Mean Square Error of Approximation (RMSEA)	>=0.5; <=0.8	0.05
N = Sample size m = measured variables		

4.10.2 Kaiser-Meyer-Olkin sampling adequacy

To test the validity of the dataset, a Kaiser-Meyer-Olkin (KMO) sampling adequacy test was performed at first. This test was done to ascertain if there was a need to proceed and perform principal component analysis, as well as factor analysis. The result of the KMO, as presented below in table 3, indicated a sampling adequacy of 0.823 and a Bartlett's significance of 0.00. which indicated that the dataset was adequate for performing factor analysis and that there was scope for reducing some data sets of less significance, with correlation of less than 0.3. According to Kaiser and Rice (1974), a value of 0.823 is meritorious.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin measure of sampling adequacy		0.823
Bartlett's test of sphericity	Approx. chi-square	1194.327
	df	276
	Sig.	0

4.10.3 Principal component analysis (PCA)

With analysis of PCA in SPSS, it could be explained that only 5 variables with eigen value of more than one represents a cumulative variance of up 65% which is statistically significant. This result confirmed what was anticipated in that from the basis CVF theoretical base used for developing the OCAI instruments, it is expected to have four constructs emerging from the dataset.

Although five principal components were identified, the factor analysis was re-run with a limitation placed on maximum number of components set at four in line with the four constructs of the OCAI instruments After running the test for four components, the results were recorded as in table 4 below. All cross factor loading below 0.3 were suppressed hence only significant factor loading above 0.3 are indicated in the table. (Hair, Black, Babin, & Anderson, 2010). However, as per Hair, et al. (2010) due to the study's sample size of 94, factor loadings of 0.6 and above will be considered statistically significant and any factor loadings below 0.6 have to be omitted.

Table 4. Principal component analysis (PCA) limited to four components

		Component			
Variable	**Variable Name**	**Adhocracy**	**Hierarchy**	**Market**	**Clan**
Q10.1	Personal Place	0.390			0.684
Q10.2	Dynamic & Entrepreneurial	0.683			
Q10.3	Result Oriented			0.712	
Q10.4	Controlled & Structured		0.838		
Q11.1	Leadership_Mentoring	0.653			
Q11.2	Leadership_Entrepreneurial	0.796			
Q11.3	Leadership_Results-oriented.			0.826	
Q12.4	Management_Conformity				0.812
Q13.1	The glue_loyalty & mutual trust.	0.378			0.736
Q13.2	The glue_innovation commitment	0.763	0.323		
Q13.3	The glue_goal accomplishment	0.371		0.723	
Q13.4	The glue_formal rules & policies.		0.850		
Q14.2	Org emphasizes_New challenges.	0.732			
Q15.2	Org success on the	0.620	0.345		
Q15.4	Org success_basis of efficiency.		0.570		

In order to streamline the cross loaded factors, areas of which indicated a difference of less than 0.5 and above statistically insignificant (Hair, Black, Babin, & Anderson, 2010) and if it was the case the factor which loaded the lowest between the two was eliminated. The resultant table from that is shown in table 5 below.

Table 5. Renamed components after PCA

Original Name	Renamed To	Variables
Component 1	Adhocracy	Q10.2; Q11.1; Q11.2; Q13.2, Q14.2; Q15.2
Component 2	Hierarchy	Q10.4; Q13.4; Q15.4
Component 3	Market	Q10.3; Q11.3; Q13.3
Component 4	Clan	Q10.1; Q12.4; Q13.1

4.10.4 Internal reliability of the instruments

The four renamed components, or latent variables, were tested using the Cronbach's reliability testing method to establish whether the instrument's variables offer adequate consistency. According to Cronbach (1951), a result with a Cronbach alpha of less than 0.7 must be discarded and a process of elimination must be followed to identify a variable that must be eliminated in order to increase the Cronbach alpha of the latent variable.

All renamed latent variables after testing reported a Cronbach alpha of greater than 0.7, with their respective Cronbach's alphas shown in Table 6.

Table 6.Cronbach's statistics for renamed latent variables

Newly named latent variable	Variables	Cronbach's Alpha
Adhocracy	Q10.2; Q11.1; Q11.2; Q13.2, Q14.2; Q15.2;	0.841
Hierarchy	Q10.4; Q13.4; Q15.4	0.728
Market	Q10.3; Q11.3; Q13.3;	0.725
Clan	Q10.1; Q12.4; Q13.1;	0.711

Although Cronbach's alpha for latent variable hierarchy could be improved further from 0.728 to 0.783 by deleting variable Q15.4, the option to omit Q15.4 was not exercised to obtain improved Cronbach's alpha of the hierarchy construct (Smith & Roodt, 2003). Omission of Q15.4 would have made a marginal difference to the consistency of hierarchy construct.

4.10.5 External reliability of the survey

4.11 Limitations

Although this study enjoyed an abundance of theories within the realm of organisational culture and associated theories around cultural leadership, it still met a few limitations partly due to the research methodology chosen, the time frame to complete the study and limited new theories that could be added.

Quantitative research methodology lends itself to strict requirements of the size of sample utilised for the analysis of any measured data. The size of the sample determined the number of tests that could be performed, and consequently, limited the depth of analysis that could be done. A small sample eliminates some of inferential analysis, which can be performed and limits the study to mostly descriptive statistics. In the case of this study, with 94 respondents, tests for differences may be limited, as the control groups do not have adequate data. In the case of this study, it was imperative that the response rate be high, otherwise the study's breadth of analysis would be limited.

The fact that the measuring instrument was somewhat modified may open itself to criticism about the validity and reliability of the data collected. Therefore, it was critical to ensure that the validity and reliability was tested first by piloting the instruments and thereafter confirming reliability with Cronbach's alpha for questions measured with the Likert scale. Additionally, the fact that individual responses were aggregated to be representative of organisational level analysis, cultural response bias correction was applied. This remedial action sought to identify outliers, which can then be excluded from the sample to be analysed.

4.12 Conclusion

Based the on the literature review of Chapter two and the hypotheses in Chapter three, the contents of this chapter were able to describe why a quantitative research methodology was used to collect data. The arguments supporting quantitative research methodology were supported, but the research design strategy approach was used, which translated into how sample size was estimated and what the actual sample was. The justification for choosing the OCAI instrument as the basis of the questionnaire was

explained and it was discussed to which the extent the validity and reliability of the dataset was obtained by the instrument.

It was also highlighted that although the sample size was not what was anticipated, the dataset for the extracted constructs would still be reliable to use for computing detailed statistical results. These are discussed in Chapter five, while establishing the links between the results and hypotheses of Chapter three.

5 Chapter five: Analysis of results

5.1 Introduction

In chapter four, an in-depth description of the research methodology was discussed including data collection and analysis techniques used. A critical part of the previous chapter was data validity and reliability determination as it is crucial towards envisaging statistical tests and analysis of chapter five. In this chapter details of statistical tests and results thereof are discussed. Most importantly, limitations and assumptions for each test are also discussed herein.

Chapter five presents a variety of statistical tests in the following logic; Firstly, by presenting the descriptive tests and inferential analysis for the entire data set. Thereafter, hypothesis specific tests, such correlations and regressions, are presented for each hypothesis. The analyses of the result are presented in this chapter, after which, Chapter six presents a detailed discussion of what the results mean with regards to each hypothesis.

5.2 Research results

The details of the variable coding and the types of variables used in the study are listed in the code book of Appendix E.

5.2.1 Missing data

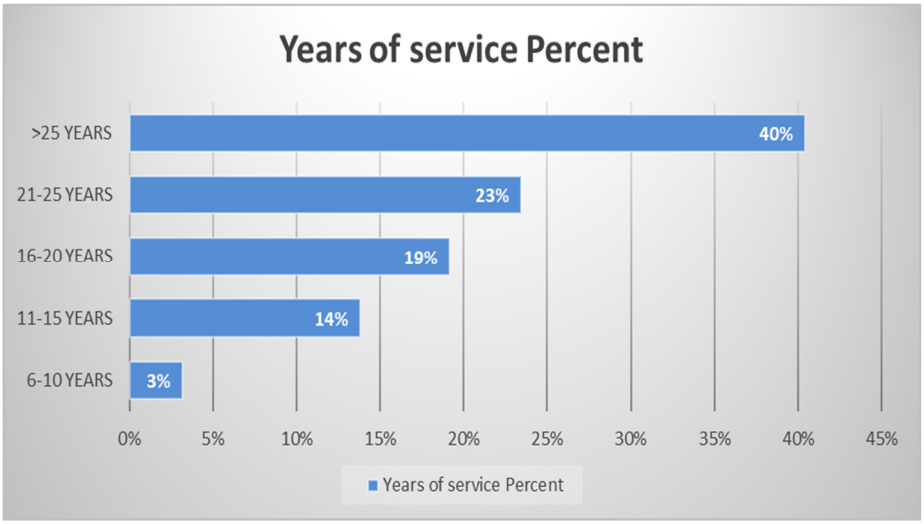
The data collected for respondent 43 and respondent 48 is missing on variables Q15.4 and variable Q12.3 respectively. The mean substitution method was applied in order to estimate the missing values. In the case of respondent 43, the mean of the observed values for variable Q15.4 was computed and resulted in a value of 1,77, which was used to replace the respective missing value. Similarly, for respondent 48, the mean value of the observed data for variable Q12.3 was computed and it produced a value of 1,903 to replace the respective missing value for this respondent.

As Schafer and Graham (2002) indicated, the mean substitution method may accurately predict the missing value, but it has its limitations in that it may distort estimated variances and correlations. In this case, however, such distortion is less likely, because only one value per respondent in different data sets was missing. The other reason for supporting the mean estimation method is that the replacement value for the missing value does not compromise the Cronbach's alpha to be less than 0.7, hence the estimation method is adequate (Schafer & Graham, 2002).

5.2.2 Years of full-time experience

The question asked the respondents to specify the period (in years) of the employment experience they have. Figure 4 below is a graphical representation of the results from 94 respondents. More than 80% of the respondents have more than 15 years' experience, whereas 40% of the respondents have more than 25 years of experience, 23% of respondents have between 21 and 25 years of experience and 19,1% of the 94 respondents have between 16 and 20 years of experience

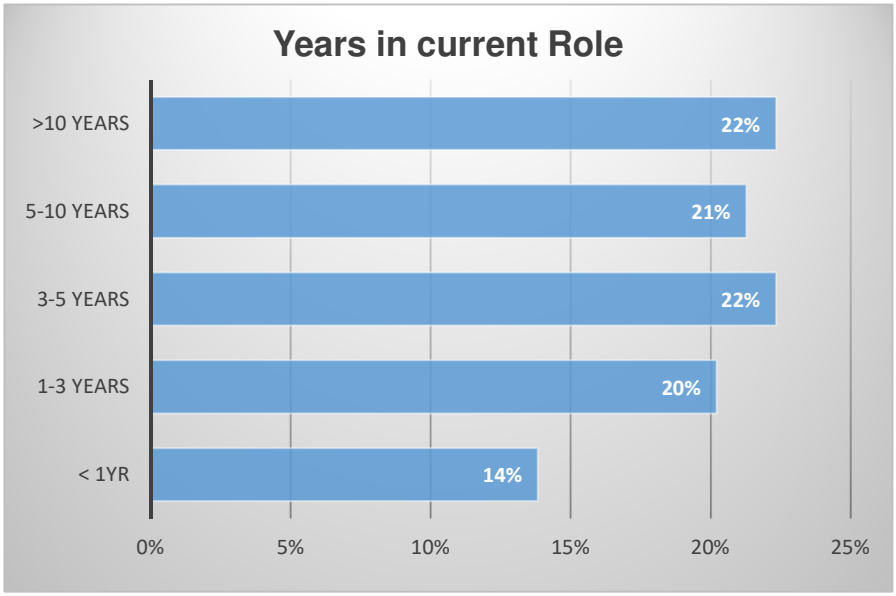
Figure 4: Years of respondent's employment service



5.2.3 Period of years in current role

The years in their current role differs from years of employment, as this is a proportion of the total years of employment. This question is indicative of limited experience in the current role of the respondents. Out of 94 responses, it can be seen from Figure 5 that there is equal distribution of respondents at about 20% in the four categories, between one year and greater than ten years. Only 14% of the respondents were in their current role for less than a year.

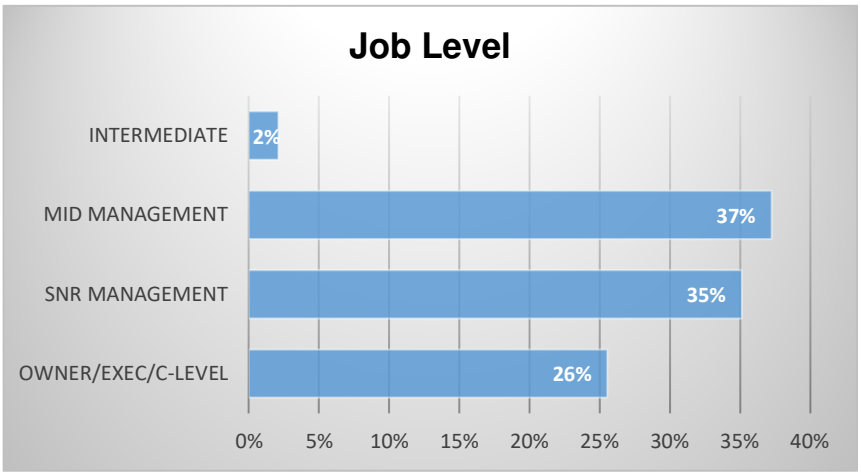
Figure 5: Years in current role



5.2.4 Job level

A very small percentage of two percent of the 94 respondents are at an intermediate job level or a level lower than middle management. Of the sample, 37% were middle managers and 35% were in senior management roles. The balance of 26% of the respondents was either executives or worked at C-level roles, as shown in Figure 6.

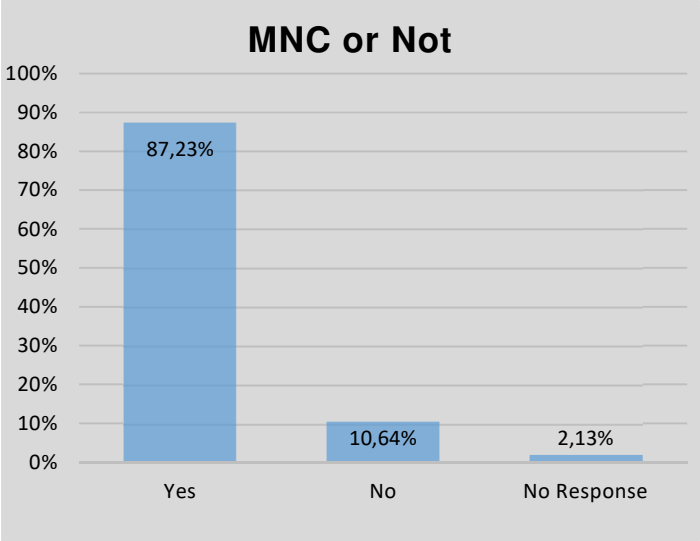
Figure 6: Respondent's job level



5.2.5 Is the organisation a multinational corporation (MNC) or not?

Of the 94 respondents, two respondents did not respond to the question. Therefore, only 92 responses were analysed. Out of a sample of 94 respondents, 87,23% of the respondents answered, "yes, their organisations are MNCs", while only 10,64% of the respondents' organisations are not MNCs. In Figure 7 below, it is clear that the two missing responses make up for the 2,13% of the entire sample.

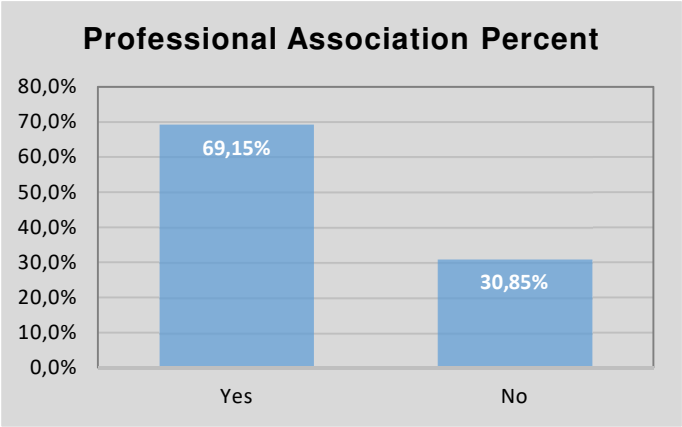
Figure 7: Respondent's organisation - a multinational corporation or not



5.2.6 Professional association

The question asked broadly whether the respondents were members of any professional association. From the 94 responses, 69,15% were members of professional associations and 30,85% of the respondents were not members of any professional association or organisation.

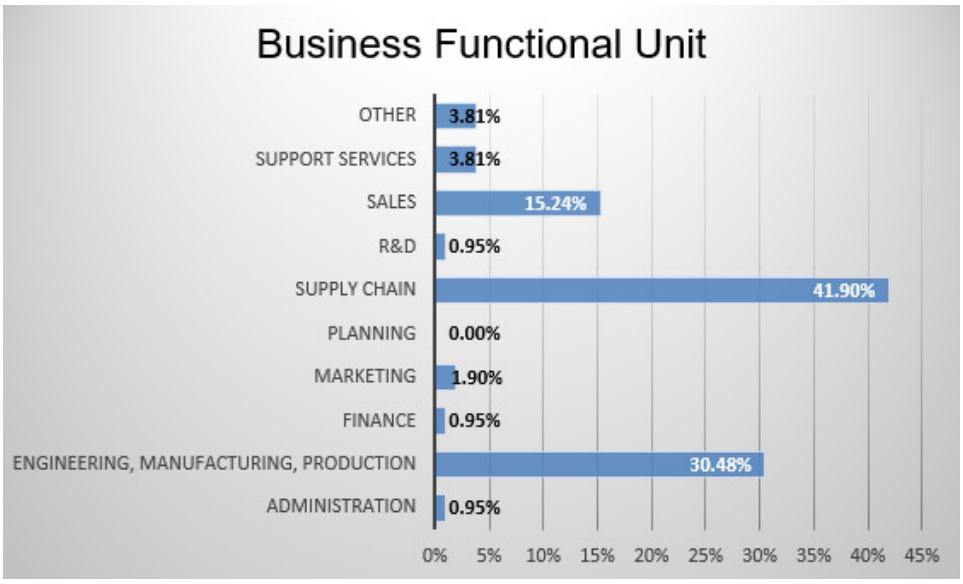
Figure 8: Professional association membership of respondents



5.2.7 Business functional unit representation

Organisations are structured in many different ways; however, they always have core functional units within them. Figure 9 below shows the results of the array of business units in which the 94 respondents primarily operate. The majority of the responses consisted of respondents stating that they work in the supply chain (36,17%), followed by respondents in the engineering, manufacturing or production units (34,04%) and thirdly, respondents from sales came to 15,96%. These three functional areas accounted for 86,17% of the responses with the balance made up by other functional units as indicated in Figure 9.

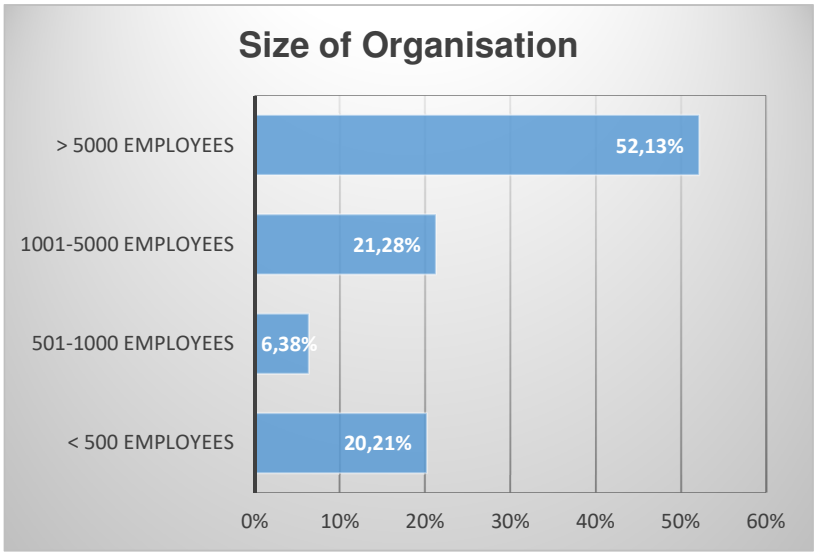
Figure 9: Business functional unit



5.2.8 Size of the organisation

In this section, the size of the organisation was measured as a function of the number of employees. Only four categories were provided, as indicated in Figure 10. From the 94 responses, 52,13% of respondents were working in relatively larger organisations with more than 5 000 employees

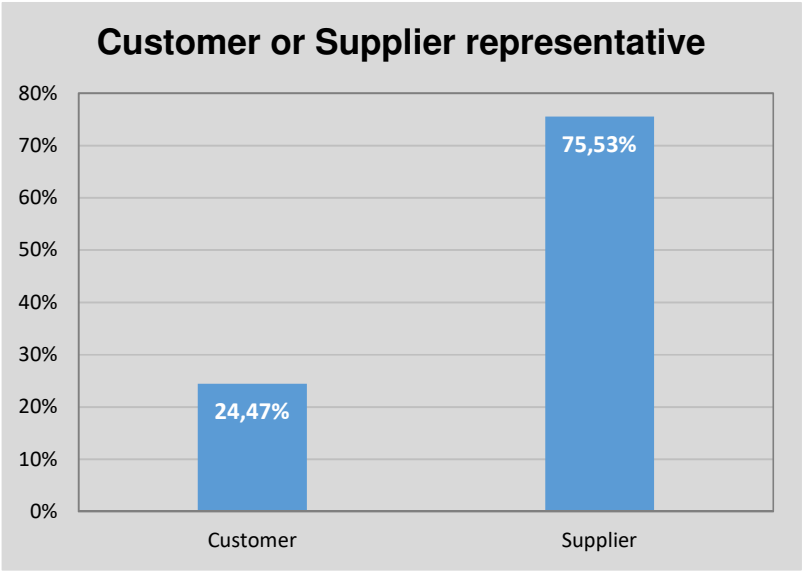
Figure 10: Size of organisation in terms of employees



5.2.9 Customer or supplier representative

As can be seen in Figure 11, 74,53% of the 94 respondents were supplier representatives and 24,47% were representatives of customer organisations.

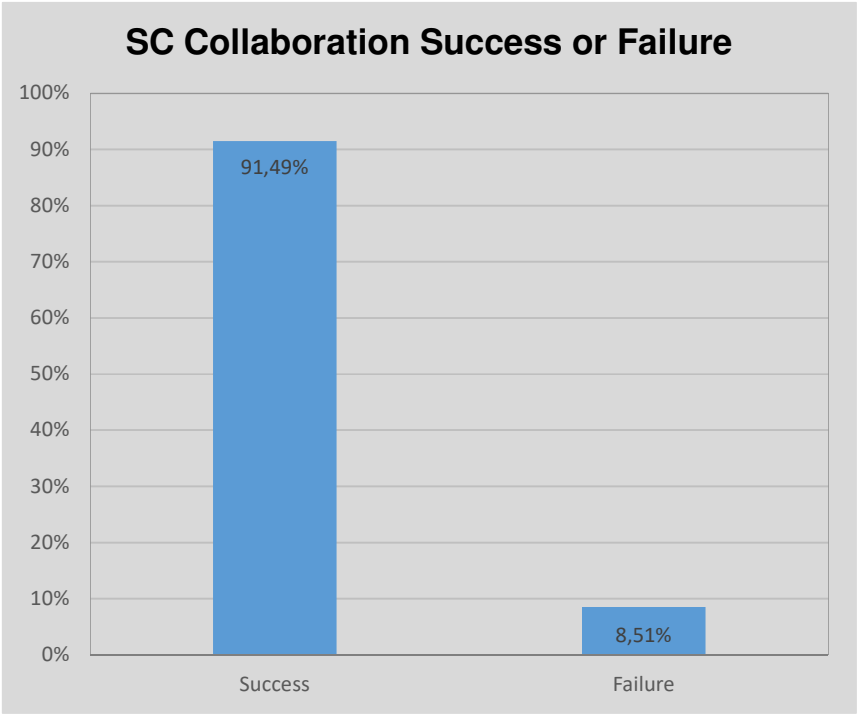
Figure 11: The percentage split of respondents between customers and suppliers



5.2.10 Is supply chain collaboration outcome a failure or success

An overwhelming majority of the 94 respondents (91,49%) indicated that the supply chain collaboration, which they are part of or have been a part of was successful. Only 8,51% of the sample believed that the partnerships failed. Figure 12 presents the graphical representation of the results for this question.

Figure 12: Percentage split between success outcome and failure outcome



5.3 Testing for normality

Under normal statistical circumstances, the distribution of data is assumed to be normal. For this reason, parametric tests would be performed to test for the independence of groups and the differences between groups.

The following normality tests were run to confirm the normality of data distribution:

- Normality across all four constructs
- Normality across the categorical and control variables

5.3.1 Normality across all the four culture constructs

Table 7 below represents an output of the normality tests for the data relating to the culture constructs in the organisation. By analysing the results for the test of normality, the significance value of the Shapiro-Wilk test was considered. All p-values were below

0.05 and therefore the result is significant and the null hypothesis that data is normally distributed can be rejected.

Table 7.Test of normality for data across the four culture constructs

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Clan	0.141	94	0.000	0.947	94	0.001
Market	0.133	94	0.000	0.932	94	0.000
Hierarchy	0.167	94	0.000	0.883	94	0.000
Adhocracy	0.135	94	0.000	0.948	94	0.001
a. Lilliefors Significance Correction						

5.3.2 Normality of data across the categorical data set

Table 8 is a representation of results for the frequencies, skewness and kurtosis results for all the categorical data sets. The observed variables with relatively high skewness are failure, success, “MNC or Not” and “customer or supplier” as their results was outside the skewness range of -1 to 1. The high values of kurtosis results for failure, success and “MNC or Not” confirm that the data distribution for these variables is much flatter compared to a normal distribution.

Table 8. Distribution, skewness and kurtosis for categorical and control variables

	Failure	Success	Years of service	Years in current role	Job level	MNC or Not	Professional association	Business unit	Size of Org.	Customer or supplier
Skewness	-3.022	3.022	-0.653	-0.126	-0.082	2.556	0.843	-0.154	-0.856	-1.207
Std. Error of Skewness	0.249	0.249	0.249	0.249	0.249	0.251	0.249	0.249	0.249	0.249
Kurtosis	7.288	7.288	-0.718	-1.186	-1.107	4.635	-1.318	-1.427	-0.868	-0.555
Std. Error of Kurtosis	0.493	0.493	0.493	0.493	0.493	0.498	0.493	0.493	0.493	0.493

5.4 Testing for independence

Table 9 below shows results of the Chi -Square test for the association between organisation representative status and the outcome of the supply chain collaboration. The null hypothesis (H_o) is that there is no dependency in the relationship between customer or supplier representatives and the success or failure of the collaboration.

Due to the results of the Pearson Chi-Square test, p>0,05 as it is recorded as P=0,410, which implies that the null hypothesis must be accepted. Before accepting the null hypothesis, the results also show that one cell had a value less than five, therefore for this small sample, and particularly for the customer group, the result of the Fisher exact test has to be interpreted.

Table 9. Chi-Square test between the customer and supplier categories.

Customer or supplier: Success or failure cross-tabulation					
			Success or failure		Total
			Success	Failure	
Customer or Supplier	Customer	Count	22	1	23
		Expected Count	21	2	23
	Supplier	Count	64	7	71
		Expected Count	65	6	71
Total		Count	86	8	94
		Expected Count	86	8	94

Chi-Square Tests					
	Value	df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	0.678 (a)	1	0.41		
Continuity Correction(b)	0.155	1	0.694		
Likelihood ratio	0.773	1	0.379		
Fisher's exact test				0.674	0.37
Linear-by-linear association	0.67	1	0.413		
No of valid cases	94				

a. 1 cell (25.0%) has expected count of less than 5. The minimum expected count is 1,96.

b. Computed only for a 2x2 table

Although the Fisher exact test is a non-parametric equivalent of the Pearson Chi Square, its p-value is also greater than 0,05. Therefore, there is no evidence of a relationship between the organisation's representative and outcome of the supply chain results. As recorded, the results are due to the randomness of the sample and confirms that the organisation's representative variable is independent from the supply chain collaboration outcome

5.5 Testing for differences using the Mann Whitney U Test

Non-parametric tests require association tests to be performed using ordinal data. This method was chosen to determine the probability of the difference occurring by chance between the two groups: customers and suppliers. The tests were performed on the premise that the identified constructs are tested against the two independent group variables: customers and suppliers.

5.5.1 Differences for clan culture

Figure 13: Differences for clan between customers and suppliers

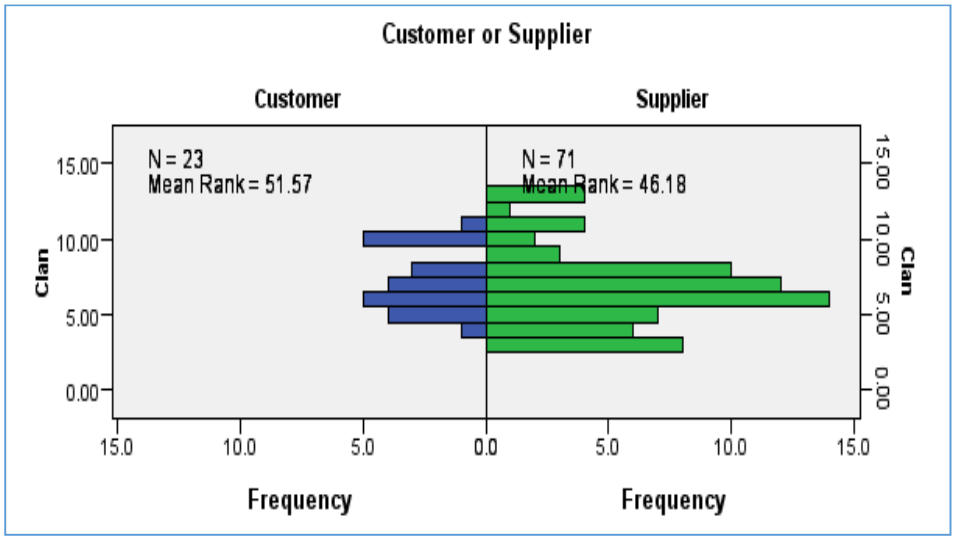
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Clan is the same across categories of Customer or Supplier.	Independent-Samples Mann-Whitney U Test	.406	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

According to Figure 13, the null hypothesis can be retained, as the p-value is more than 0,05 at 0,406, which is not statistically significant. This is supported by the frequencies histogram, as indicated in Figure 14. The frequencies for both customers and suppliers were relatively similar; therefore, the mean ranks responses were very similar at 51,57 and 46,18 for customers and suppliers respectively.

Figure 14: Distribution for clan between customers and supplier's category



5.5.2 Differences in market culture

Figure 15 below is a representation of the hypothesis test summary for market variables for both the customer and supplier groups.

Figure 15: Differences in market between the customers and suppliers

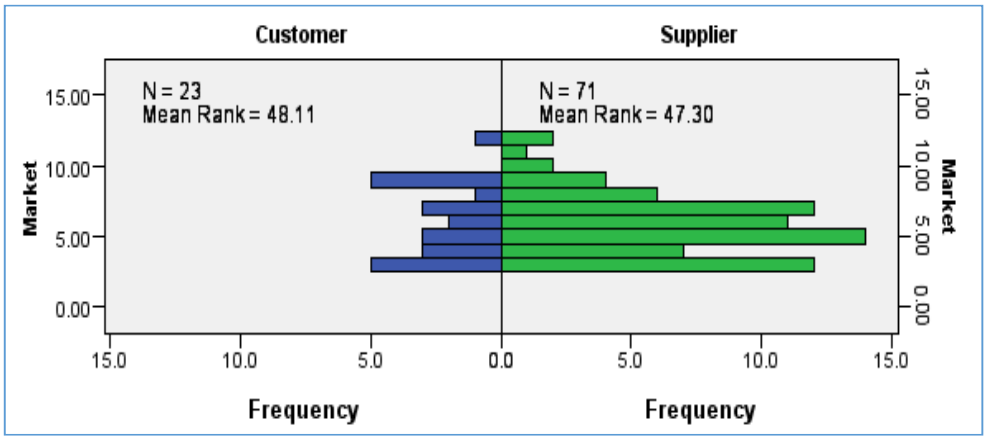
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Market is the same across categories of Customer or Supplier.	Independent-Samples Mann-Whitney U Test	.901	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

According Figure 15, the null hypothesis can be retained, as the p-value is more than 0,05 at 0,901, which is not significant. This analysis is supported by the frequencies histogram as indicated in figure 16 below.

Figure 16. Distribution for market between customers and suppliers.



Frequencies for both the customers and suppliers are relatively similar; therefore, the mean ranks responses were very similar at 48,11 and 47,30 for customers and suppliers respectively.

5.5.3 Differences for adhocracy

Figure 17 below is a representation of the hypothesis test summary for adhocracy variable.

Figure 17: Differences of adhocracy between customers and suppliers

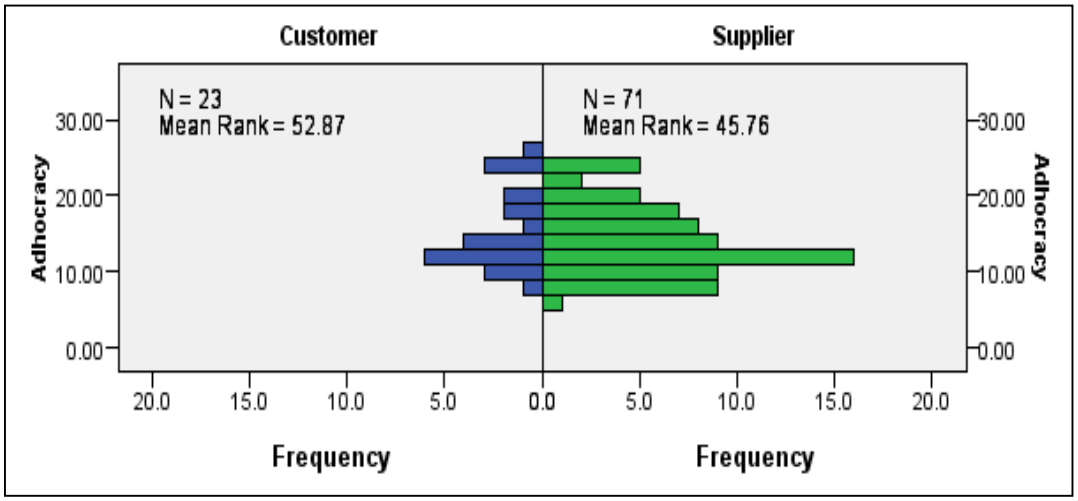
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Adhocracy is the same across categories of Customer or Supplier.	Independent-Samples Mann-Whitney U Test	.276	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

According Figure 17, the null hypothesis can be retained, as the p-value is more than 0,05 at 0,276, which is not significant. This analysis is supported by the frequencies histogram as indicated in Figure 18. Frequencies for both the customers and the suppliers are relatively similar; therefore, the mean ranks responses were very similar at 52,87 and 45,76 for customers and suppliers respectively.

Figure 18: Distribution for adhocracy between customers and suppliers



5.5.4 Differences for hierarchy culture

Figure 19 below is a representation of the hypothesis test summary for the competitiveness variable.

Figure 19: Differences for hierarchy between customers and suppliers

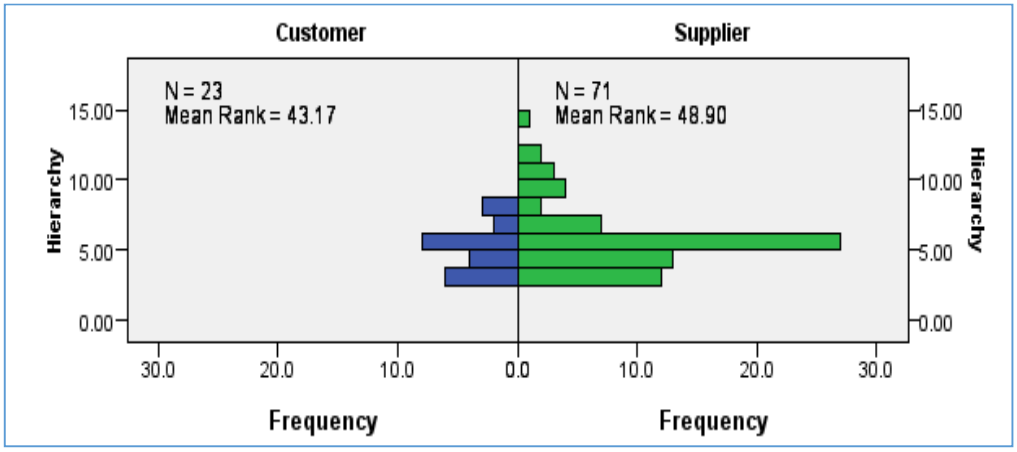
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Hierarchy is the same across categories of Customer or Supplier.	Independent-Samples Mann-Whitney U Test	.375	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

According to Figure 19, the null hypothesis can be retained, as the p-value is more than 0,05 at 0,375, which is not significant. This is supported by the frequencies histogram as indicated in Figure 20. Frequencies for both customers and suppliers are relatively similar; therefore, the mean ranks responses were very similar at 43,17 and 48,90 for customers and suppliers respectively.

Figure 20: Distribution for hierarchy between customers and supplier



5.5.5 Testing for independence for the control variable, MNC or not.

The independent samples test between the control variable, multinational corporations and non-multinational corporations, are shown in figure 21 and figure 22 below. Out of the four constructs that were tested, significant results are observed for the market culture with a p-value of 0,019, which indicates that the distribution of market culture is not the same between MNCs and non-MNCs.

Figure 21: Distribution of the four different cultures in MNCs and non-MNCs

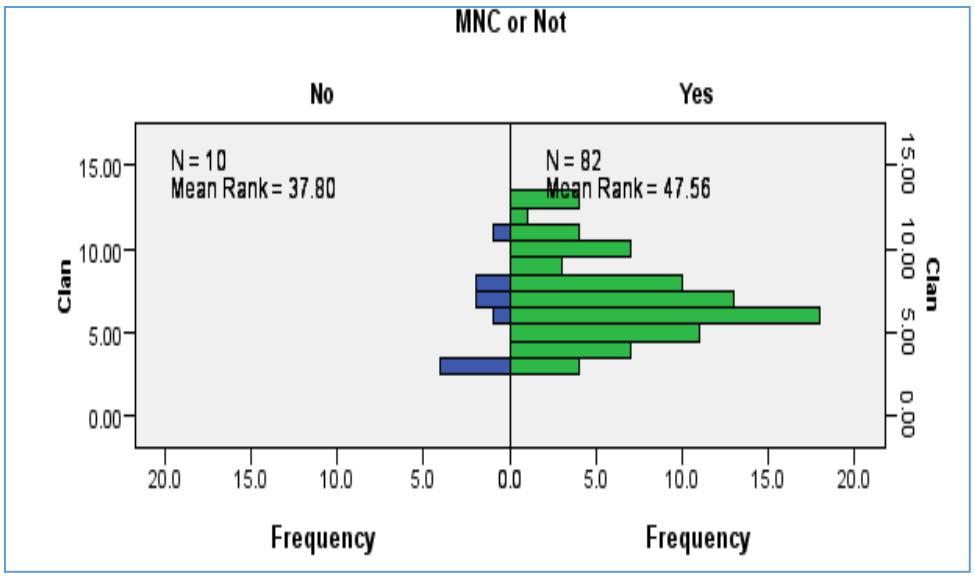
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Clan is the same across categories of MNC or Not.	Independent-Samples Mann-Whitney U Test	.271	Retain the null hypothesis.
2	The distribution of Market is the same across categories of MNC or Not.	Independent-Samples Mann-Whitney U Test	.019	Reject the null hypothesis.
3	The distribution of Hierarchy is the same across categories of MNC or Not.	Independent-Samples Mann-Whitney U Test	.488	Retain the null hypothesis.
4	The distribution of Adhocracy is the same across categories of MNC or Not.	Independent-Samples Mann-Whitney U Test	.130	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Further examination of the histogram of Figure 22 has indicated that market culture is more prevalent in the MNCs than in non-MNCs, which is supported by the mean ranks of 47,65 and 37,80 in MNCs and non-MNCs respectively.

Figure 22: Distribution of market culture in MNCs and non-MNCs



5.6 Results for hypothesis one

5.6.1 A specific subset of organisational culture influences the outcome of the supply chain collaboration

A Pearson correlation test was run to establish whether the outcome of the collaboration was associated with a particular culture type in the collaboration. Based on the correlation results in Table 10, the adhocracy culture type is the only latent variable, which highly correlates to the outcomes in comparison to the other three culture types. However, the correlation exists and the p-value is higher than 0,05, therefore the correlation is not significant. For clarity, the outcome variable was recoded into two separate variables, success and failure and thereafter a correlation test was repeated for each outcome against each culture type

Table 10. Correlations between culture construct and outcomes

	Clan	Market	Hierarchy	Adhocracy	Failure	Success
Clan	1					
Market	.206*	1				
Hierarchy	.232*	.270**	1			
Adhocracy	.429**	.451**	.217*	1		
Failure	-0.022	0.032	0.004	-0.139	1	
Success	0.022	-0.032	-0.004	0.139	-1.000**	1

*. Correlation is significant at the 0,05 level (2-tailed).
**. Correlation is significant at the 0,01 level (2-tailed).

.

The results of this process are shown in the Table 10. It is clear from the correlation results that the adhocracy-type cultures and the clan-type cultures have somewhat positive correlations towards successful outcomes. Although there is positive correlation, the level of statistical significance is low, because the p-value is greater than 0,05. However, market and hierarchical cultures are negatively correlated to the successful outcomes of the collaborations. It is clear from the correlations in table 8 that although statistically insignificant, adhocracy and clan constructs positively associated with the successful outcomes of the collaboration. To establish which variables are most likely to predict successful outcomes, a regression test was run with the dependent variable (being success outcome) and the independent latent variables being, adhocracy (Q10.2; Q11.1; Q11.2; Q13.2, Q14.2; Q15.2) and clan (Q10.1; Q12.4; Q13.1).

5.6.2 A choice between linear regression and logistic regression

It must be noted that multiple linear regression was chosen for this study with the dependent variable being collaboration outcome. The dependent variable was coded, it would seem that it is a categorical dichotomous viable which would give either success or failure as an outcome. However, outcome is measured relative to either financial or non-financial metrics agreed upon formulation of the collaboration which is not in scope for this study. Hence, linear regression was chosen over logistic regression for that reason that the dependent variable would not really represent a dichotomous requirement as required in logistic regression (Hair, Black, Babin, & Anderson, 2010) (Saunders, Lewis, & Thornhill, 2012).

Additionally, the categorical variables "years of service, "job level" and "years in current role" were also included as independent variables used to determine whether the respondents' level of experience influence the outcome. The results of the regression test are shown in Figure 23 below.

Figure 23: Regression analysis for predictability of outcome of collaboration

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.348[a]	.121	.081	.26889

a. Predictors: (Constant), Years in current role, Org emphasizes_New challenges., Dynamic & Entrepreunerial, Leadership_Entrepreneurial

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.884	4	.221	3.057	.021[b]
	Residual	6.435	89	.072		
	Total	7.319	93			

a. Dependent Variable: Success

b. Predictors: (Constant), Years in current role, Org emphasizes_New challenges., Dynamic & Entrepreunerial, Leadership_Entrepreneurial

Further to the correlations test, regression analysis was performed to examine the extent to which the correlating independent variables predict the outcome of the collaboration. Based on the regression results above, only the combination of the control variables "years in the role" and the independent variables of "Org Emphasis_New Challenges", "Dynamic & Entrepreneurial" and "Leadership_Entrepreunerial" contributed to an 8,1% variance in the predictability of the outcome.

Although the predictability is low at 8,1%, the statistic is significant as the p-value is less than 0,05. It is also clear from the results that with R=0,348, the predicted dependent variable is less closely correlated to the independent variables. It is clear from Figure 24 that the "Org Emphasises_New Challenges" variable is the most significant predictor of all four variables, because of its p-value, which is less than 0,05.

Figure 24: Regression coefficients for success predicted by clan and adhocracy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.107	.116		9.509	.000
	Dynamic & Entrepreunerial	.041	.032	.162	1.255	.213
	Leadership_Entrepreneurial	.055	.035	.228	1.566	.121
	Org emphasizes_New challenges.	-.086	.036	-.303	-2.418	.018
	Years in current role	-.028	.021	-.134	-1.307	.195

a. Dependent Variable: Success

5.7 Results for hypothesis two

5.7.1 Influence of hierarchical culture between participating organisations impedes the success of the collaboration

The correlation results in Table 10 above indicate a negative association between successful outcomes and the hierarchical and market culture types. Although negative correlation is indicated, the statistic is not significant as the p-value is greater than 0,05.

Figure 25: Hierarchy's effect on failure of collaboration regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.251[a]	.063	.043	.27451

a. Predictors: (Constant), Years in current role, Job Level

In order to ascertain if there were any of the variables within the constructs in a hierarchy and market culture, which could predict the failure outcome, a regression test was performed as shown in Figure 25. It is clear from the regression test that with an R-value of 0,251, there is a moderately low correlation between the outcome and the independent variables predicted (Saunders & Lewis, 2012). All the variables had to be eliminated from the regression and only the control variables "Years in role" and "Job Level" explained an insignificant 4,3% variability in the outcome.

Figure 26: Regression model fit for failure outcome predicted by hierarchy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.462	2	.231	3.065	.051[b]
	Residual	6.857	91	.075		
	Total	7.319	93			

a. Dependent Variable: Failure

b. Predictors: (Constant), Years in current role, Job Level

As seen in Figure 26 above, the regression model chosen, although it is the closest to predicting outcomes of the dependent variable, is not the best fit. This conclusion is supported by a p-value that is above 0,05. Therefore, the results of this regression model were discarded completely.

5.7.2 Results of hierarchal clan moderated with leadership

The implication of the model above is based purely on hierarchical culture without the impact of enabling potential of leadership within the collaboration. Further inspection of the model with addition of different types of leadership introduced was tested and the results are shown in figure 27 below.

Figure 27. Regression model for hierarchy moderated with leadership

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315[a]	.099	.069	.27062

a. Predictors: (Constant), Org success_basis of efficiency., Job Level, LeadEfficient_Hierarchy

It is clear that the model has improved by 10% in terms of probability of predictability of the outcome with R recorded at 0.315 from 0.251. Close to 7% of variability of the outcome can be explained by the job level of the participants, the organisation focuses on efficiency and efficiency based leadership in a strongly hierarchical organisation.

Figure 28. Regression model fit and coefficients for moderated hierarchy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.728	3	.243	3.314	.024[b]
	Residual	6.591	90	.073		
	Total	7.319	93			

a. Dependent Variable: Failure

b. Predictors: (Constant), Org success_basis of efficiency., Job Level, LeadEfficient_Hierarchy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.048	.106		19.247	.000
	Job Level	-.074	.035	-.221	-2.135	.035
	LeadEfficient_Hierarchy	-.010	.004	-.365	-2.635	.010
	Org success_basis of efficiency.	.088	.045	.265	1.954	.054

a. Dependent Variable: Failure

It is also clear that the independent variable as included in the model allows the model to be considered fit for prediction at the ANOVA p-value of 0.024, for p,0.05. Based on the unstandardised β coefficients, job level and efficiency based leadership are negatively proportional to the failure outcome of collaboration at β=-0.074 and β=-0.010 respectively. One of key category variable which loaded under the latent hierarchy culture, basis of organisation success on efficiency, is positively correlated with failure outcome.

Although relatively low β values of the independent variables as shown in Figure 28 above were recorded, job level and efficiency based leadership are of statistical significance at $p<0.05$ as they recorded p-values of 0.035 and 0.10 respectively.

5.8 Results for hypothesis three

5.8.1 Cultural leadership orientation reduces the organisational culture distance between supply chain collaboration partners

It is hypothesised that organisational culture in isolation will not explain the outcomes of a supply chain collaboration. Hence a need to test the impact of leadership in both cases of failed collaborations and in those that were deemed successful. Firstly, the descriptive tests were performed to examine the normality of the leadership variables between groups of failed collaborations and successful collaborations. Table 11 below shows the results of the descriptive for statistics test between the group of failed collaborations and those that succeeded.

The group of respondents from successful collaborations ranked all four leadership variables relatively equally, thereby indicating a notion of agreeing with leadership aspects of the organisations in the supply collaborations in order to test the exact impact thereof. As for the group from failed collaborations, although the sample was very small with only eight of the 94 respondents, it would seem that all leadership variables were ranked similarly to the other group except for entrepreneurial leadership variable (question Q11.2).

Table 11. Normality, skewness and kurtosis for the leadership variables

Statistics						
Success o Failure			Leadership is is Mentoring	Leadership is entrepreneurial	Leadership is results-oriented.	Leadership _efficiency.
Success	N	Valid	86	86	86	86
		Missing	0	0	0	0
	Mean		2.15	2.52	2.16	2.02
	Std. Deviation		1.035	1.124	1.094	0.945
	Skewness		0.928	0.475	0.772	0.637
	Std. Error of		0.260	0.260	0.260	0.260
	Kurtosis		0.246	-0.653	-0.278	-0.459
	Std. Error of Kurtosis		0.514	0.514	0.514	0.514
Failure	N	Valid	8	8	8	8
		Missing	0	0	0	0
	Mean		2.13	3.25	2.00	2.75
	Std. Deviation		0.991	1.488	1.069	1.165
	Skewness		0.862	0.477	0.935	-0.090
	Std. Error of		0.752	0.752	0.752	0.752
	Kurtosis		0.840	-2.249	0.350	-1.613
	Std. Error of Kurtosis		1.481	1.481	1.481	1.481

Based on the correlation results of Table 12 below, mentoring-type leadership is positively correlated with entrepreneurial leadership and this correlation is significant at a p-value of 0,01. However, Leadership_Efficiency variable indicates a significant positive correlation with success outcome and a significant negative correlation of -0.208 with failure outcome. Although the correlation is significantly low, the statistic is significant at p -value of 0.05.

Table 12. Correlations between leadership, culture and outcomes

Correlations										
	Success o Failure	Leadership_ Mentoring	Leadership _Entreprene urial	Leadership _Results-oriented.	Leadership _Efficiency.	Clan	Market	Hierarchy	Adhocracy	Leadership
Success o Failure	1									
Leadership _Mentoring	-0.007	1								
Leadership _Entreprene urial	0.175	.564**	1							
Leadership _Results-oriented.	-0.042	0.192	0.185	1						
Leadership _Efficiency.	.208*	.501**	.482**	.210*	1					
Clan	0.022	.369**	.292**	0.132	.341**	1				
Market	-0.032	.363**	.372**	.833**	.323**	.206*	1			
Hierarchy	-0.004	0.184	0.020	0.177	.460**	.232*	.270**	1		
Adhocracy	0.139	.738**	.823**	.231*	.629**	.429**	.451**	.217*	1	
Leadership	0.153	.832**	.848**	.237*	.787**	.403**	.429**	.253*	.893**	1
*. Correlation is significant at the 0.05 level (2-tailed).										
**. Correlation is significant at the 0.01 level (2-tailed).										

5.8.2 Moderated correlations

The leadership variable was computed by combining all the leadership variables, Q11.1, Q11.2, Q11.3 and Q11.4, and then transforming them into one leadership variable. The leadership variable was then used as a moderator for each culture type and the resultant moderated variables were then tested for correlation against the dependent variables of failure and success. The outcomes of these tests are shown in Table 13 below.

Table 13. Correlations between the outcome and moderated culture types

	Failure	Success	Leadership _Clan	Leadership _Market	Leadership _Hierarchy	Leadership_ Adhocracy
Failure	1					
Success	-1.000**	1				
Leadership_ Clan	-0.094	0.094	1			
Leadership_ Market	-0.068	0.068	.699**	1		
Leadership_ Hierarchy	-0.108	0.108	.695**	.715**	1	.
Leadership_ Adhocracy	-0.156	0.156	.796**	.824**	.710**	1
**Correlation is significant at the 0,01 level (2-tailed).						

There is evidence of multicollinearity between the independent moderated variables and Leadership_Adhocracy, which has the most collinearities with three other independent variables. These findings indicate high, positive correlations that are statistically significant at a p-value of 0,01.

5.8.3 The moderating effect of leadership

Leadership was included in the regression model of figure 23 to test its moderating effects on adhocracy culture. For the purpose of the test, effects the four different types of leadership were used as moderators against the adhocracy culture but only efficient based leadership produced meaningful moderating effects. The moderating effect model results are shown in figure 30 below.

Figure 29. Enhanced regression model including leadership as a moderator

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.387[a]	.150	.122	.26292

a. Predictors: (Constant), Org emphasizes_New challenges., Job Level, LeadEfficient_Adhocracy

It can be seen from regression summary output in figure 29 that introduction of leadership increased predictability to 12.2% from 8.1% as was the case as indicated in the model of figure 23. The enhanced model of figure 30 is deemed fit for prediction as indicated in the results of figure 30 below whereby ANOVA p-value is well below 0.05. It is also clear that the unstandardised beta coefficients result confirm a positive proportionality between success outcome and job level and efficiency based leadership respectively. However, the beta coefficient result for job level is insignificant at p-value of 0.154, p,0.05.

Figure 30. Model fit and coefficients for leadership moderated regression model

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.098	3	.366	5.293	.002[b]
	Residual	6.221	90	.069		
	Total	7.319	93			

a. Dependent Variable: Success

b. Predictors: (Constant), Org emphasizes_New challenges., Job Level, LeadEfficient_Adhocracy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.015	.100		10.142	.000
	Job Level	.047	.033	.141	1.436	.154
	LeadEfficient_Adhocracy	.005	.001	.429	3.514	.001
	Org emphasizes_New challenges.	-.092	.035	-.324	-2.643	.010

a. Dependent Variable: Success

5.8.4 Conclusion

A thorough analysis of all results was presented in this chapter with a distinction made between demographics results, test for differences, test for independence and specific tests for each of the three hypotheses. Analysis of the test result was standardised at significance levels of $p<0.05$ in order for the higher accuracy to be ascertained. However, stricter significance levels lend the results to introduction of type II errors due to retention of hypotheses which may have to be rejected (Blaike, 2003).

The details obtained from the results are sufficient to carry the analysis into further discussions and delineation of findings from the results. In the next chapter each set of the results will be discussed in detail, findings will be elevated and implications for practical applications will be suggested.

6 Chapter six: Discussion and findings

6.1 Introduction

The preceding chapter analysed the survey's results whereby the first set of results looked at the demographic statistics that mostly consisted of categorical data and some control variables. The second set of results focused on the distribution of data against the normal distribution, skewness and kurtosis in some cases. The last part of the data analysis process was specific for hypotheses testing, whereby specific tests were conducted for each of the three hypotheses of the study.

The results presented in the previous chapter set the tone of the discussion for this chapter. The discussion of the results in this chapter starts with an overall discussion of the demographic results and the impact demographics have on the study. The second part of the discussion details the impact of data distribution, skewness and kurtosis. In conclusion of the discussion, the final part of the chapter is a detailed discussion of the three hypotheses' results, findings and implications.

6.2 Discussion of demographics

The sample of the study consisted of 94 respondents out of an anticipated 119. The respondents formed a diverse group in terms of years of employment service, job level in their current role, years of service in their current role and their professional association membership. Only 2% of the respondents were in job roles that were lower than managerial roles, 26% of the respondents were in executive management roles, 35% were in senior management roles and the remaining 37% were in middle management roles.

From a work experience and professional point of view, the calibre of the respondents was rather high as they were all well-versed and able to respond objectively to the survey. The respondents were all professionals in their employment, particularly when considering the fact that 97% of the respondents have been employed for more than ten years and were in managerial positions that require decision-making abilities. Even the 3% of respondents who had less than ten years work experience, had at least more than five years of working experience.

As far as the organisation mix is concerned, 52.13% of the respondents were from fairly large organisations of more than 5000 employees. The second largest pool of respondents was a total of 21.28% who came from medium to large organisations of between 1001 and 5000 employees. The third largest pool of respondents came from small organisations of less than 500 employees and made up 20.21% of responses, with the remaining 6.38% made up by the small to medium sized organisations of 501 to 1000 employees.

The diversity of respondents was further emphasized by the different business unit function which respondents work in. A total of 34 respondents were from the supply chain section, 32 from engineering and manufacturing and the remaining 12 were respondents from other sectors, such as finance, marketing, R&D and support services. The respondents were also asked to indicate whether their organisation was a multinational corporation (MNC) or not.

Two of the 94 respondents did not complete the answer to the question, whereas 82 of the respondents were from MNCs and ten were from non-MNC organisations. This question was critical to the survey, as it also gave an idea of which respondents have been exposed to multiple cultures and have experience the effects of human resource management strategies and senior management orientation (Taylor, Levy, Boyacigiller & Beechler, 2008). More often than not, and as posited by Taylor, et al. (2008), external adaptation is more crucial for MNCs than domestic organisations as MNCs are exposed to more complexity and dynamism in a global environment.

6.3 Results for the normality of data

A test for normality was divided into two. Firstly, normality was tested for the main culture constructs separately. The second part for test of normality relates to categorical data which was used mostly as control variables in some of the regression tests.

6.3.1 Discussion of normality results for culture constructs

The normality tests for culture constructs was done for each construct and the results of the Shapiro-Wilk test revealed that the data was not normally distributed. The statistic for each of the constructs was significant as the p-values for each construct was well below 0.05 as indicated in Table 7. Therefore, the null hypothesis that the culture

constructs are normally distributed had to be rejected for all four constructs as the response values were not normally distributed.

6.3.2 Discussion of normality results for data across categorical data set

The observations from the results were similar to that of the results for the culture constructs and this was the case for each variable that was tested. All the categorical data results were statistically significant, according to Shapiro-Wilk tests as all p-values were significantly lower than 0.05. Therefore, it was clear that the null hypothesis that stated that the data set would be normally distributed had to be rejected as the data set responses were not according to a normal distribution.

In addition to the Shapiro-Wilk test, the test for skewness and kurtosis was performed to establish to which extremes the distribution curve was lying. Among the observed variables, the very highly skewed variables were failure, success "MNC or Not" and "customer or supplier", because of their results that were outside the skewness range of -1 to 1.

The kurtosis results on the other hand confirmed that the results for failure, success and "MNC or Not" were showing high values that were indicative that data distribution was much flatter compared to a normal distribution. The skewness of data for outcome variable was inclined to the success outcome thus indicating a higher success rate than failure contrary to findings by Fawcett, et al (2008) that there were more failures prevalent. Data for the type of organisation was skewed towards MNCs, thus indicating that more MNCs are participating in supply chain collaborations than local organisations.

6.3.3 Control groups and the independence of data

The categorical data for the two groups required a non-parametric cross-tabulation test to be performed. The result of the Pearson Chi-Square test for groups independence at $P<0.05$, was recorded as $P=0.410$, which implies that the null hypothesis must be accepted. Before accepting the null hypothesis, the results also show that one cell has a value less than five, therefore, the result of the Fisher Exact Test has to be interpreted. Although the Fisher Exact Test is a non-parametric equivalent of the Pearson Chi Square, its p-value is also greater than 0.05.

Therefore, there is no evidence of a correlating relationship between a customer or supplier and the success or failure outcome of the supply chain. The results, as recorded, are due to the randomness of the sample and confirm that the organisation representative status in the collaboration, whether being a customer or a supplier, is independent from the supply chain collaboration outcome This level of results suggested that there was another association or relationship, which had to be investigated over and above the affiliation to being a customer or supplier, which is exactly what the hypotheses aimed to reveal.

6.3.4 The differences in data sets between customers and suppliers

The test for differences was performed for four constructs across the control groups of customers and suppliers. The idea of the test was to determine whether there are culture differences that occur by chance between the two groups. The Mann Whitney U test was applied for all the instances of each construct, because of non-normal distribution, as ascertained in section 6.3.1 above.

The results for the all culture constructs indicate a non-significant result with p-values of 0.406; 0.901; 0.276 and 0.375 for clan, market, adhocracy and hierarchy culture, which suggests that the distribution of the data between the customers and suppliers is the same. This implies that customers equally view or respond to the all four culture types in the same way as the suppliers. Therefore, their view and importance of the different cultures are equally important between the two groups in the supply chain collaboration irrespective of whether the members of the collaboration are from the supplier or the customer group.

6.3.5 The difference between MNCs and non-MNCs

The test for differences was repeated for the four cultural type constructs across the control groups of MNCs and non-MNCs. The idea of the test was to determine if there would be differences between the two groups occurring by chance and if the views of the respondents in the different types of organisations would be as a result of their exposure with respect to global connectedness (in MNCs particularly). The Mann Whitney U test was employed for all the instances of each construct, because of non-normal distribution, as ascertained in section 6.3.1 above.

The results for three of the four culture constructs indicated a non-significant result with p-values of 0.271; 0.488 and 0.130 for clan, hierarchy and adhocracy culture respectively, which therefore suggests that the distribution of data between the MNCs and non-MNCs is the same. This implies that respondents from MNCs equally view or respond to these three culture types in the same way as the respondents from non-MNCs do.

However, a significant statistic was obtained for the market culture, which had a p-value of 0.19 which indicates that the distribution of data across the MNCs and non-MNCs is not the same. Looking at the mean rank data between the two groups, it is clear that with the mean rank of 47.56 for MNCs against that of 37.80 for non-MNCs, the respondents from the MNCs group are much more inclined to the market culture.

As Taylor, et al. (2008) indicated, it can be inferred that that MNCs often have to adapt to external dynamism more than local organisations in order to remain competitive. According to CVF, market culture is more externally focussed and competitive in nature at MNCs as they are exposed to more global market dynamics than their local peers (Cameron & Quinn, Diagnosing and changing organizational culture - Based on competing values framework, 2011).

6.4 Discussion of hypothesis one

6.4.1 How the organisational culture subset affects a supply chain collaboration's outcome

The relationship between the subset of the specific organisational culture and its impact on the outcome of the supply chain collaboration was tested based on the CVF, which highlights that in an organisation four main cultural dimensions exist, namely: clan, adhocracy, market and hierarchy culture types. In order to test which of these cultures are most likely to influence the existence and performance of a collaboration, correlation tests were run to determine the association between the four culture types and outcome of the collaboration.

It is clear from the correlation results that there is a definite inter-correlation between the cultures themselves, which confirms what Cameron and Quinn (2011) posited. However, it is quite important to note what impact the co-existence of the cultures might have on the performance of a team or a collaboration. The results clearly indicate a moderate to strong correlation between adhocracy culture and market culture, which makes sense since both are more externally focussed and competitively-oriented. On the other hand, a weak, but significant correlation of 0.27 was reported between clan and hierarchy cultures at a p-value of 0.01. A weak, but significant correlation of 0.217 was also reported between the market and hierarchy cultures with a p-value of 0.05.

Based on these results, two arguments are raised. Firstly, the co-existence of cultures in collaborations introduces complexities and possible conflicting views within the teams and these complexities have to be carefully managed in order for cohesiveness to be achieved. This argument is also supported by Cadden, et al. (2013) who posited that the compatibility of cultural dimensions between collaboration partners tends to increase the probability of achieving successful outcomes in the collaborating efforts.

Secondly, it can be argued that the internally-focussed and controlling nature associated with both the clan and hierarchy culture, together with their co-existence with adhocracy culture can be prove to be difficult and therefore may impede the performance of the collaboration. This implies that collaboration partners ought to have minimal cultural clashes in order to increase the chances of success for a collaboration. This observation is also supported by the work of Blome, et al. (2014), in which they found that the misalignment of collaboration partner profiles negatively impacts on the outcome and performance of the collaboration.

Furthermore, it was clear from the correlation results than none of the four culture types indicated a strong correlation relationship directly with either a failure outcome or a success outcome of the collaboration. However, adhocracy and clan culture were the two culture types that had a moderate to weak, but positively-correlated relationships with a success outcome of the collaboration at a correlation of 0.139 and 0.022 respectively, but both correlation results were statistically insignificant at $p<0.05$. Likewise, a much weaker to none negative relationship was observed between the success outcome and hierarchy culture, as well as between success and market culture.

6.4.2 Predictors of a successful collaboration outcome

Although the relationship and correlation between the different outcomes of a collaboration and the different culture types was found to be moderate to weak. A regression analysis was performed to ascertain which of the underlying categories of culture variables explained the variability and predictability of either the success or failure outcome of a collaboration.

In the case of the success outcome, the recoded success variable was the dependent variable with the main independent variable being the clan and adhocracy culture constructs. Although various control variables relating to experience were included in the multiple regression model, only the years of the participants' work experience seemed to have an impact on the overall variability of the model. The outcome of the regression model in Figure 23 indicated that based on the R value of 0.348, that the ultimate independent variables in the model had a weak to moderate predictability of the outcome. Ultimately, only the adhocracy culture category variables, entrepreneurial leadership and organisation's emphasis on new challenges, combined with the years of the participants' service in a functional role explained the maximum of 8.1% of variability of the success outcome, which was reported by an adjusted R square of 0.081.

Although the model could explain only 8.1% of the predictability, it was found to be a valid result based on the fact that the output of the test confirmed that the model was fit for predictability with a p-value of 0.021 at $P<0.05$. Upon further inspection of the results, looking at standardised coefficients (β) and their significance, it was ascertained that the most significant coefficient which better predicts the success outcome is an organisation's emphasis on new challenges. The recorded β for emphasis on new challenges was -0.086 at a p-value of 0.018, which implies a statistically significant result at $p<0.05$

The implication of this set of results is that although the correlation between the clan and adhocracy cultures and the success outcome of the collaboration is weak, it is clear that based on the predictability results, only the adhocracy culture is more likely a predictor of the successful outcome of the collaboration. Therefore, it can be argued that the collaboration may have four different cultures in its makeup, the chances of having a successful outcome in the collaboration is high if an adhocracy culture is nurtured the most.

According to Sambasivan and Yen (2010), the nature of an adhocracy culture is such that it promotes openness and innovation. Sambasivan and Yen (2010) found that organisations that are more orientated towards innovation have a greater chance of achieving and creating higher value. This arguments supports the hypothesis that in a collaboration with different cultural dimensions, there will always be a dominant culture, which is well-developed and as such, if it is well-nurtured it will lead to a successful outcome for the collaboration.

Although this study shows adhocracy culture as a more likely predictor of success in the collaboration, the results may still not be generalised to the greater population of supply chain collaborations due to the relatively small sample size that was used. However, the results of this study can be expanded on by running a similar study with a much bigger sample over a longer period. According to Schneider, et al. (2013), the beliefs and values associated with a clan culture are a trusting membership in the organisation and collaboration respectively, therefore it would seem that this culture would come out pronounced as one of the most significant predictors of a successful supply chain collaboration. However, the extensiveness of the results are limited, therefore extending the study to a much bigger sample might offer more clarity.

6.4.3 Predictors of the failure outcome of the collaboration

In as far as the failure outcome of the collaboration is concerned, the correlation results provided in Table 10 indicate a positive, but weak to none relationship between failure and hierarchy. Similarly, the results indicate a positive, but very weak relationship between market culture and a failure outcome of the collaboration.

Based on these results, there was no need to test any predictability of the failure outcome by the hierarchy latent variable or any of its core variables. The failure outcome as predicted by market culture variables, being result-oriented entity, result-oriented leadership and goal accomplishment as the glue for the entity the model had to be discarded due to the ANOVA p-value which indicated unfit regression model.

The implication of these results is that the variability of failure may not only be due to a hierarchy culture or a market culture only, but multiple other variables may lead to the failure of a collaboration. The biggest challenge with these results is that out of the 94 respondents, only eight responded on a failed collaboration, which resulted in the

difficulty of obtaining significant statistics for a failure outcome of collaborations. Therefore, an opportunity exists for future expansion on this aspect of the research by ensuring that a more extensive number of responses are obtained to allow for conclusive discussions to be drawn.

Based on the conclusive results of the success outcome of the collaboration it is critical that both alliance partners acknowledge the difference and co-existence of multiple cultures in the alliance, but more importantly to minimise the cultural differences between them. In conclusion, it is necessary for leaders to study the alliance cultures and as part of collaboration strategy engage in a deep cultural assessment as a critical success factor towards value creation in a partnership (Sambasivan & Yen, 2010).

6.5 Discussion of hypothesis two

6.5.1 Too much bureaucracy impedes the success of the collaborations

The approach taken for understanding the impact that excessive bureaucracy has on the outcome of a partnership was to use the statistical test related to the hierachy clan to prove or disprove the hytpothesis. Looking at the results of section 5.5.4 and Figure 19, it is clear that both customer partcipants and supplier participants in the collaboration have the same view about the hierarchy culture. This was evident as the difference of data distribution between the two groups was relatively equal, with mean ranks of 43.17 and 48.90 for customers and suppliers respectively.

Sambasivan and Yen (2010) state that more collaborations based on hierachical culture, also referred to as bureaucratic cultures (Helfrich, Li, Mohr, Meterko & Sales, 2007), are supposedly more trusting and integrate easier on the bases that they have more structured and formal procedures and process that help streamline the collaboration's aspirations. However, based on the the correlations results of Table 10 in section 5.6, the hierarchical culture has come out to be very weak and negatively-correlated to a successful outcome. Although the weakness of the correlations may discard any inferences that can be made, it highlights that more in-depth components of hierachical culture could give more meaning to the results if assessed at the underlying category level of variables, as a opposed to the latent variable level of hierachy.

The other view from Brown, Gould and Foster (2005) state that a collaboration structure which promotes hierachy tends to be less flexible and more rigid. Based on hypothesis one's findings, whereby adhocracy and flexibility are associated with success, it can be infered that hierarchy - with its rigidity being the opposite of what adhocracy offers - has a greater chance of influencing a failure outcome.

The other challenge that may be experienced with a hierarchical culture, is that the further the power of influence is from the processes and executioners of policies within a partnership, the higher the chances are of losing inertia and momentum to deliver meaningfully (Osborn & Jauch, 2002). This is simply because, as Kale and Singh (2009) stated, the coordination of a structure with the delegation of authority, decision-making within the relationship must be established to oversee the functioning of the supply chain collaboration.

However, an interesting viewpoint emerged from the regression results of section 5.7.1 (Figure 27), which looked at the in-depth predictors of the collaboration's failure outcome in terms of the category variables of hierarchy. Of the three category variables of latent hierarchy culture, namely, control and structure; formal rules and policies and efficiency as the basis of success; only efficiency was found to be a statistical predictor towards the failure outcome. It was also found that hierachy alone cannot be influencial to the outcome without the correct type of leadership. It was only when the leadership component was introduced to the regression model that the influence of efficiency as a category variable of hierarchy became evident.

The introduction of a leadership model elevated the fact that with the absence of effciency-based leadership in a more hierchical type of collaboration, there is a higher chance of failure in the partnership. As seen in the results of the improved regeression model in Figure 27, introducing effciency-based leadership in a hierarchical structure improves the predictability of a failure outcome by 10% and a 2% increase in variability of the outcome could be explained by the organisations' efficiency, seniority of the participants in the collaboration and the right kind of leadership.

Based on the β coefficients of the results, it is clear that job level and efficiency-based leadership are negatively proportional to the failure of the partnership. Negative proportionality indicates that the less senior the participants are in a hierarchical-centric collaboration, the greater the chance of failure. Similarly, the lack of efficiency-based leadership in such a collaboration leads to a lower likelihood for a successful outcome.

The view about properly institutionalised efficiency in a collaboration with a hierarchical culture in nature is supported by Choi, Seo, Scott and Martin (2010). Choi, et al. argued that hierachical culture focussed organisations seek to deliver high internal efficiencies, uniformity and well-cordinated practices. An interesting observation that was made was that an existing correlation between latent hierachy culture and adhocracy culture was recorded with a statisticallly significant correlation of 0.217 and $p<0.05$.

The implication of this relationship between adhocracy and hierarchy is that, although the two cultures would seem to be on the opposite ends of the spectrum inherently, the result highlights once again the need for co-existence of the cultures, even in a paradoxical form (Choi, et al, 2010). It can therefore be argued that the paradoxical correlation between adhocracy and hierarchy implies that, although the probability of success is better predicted by adhocracy in supply chain collaborations, the collaboration must allow for flexibility and innovation within the bounds of moderated bureaucracy and regulations. It is therefore evident that a supply chain collaboration with aspirations to succeed would lean towards an adhocratic culture profile, which offers a higher degree of flexibility than a hierarchical culture profile of rigidity and stability (Cao, et al. 2015).

6.6 Discussion of hypothesis three

6.6.1 The moderating effect of leadership on the success of the collaboration

In order to understand the exact impact of culture on the outcome of a collaboration it was hypothesised that culture has to be moderated for it to somehow have an impact on the outcome of the collaboration. Therefore, the idea arose that the kind of leadership that is at play in the collaboration influences the success or failure of the partnership. The questionnaire inspected four different types of leadership that could be employed, including mentoring leadership, entrepreneurial leadership, results-orientated leadership and efficiency-driven leadership. After all of the leadership types where correlated to the success or failure outcome, it was found that only the efficiency-driven leadership had a

weak correlation to the outcome (0.202 and $p<0.05$) whereas the other three leadership types showed no sign of correlation.

However, for the purposes of understanding the overall impact that leadership has on a collaboration, leadership was positioned from a moderating perspective as opposed to having a direct impact. It was clear from the beginning that it is the moderating effect of leadership that improves the chances of the collaboration becoming a success. Therefore, a latent leadership variable with a Cronbach's alpha of 0.759 was measured out of mentoring leadership, entrepreneurial leadership and efficiency-driven leadership and was further correlated with the four culture constructs and collaboration outcome variable.

Interestingly, as shown in Table 12, the more adhocracy and hierarchy culture types were positively but weakly correlated at 0.217, $p<0.05$. Hierarchy culture did not correlate to the collaboration outcome at all. However, a strong positive correlation of 0.893, $p<0.01$ was recorded between adhocracy and leadership and a somewhat very weak and insignificant, but positive correlation of 0.153 was recorded between leadership and collaboration outcome.

Based on the above observations, a moderation effect was examined between leadership and adhocracy culture towards the outcome of collaboration. Based on these correlations, it was observed that when adhocracy culture was moderated by efficiency-driven leadership, there is a weak, positive and significant relationship between the moderated combination with success of the collaboration and correlation of 0.234, $p<0.05$. On the other hand, the moderating effect of mentoring leadership on adhocracy and the moderating effects of entrepreneurial leadership on adhocracy culture did not seem to have any effect or significant relationship with the outcome of the partnership.

6.6.2 Predicting the outcome of a collaboration with leadership as a moderator

The observations that were made in section 6.5.1 are consistent with those in sections 6.4.1 and 6.4.2 in that they highlight the association that exists between adhocracy culture and the success outcome of a collaboration, although the approach was different for both cases. In addition to the association observation, the multiple model regression in Figure 23 indicates that the outcome has a greater chance of being predicted by the organisation's approach of ensuring that supply chain collaboration members are

continuously being given new challenges. This would explain the 8.1% variability of a collaboration's success.

The regression model in Figure 23 was enhanced with moderating effects and produced the outcome (as seen in Figure 30). In the enhanced model it was clear that the R improved from 0.348 to 0.387, which means that the independent variable's chance of predicting the outcome improved after the moderating effect of efficiency-based leadership was introduced. The R-square value increased from 0.81 to 0.122, which means that the 12.2% variability of the outcome can be explained by the independent variables, including leadership as a moderator. In essence, an additional 4% improvement in variability was observed when culture was moderated by leadership.

6.6.3 Practical implications of the results

Based on the observations in sections 6.5.1 and 6.5.2, two major findings can be highlighted. Firstly, it was clear that although many leadership styles may co-exist in a partnership, it still remains crucial to identify which of the leadership types is more suited to be used as a conduit for cultivating a fitting supply chain collaborative culture.

According to Fawcett, et al. (2013), it is necessary for the leaders to create a trusting environment between the relationship partners for the collboration capability to be enhanced and ensured. In the absence of efficiency-based leadership and appropriate incentives in the form of new challenges for the adhocratic collaboration partners, the motivation to invest in appropriate relationships will be dampened.

The fact that more often than not leaders in organisation are considered to be mentors, father figures or sages (Deshpande, Farley & Webster, 2017), they then by implication should play a crucial role in ensuring that practices and behaviours that are sought after in the organisation are implemented. Therefore, based on the results of this study where a 4% increase of predictability was observed as a result of the moderating effect of efficiency-based leadership, it can be deduced that the right adhocracy culture on its own cannot be achieved and influences the outcome of the collaboration. However, the right composition of leaders is required to transcend culture into a state to influence the results of the collaboration.

Another crucial aspect relating to the moderating effect of leadership in supply chain collaboration is the dynamic nature of the relationship due to the environment within which it exists and the diversity among partners. More often than not, substantial behavioural changes from individuals in a collaboration are expected due to the type of culture that aspires towards achieving results, which, in the case of this study, was found to be the adhocracy type of culture. Change introduces a variety of resistors and it is for this reason that Fawcett, et al. (2012) agree with the observation that the absence of the appropriate leadership required to facilitate roles and responsibility clarification, will lead to the limited success of the collaborative efforts.

Therefore, it is crucial for the organisations going into collaborative partnerships to acknowledge that the dynamic nature of a collaboration lends itself to the introduction of tension among the collaboration partners. This tension must be kept at a minimum by promoting the right culture within the collaboration. Leadership should serve as a cultural and structural enabler of the partnership to reduce resistance to change and builds trust between the relationship partners. It is through an iterative process by leaders that specific behaviours and practices are embedded in an organisation and eventually becomes routine for the collaboration partners. Therefore, it suffices to say that a specific collaborative culture in supply chain partnerships comes into play as a result of competent leaders who take it upon themselves to ensure that a sense of community and trust is heightened in the collaboration (Cameron & Quinn, Diagnosing and changing organizational culture - Based on competing values framework, 2011).

Drawing from observations and discussions of hypothesis two, it was clear that, not only will you find one type of culture in a collaboration but multiple cultures co-exist. In this case paradoxically adhocracy was shown to co-exist with hierarchical culture. As Cartwright and Cooper (1993) stated that if two dissimilar cultures exist in a partnership, the chances of conflict increasing are high. Hence a necessity supported by Schein (2004) that adequate and fitting leadership should be present to moderate and absorb any anxiousness which may be as a result of culture dissimilarities.

6.7 Conclusion

This chapter was able to describe and discuss the details of the results as analysed in chapter five. The intention of the discussions was to highlight what each set of results meant including the implication thereof in business. Looking at the demographics discussion, it became clear that sample of the respondents was fair size but with a much larger size as proposed in chapter four the distribution of data might have been better.

The tests for normality confirmed data distribution which is not normal however, there were no differences of views between categorical groups of customers and suppliers participating in supply chain collaboration. It was clear that whilst the where no differences between customers and suppliers with respect to the four culture constructs, a success or failure outcome has no association with whether supply chain partnership participant is a customer or supplier.

Discussions and findings of hypothesis one highlighted that in each supply chain collaboration there will a dominant culture which influences the collaboration's outcome could be retained. Adhocracy culture of all four cultural dimensions tested was the highest predictor of the successful supply collaboration. This predictability was more due to the underlying requirement of exposing the supply chain partnership to new challenges.

As for hypothesis two, the bureaucratic nature of a hierarchical culture was found to be and impediment to supply chain collaboration success. Although some theory suggested that the coordination, rule-based approach and transactional type characteristics of hierarchical are meant to increase closeness of the partners in the collaboration, it was ascertained that these characteristics alone will enable success of the collaboration. Lack of efficiency-based leadership and absence of senior and more experienced decision makers will lead to failure of the collaboration.

The discussion of hypothesis three indicated that there is indeed moderator relationship between the leadership and culture which impacts positively on the outcome of the relationship. It was found that of the four leadership types tested, efficiency-based

leadership was a good moderator of adhocracy culture. With efficiency-based leadership introduced in the supply chain collaboration, the predictability of successful outcome was increased by 4%.

On the whole, it was clear that the data set obtained was fair to good set of data to allow for reasonable inferences to be made, however it still limits the generalisation capability at the population level of supply chain collaborations. All three hypotheses can be retained but also interestingly what has emerged strongly in support of Cameron & Quinn (2011) view that co-existence of multi-cultural dimension in one entity, was that paradoxically adhocracy and hierarchy co-existed and with the right leadership in place, the two culture extremes can be maximised to support one another.

7 Chapter 7: Conclusion and recommendations

7.1 Introduction

A significant amount of research has been conducted in the field of strategic alliances, looking at the different forms of such alliances and their intentions. With all the research conducted, the maximisation of value creation to remain competitive has been found to be the main reason why organisations form alliance partnerships. This study's focus was specific to supply chain collaborations, as a form of strategic alliance in which value creation enables faster product development, lower supply chain cost, shorter turnaround times and improved stakeholder focus (Fawcett, et al. 2012).

In order to define the research problem for the study, it was necessary to acknowledge the fundamentals of what a partnership or collaboration entails. Feng and Zhao's (2014) view of social exchange theory was crucial to relate to and enable the understanding of collaboration dynamics and the dyadic nature of the collaboration, which subjects itself to interests and power bases between the partners in the collaboration. It is for this reason that it was necessary to acknowledge that the relational nature of collaborations lends itself to the complexities brought about by the fusion of two independent and different organisational cultures. The specific problem that was brought to the fore was that most supply chain collaborations' success was difficult by organisational cultures that are simply too dissimilar.

Fawcett, et al. (2015) support the notion that supply chain collaborations increase competitiveness for partner organisations, but Cao, et al. (2015) posited that although the notion of creating high value is true, implementation thereof has not been easy with the effect of the high failure rates that were reported. Furthermore, many studies looked into the causes of failed collaborations and the most common cause of failure seems to have been the effect of organisational culture. The study by Fawcett, et al. (2008) confirmed that organisational culture seems to have a substantive effect on the failure of a supply chain collaboration.

Therefore, the aim of the study was to investigate to which extent the subsets of organisational culture influence the outcome of a collaboration by inspecting the specific cultural dimensions within a collaboration. The necessity of the study was based on the fact that, given the nature of the supply chain environments and the type of collaborations therein, it would be beneficial if the preferred culture makeup is understood by all partners in order to inform the decision of whether to be part of the partnership or not.

The study followed a cross-sectional quantitative approach and surveyed a diverse group of supply chain collaboration participants. A well-established organisational culture assessment instrument based on the completing values framework of Cameron and Quinn (2011) was used for the survey.

7.2 Principal findings

7.2.1 Hypothesis one

The discussions and findings of hypothesis one highlighted that, as hypothesised, each supply chain collaboration has a dominant culture that influences the collaboration's outcome. Therefore, hypothesis one could be retained as true and proven. From all the four cultural dimensions that were tested, adhocracy culture was the highest predictor of successful supply chain collaboration. This predictability was due to the underlying requirement of exposing the supply chain partnership to new challenges.

The findings of hypothesis one are crucial in the sense that they highlight the fact than supply chain collaboration requires a culture that promotes flexibility and innovativeness, as stated by Sambasivan and Yen (2010). Further to this observation, it has been noted that organisations that are more open to innovation and are less rigid have a better chance of creating high value. Another observation that was made was that both adhocracy and clan culture had a positve relationship with the succesful outcome of collaboration, but clan culture's association with a successful outcome was very weak. However, looking at the charateristics of clan culture and linking it to an association with adhocracy culture, the clan culture can be characterised as a trusting member in the organisation (Cameron & Quinn, 2011). Therefore, the combination of clan culture with adhocracy would possibly increase a collaboration's chances of success.

7.2.2 Hypothesis two

Pertaining to hypothesis two, the bureaucratic nature of a hierarchical culture was found to be an impediment to a supply chain collaboration's success. Although some theories suggest that a coordination, rule-based approach and the transactional type of characteristics of hierarchical culture are meant to increase the closeness between the partners in the collaboration, it was ascertained that these characteristics alone do not enable the success of the collaboration. A lack of efficiency-based leadership and the

absence of senior and more experienced decision-makers is contributory to the failure of a collaboration.

The findings of hypothesis two align with the views of Brown, et al. (2005) who indicated that organisational structures with high levels of bureaucracy offer less flexibility and are too rigid to navigate. This is also true with regards to a hierarchical culture from a transactional cost-based approach. Carr and Pearson (1999) stated that a hierarchical culture attracts high transactional costs associated with contractual negotiation efforts as well as the implementation, coordination, measuring and enforcement of terms and conditions. In essence, excessive transactions will subsequently stifle the inertia and momentum of the collaboration and lead to a failed state. It is for this reason that Blome, et al. (2014) suggested that the culture profiles of the two collaboration partners must be similar to enable the collaboration to be responsive and thereby gain a competitive edge in the market.

7.2.3 Hypothesis three

The findings related to hypothesis three indicate that there is indeed a place for moderator relationship between the type of leadership and the culture of an organisation, which impacts positively on the outcome of the collaboration relationship. It was found that of the four leadership types that were tested, efficiency-based leadership was a good moderator of adhocracy culture. With efficiency-based leadership introduced in the supply chain collaboration, the predictability of a successful outcome was increased by 4%. Therefore, it is imperative that adequate leadership is a prerequisite when going into collaboration so that the chances of success can be increased.

Scott, et al. (2003) supported the view that the inherent nature of supply chain collaboration, similar to any organisation, requires human energies to be harnessed and directed towards set objectives. The primary objective of supply chain collaboration is to create more value for the partner organisations; hence the intention of forming a collaboration is never for it to fail. The need for an adhocracy type of culture to be achieved requires a multifaceted leadership process of setting objectives, engaging the right people and providing partnership participants with support and motivation to achieve the intended goals (Giltinane, 2013).

Efficiency-based leadership has proved to be the most important type of leadership and the type of leaders to be involved in the collaboration must meet the requirements of efficiency-based leadership. A leader with a full range of leadership capabilities would be even more effective, because they would exude traits of a transformational leader during the formation and merging of the required culture as well as traits of a transactional leader that are required to monitor and enforce processes and policies (Avolio, 1999).

The experience and knowledge of the participants in the supply chain collaboration seems to have an effect on the outcome of the collaboration as well. Although the effects are not pronounced, the seniority of the participants seems to somewhat influence the outcome of the collaboration. The absence of more skilled and senior participants (as ranked according to their job level) indicates a positive proportionality to the failure of the collaboration. It can be inferred that the makeup of the collaboration teams should take cognisance of the experience and skills required to increase the probability of a successful partnership. More skilled and experienced participants in the collaboration will adequately fulfil the relational exchange skill requirements, allowing the adhocracy culture to be nurtured (Beugelsdijk, Koen & Noorderhaven, 2006).

7.2.4 General conclusions for hypotheses

On the whole, it was clear that the data set obtained was a fair to good set of data to allow for reasonable inferences to be made. However, the data set still limits the generalisation capability of the study at a population level of supply chain collaborations. All three hypotheses can be retained and interestingly, a view also supported by Cameron and Quinn (2011) about co-existence of multi-cultural dimensions in one entity, was the paradox that adhocracy and hierarchy co-existed in the study. With the right leadership in place, the two culture extremes and synergies can be maximised to support one another.

7.3 Implications for management

An extensive literature review relating to this study and the specific study findings highlighted crucial aspects that managers and decision-makers must be aware of when embarking on prospects of a supply chain collaboration. There are four main categories that are key to setting up an appropriate supply chain collaboration strategy. Christoffersen (2013) named the four categories as dissimilarities, behavioural attitudes, experience and control.

Managers must take cognisance of the impact (and to what extent) cultures that are too dissimilar have on the wellbeing of supply chain collaboration as the risk increases with the collaboration of dissimilar cultures. As part of supply chain collaboration strategy formulation, it is suggested that a benchmarking initiative be undertaken to feed into understating the footprint of collaborations, that have been successful and those that have failed. This approach will highlight the magnitude of the key contributors to success or failure so that they can be built into the strategy.

As far as behavioural attitudes are concerned, it becomes imperative to undertake an organisational culture assessment of both supply chain partners. The intent of the culture assessment is to gain insights into the baseline culture profiles of the two organisations before embarking on a collaboration. The culture profiles will elevate the dissimilarities and similarities between the two organisations, thus enabling a process of allocating the correct resources that may be required to reduce the dissimilarities. Albers, et al. (2013) stated that failure and partnership struggles are often mostly caused by dissimilar cultures and different management procedures between two partners. The more similar the culture profiles are between the two collaboration partners; the more aligned behavioural attitudes will be.

Another consideration for managers is the social capital investment that is required to respond to the social exchange and relational exchange requirements of supply chain collaboration (Feng & Zhao, 2014). Proactive investment in adequate and appropriate relationship skills for those identified to represent organisations in the supply chain collaboration will increase the chances of building a partnership with heightened levels of trust and interdependence and low levels of transactional costs.

The right composition of leadership must be understood and proactively selected and developed to meet the specific needs of the supply chain collaboration. The establishment of a supply collaboration can be likened to an organisation undergoing organisational restructuring, which involves two groups entering into a partnership with the expectation of some form of reward (Wu, Chuang & Hsu, 2014). It is for this reason that power differentiation, the allocation of rewards and interpersonal differences be steered and managed correctly so that levels of conflict are suppressesed, thereby increasing the chances of success. Investing in the correct leaders who can make a success of the collaboration must form part of the strategic plan prior to the establishment of the collaboration.

7.4 Limitations of the research

The two most common limitations that are found in most studies are also relevant to this specific study as well. These limitations are internal validity and reliability, which may deem the research instrument or results insufficient, and external validity that may affect the generalisability of the study results with regards to the broader population (Price Editor & Murnan, 2004).

7.4.1 Limitations of internal validity and reliability

Although the validity and reliability of the research instrument were ascertained, the challenge remains that certain validity tests like the CFA ranked the research instrument as a moderate fit for the study. In addition, the instrument that was used was an established instrument, which was seemingly developed through an iterative process with much larger sample sizes compared to the 95 respondents of this study.

A number of statistical tests, as highlighted in Chapter Six, were not significant at $p<0.05$, but recorded results that could have had more meaning if the sample size was much larger or the significance level was more conservative at $p<0.01$. As a result, the test for differences between categorical customer and supplier groups required that the null hypotheses be retained, which could possibly have introduced type II errors of retaining hypotheses that should have been rejected.

The study was a cross-sectional and confirmatory study; therefore, in order for the findings to be developed into more robust reasoning, the study may have to be repeated with a different sample group. This test-retest longitudinal approach would allow the verification of the results and these can then be confirmed for consistency, thereby increasing the robustness of the arguments and findings.

7.4.2 Limitations of external validity

The estimated sample size at an alpha level of 0.05 was 119, but the final response rate produced 96 responses, one of which had to discarded due to the inadequacy of the responses on the critical construct questions. Although the sample size of 95 responses was much more sufficient than the minimum of 30 responses that are required for meaning statistical tests, it still becomes limiting if full generalisation of results has to be made to the supply chain collaboration (Saunders & Lewis, 2012).

Furthermore, the fact that the study is also a single study adds to the scepticism of its external validity. However, one of the ways to improve its validity is to launch a similar study in a different setting, but ensuring that substantial time is allowed to increase the chances of obtaining much bigger samples to test against (Price Editor & Murnan, 2004).

7.5 Recommendations for future research

Doing a repeat study in a different setting should be considered for future research with the aim to improve on both the current study's internal validity and reliability. A repeat study would also allow the generalisation of the results and findings to the greater population, from which robust academic arguments can be derived in order to improve the current theoretical base that exists on the subject.

Another aspect of this study that prompted further academic curiosity is the subject of the paradoxical existence of adhocratic culture and hierarchical culture. The study could not reveal the detail of how the two cultures can be combined towards a more powerful and lasting collaboration. It is recommended that a detailed analysis be undertaken to investigate the influence that the coexistence of these two cultures has on the collaboration. More importantly, the future research should aim to determine how the two cultures can be nurtured optimally as well as find out what competencies are required to establish a culture that is an enabler of collaboration success.

Lastly, another suggestion for future research is around the notion of efficiency-based leadership that is required for a successful outcome of the supply chain collaboration. There is an opportunity to find out what leadership traits are necessary for this efficiency-based leadership to be effective, therefore a longitudinal study can be considered. A longitudinal study will afford the researcher more opportunity to determine whether leadership is only moderative or of it can be causal to the successful outcome of a partnership.

7.6 Concluding remarks

The study has been able to identify and expand on previously posited theory that organisational culture influences the supply chain collaboration's outcome. The academic contribution of the study is about the clarity and confirmation of the type of culture preferred for supply chain collaborations and the acknowledgement of co-existing

cultures which may be opposing to the core adhocracy culture. Contribution to business fraternity is relating to having made more information available which can be applied proactively during entities' supply chain collaboration strategy formulation. Findings from the study will enable managers to make good choices about whether they have the right culturally fit supply chain partners to collaborate with and prioritise investments for leadership and relational resources required for being part of collaboration.

8 References

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Appendix A: Survey questionnaire adopted from organisational culture assessment instrument (OCAI)

Section 1

Demographic

Questions

Following are several questions about you, your background, and the place where you work. These questions are important because they help us to see if different types of people respond to the questions on this questionnaire in different ways. They are NOT used to identify any individual.

Questions about Your Work Background

1-1 How many years of full-time work experience have you had?

_years

1-2. How many years have you been a manager?

_years

1-3. At which level is your role in your organisation?

_____ Executive Management
_____ Senior Management
_____ Middle Management or Specialist
_____ Other

1-4. If Other was selected in question 1-3 please elaborate?_____
___

1-5. Is your organisation a multinational corporation? ☐ Yes ☐ No

1-6. Do you belong to any professional associations or networks? ☐ Yes ☐ No

Questions about This Organization

1-7. Please indicate the kind of work done primarily done by the unit you manage:

_____ Administration
_____ Engineering, manufacturing, or production
_____ Finance or accounting
_____ Human resource management or personnel management
_____ Marketing
_____ Planning
_____ Purchasing
_____ Research and development
_____ Sales

_____ Support services (for example, plant and equipment maintenance)
Other (please describe)

1-8. How big is your company in terms of employees?

_____ < 500 employees
_____ 501 to 1000 employees
_____ 1001 -5000 employees
_____ >5 000 employees

1-9. Were you or are you the customer or supplier in this strategic alliance relationship? Customer Supplier

1-10. Is or Was the strategic alliance partnership a success or failure measuring by its intended outcome? Success Failure

End of Section 1. Please continue on to Section 2.

Section 2

The Way Things Are in Your Work Organization

Instructions

Please respond by selecting the number closest to what you observed.

These six questions ask you to identify the way you experience your organization right now.

In the survey, "the organisation" refers to the organization managed by your boss (or the organisation *in which* you manage).

Section 2 questions begin here.

		Strongly Agree	Partly Agree	Neither Agree nor Disagree	Partly Disagree	Strongly Disagree
1	**DOMINANT CHARACTERISTICS**					
1A	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.					
1B	The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.					
1C	The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.					
1D	The organization is a very controlled and structured place. Formal procedures generally govern what people do.					

2	**ORGANIZATIONAL LEADERSHIP**					
2A	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.					
2B	The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.					
2C	The leadership in the organization is generally considered to exemplify an aggressive, results-oriented, no-nonsense focus.					
2D	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.					

		Strongly Agree	Partly Agree	Neither Agree nor Disagree	Partly Disagree	Strongly Disagree
3	**MANAGEMENT OF EMPLOYEES**					
3A	The management style in the organization is characterized by teamwork, consensus, and participation.					
3B	The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.					
3C	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.					
3D	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.					

4	**ORGANIZATIONAL GLUE**					
4A	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.					
4B	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.					
4C	The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.					
4D	The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.					

5	**STRATEGIC EMPHASES**					
5A	The organization emphasizes human development. High trust, openness, and participation persists.					
5B	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.					
5C	The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.					
5D	The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.					

		Strongly Agree	Partly Agree	Neither Agree nor Disagree	Partly Disagree	Strongly Disagree
6	**CRITERIA OF SUCCESS**					
6A	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.					
6B	The organization defines success on the basis of having the most unique or the newest products. It is a product leader and innovator					
6C	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.					
6D	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.					

End of Survey

Appendix B: Permission to use OCAI instrument

Permission for use of OCAI culture assessment instrument
1 message

Wiley Global Permissions <permissions@wiley.com> Wed, 12 Jul 2017 at 16:46
To: 20297565@mygibs.co.za <20297565@mygibs.co.za>

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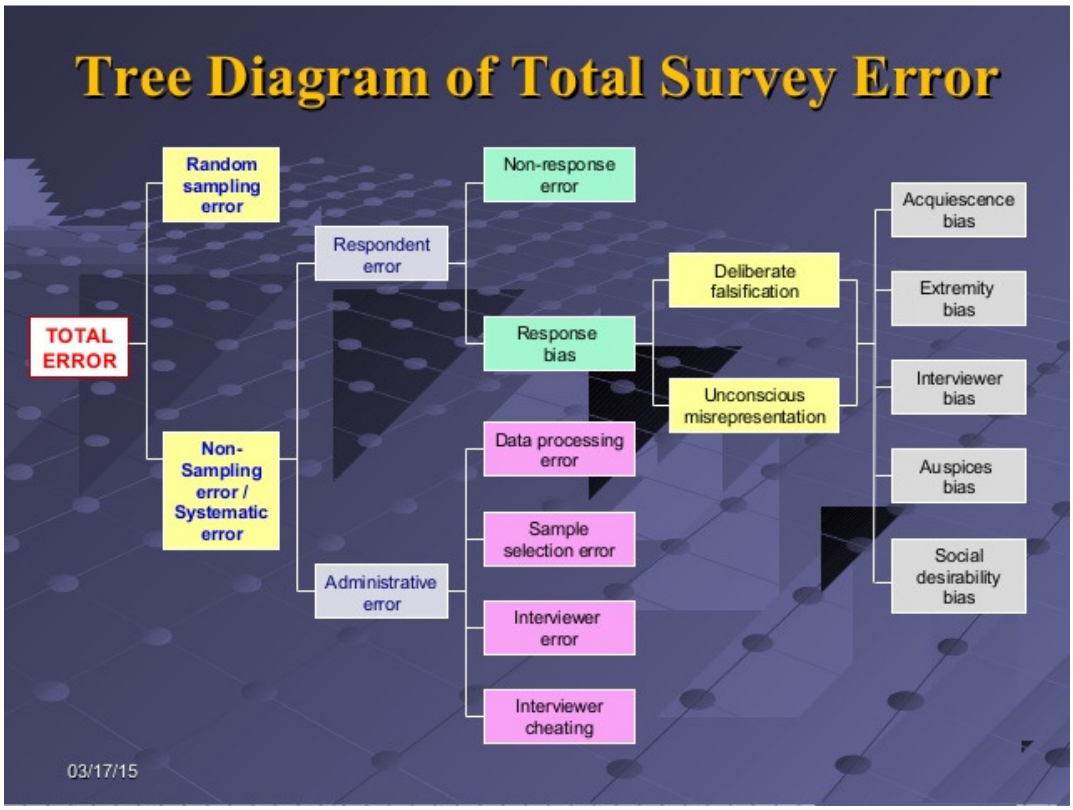
Appendix C: Tree diagram of total survey error



Source: Zikmund, 2003, p. 177

Appendix D: CFA model fit for the study's data set

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	54	303,089	246	,008	1,232
Saturated model	300	,000	0		
Independence model	24	373,203	276	,000	1,352
Zero model	0	1116,000	300	,000	3,720

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,174	,728	,669	,597
Saturated model	,000	1,000		
Independence model	,397	,666	,637	,612
Zero model	,441	,000	,000	,000

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,188	,089	,551	,341	,413
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,891	,167	,368
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	57,089	16,997	105,365
Saturated model	,000	,000	,000
Independence model	97,203	50,752	151,727

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	3,259	,614	,183	1,133
Saturated model	,000	,000	,000	,000
Independence model	4,013	1,045	,546	1,631

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,050	,027	,068	,490
Independence model	,062	,044	,077	,124

AIC

Model	AIC	BCC	BIC	CAIC
Default model	411,089	450,795	548,427	602,427
Saturated model	600,000	820,588	1362,988	1662,988
Independence model	421,203	438,850	482,242	506,242
Zero model	1116,000	1116,000	1116,000	1116,000

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	4,420	3,989	4,939	4,847
Saturated model	6,452	6,452	6,452	8,824
Independence model	4,529	4,030	5,115	4,719
Zero model	12,000	10,941	13,140	12,000

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	88	93
Independence model	79	84
Zero model	29	30

Appendix E: Code book for this study's dataset

Q1_Yrs_Served		
		Value
Standard Attributes	Position	1
	Label	Years of service
	Type	Numeric
	Measurement	Ordinal
	Role	Input
Valid Values	1	1-5 Years
	2	6-10 Years
	3	11-15 Years
	4	16-20 Years
	5	21-25 Years
	6	>25 Years

Q2_YrsInRole		
		Value
Standard Attributes	Position	2
	Label	Years in current role
	Type	Numeric
	Measurement	Ordinal
	Role	Input
Valid Values	1	< 1Yr
	2	1-3 years
	3	3-5 years
	4	5-10 years
	5	>10 years

Q3_JobLvl		
		Value
Standard Attributes	Position	3
	Label	Job Level
	Type	Numeric
	Format	F2
	Measurement	Ordinal
	Role	Input
Valid Values	1	Owner/Exec/C-Level
	2	Snr Management
	3	Mid Management
	4	Intermediate
	5	Entry Level
	6	Other

Q4_MNCorNot		
		Value
Standard Attributes	Position	4
	Label	MNC or Not
	Type	Numeric
	Format	F2
	Measurement	Nominal
	Role	Input
Valid Values	1	Yes
	2	No

Q5_ProfAssoc		
		Value
Standard Attributes	Position	5
	Label	Professional Association
	Type	Numeric
	Format	F2
	Measurement	Nominal
	Role	Input
Valid Values	1	Yes
	2	No

Q6_BU		
		Value
Standard Attributes	Position	6
	Label	Business Unit
	Type	Numeric
	Format	F2
	Measurement	Nominal
	Role	Input
Valid Values	1	Administration
	2	Engineering, Manufacturing, Production
	3	Finance
	4	Human Resources
	5	Marketing
	6	Planning
	7	Supply Chain
	8	R&D
	9	Sales
	10	Support Services
	11	Other

Q7_OrgSize		
		Value
Standard Attributes	Position	7
	Label	Size of Organisation
	Type	Numeric
	Format	F2
	Measurement	Ordinal
	Role	Input
Valid Values	1	< 500 Employees
	2	501-1000 Employees
	3	1001-5000 Employees
	4	> 5000 Employees

Q8_CustSupp		
		Value
Standard Attributes	Position	8
	Label	Customer or Supplier
	Type	Numeric
	Format	F2
	Measurement	Nominal
	Role	Input
Valid Values	1	Customer
	2	Supplier

Q9_SuccFail		
		Value
Standard Attributes	Position	9
	Label	Success o Failure
	Type	Numeric
	Format	F2
	Measurement	Nominal
	Role	Input
Valid Values	1	Success
	2	Failure

Q10.1		
		Value
Standard Attributes	Position	10
	Label	Personal Place
	Type	Numeric
	Format	F3
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q10.2		
		Value
Standard Attributes	Position	11
	Label	Dynamic & Entrepreunerial
	Type	Numeric
	Format	F3
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q10.3		
		Value
Standard Attributes	Position	12
	Label	Result Oriented
	Type	Numeric
	Format	F3
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q10.4		
		Value
Standard Attributes	Position	13
	Label	Controlled & Structured
	Type	Numeric
	Format	F4
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q11.1		
		Value
Standard Attributes	Position	14
	Label	Leadership_Mentoring
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q11.2		
		Value
Standard Attributes	Position	15
	Label	Leadership_Entrepreneurial
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q11.3		
		Value
Standard Attributes	Position	16
	Label	Leadership_Results-oriented.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q11.4		
		Value
Standard Attributes	Position	17
	Label	Leadership_Efficiency.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q12.1		
		Value
Standard Attributes	Position	18
	Label	Management_Teamwork
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q12.2		
		Value
Standard Attributes	Position	19
	Label	Management_Risk taking.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q12.3		
		Value
Standard Attributes	Position	20
	Label	Management_Competitivenes s
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q12.4		
		Value
Standard Attributes	Position	21
	Label	Management_Conformity
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q13.1		
		Value
Standard Attributes	Position	22
	Label	The glue_loyalty & mutual trust.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q13.2		
		Value
Standard Attributes	Position	23
	Label	The glue_innovation committment
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q13.3		
		Value
Standard Attributes	Position	24
	Label	The glue_goal accomplishment
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q13.4		
		Value
Standard Attributes	Position	25
	Label	The glue_formal rules & policies.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q14.1		
		Value
Standard Attributes	Position	26
	Label	Org_emphasizes_High trust
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q14.2		
		Value
Standard Attributes	Position	27
	Label	Org emphasizes_New challenges.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q14.3		
		Value
Standard Attributes	Position	28
	Label	Org emphasizes_competitiveness
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q14.4		
		Value
Standard Attributes	Position	29
	Label	Org emphasizes_stability.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q15.1		
		Value
Standard Attributes	Position	30
	Label	Org success_teamwork
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q15.2		
		Value
Standard Attributes	Position	31
	Label	Org success on the
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q15.3		
		Value
Standard Attributes	Position	32
	Label	Org success_winning marketplace
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Q15.4		
		Value
Standard Attributes	Position	33
	Label	Org success_basis of efficiency.
	Type	Numeric
	Format	F5
	Measurement	Scale
	Role	Input
Labeled Values	1	Strongly Agree
	2	Partly Agree
	3	Neither Agree nor Disagree
	4	Partly Disagree
	5	Strongly Disagree

Clan		
		Value
Standard Attributes	Position	34
	Label	Clan
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

Market		
		Value
Standard Attributes	Position	35
	Label	Market
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

Hierarchy		
		Value
Standard Attributes	Position	36
	Label	Hierarchy
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

Adhocracy		
		Value
Standard Attributes	Position	37
	Label	Adhocracy
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

Outcome_Failure		
		Value
Standard Attributes	Position	38
	Label	Failure
	Type	Numeric
	Format	F8.2
	Measurement	Nominal
	Role	Input
Valid Values	2.00	Failure

Outcome_Success		
		Value
Standard Attributes	Position	39
	Label	Success
	Type	Numeric
	Format	F8.2
	Measurement	Nominal
	Role	Input

Supplier		
		Value
Standard Attributes	Position	40
	Label	Supplier
	Type	Numeric
	Format	F8.2
	Measurement	Nominal
	Role	Input

Customer		
		Value
Standard Attributes	Position	41
	Label	Customer
	Type	Numeric
	Format	F8.2
	Measurement	Nominal
	Role	Input

Leadership		
		Value
Standard Attributes	Position	42
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Nominal
	Role	Input

LeadMentor_Adhocracy		
		Value
Standard Attributes	Position	43
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

LeadEntrepreneur_Adhocracy		
		Value
Standard Attributes	Position	44
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

LeadEfficient_Adhocracy		
		Value
Standard Attributes	Position	45
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

LeadMentor_Hierarchy		
		Value
Standard Attributes	Position	46
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

LeadEntrepreneu_Hierarchy		
		Value
Standard Attributes	Position	47
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input

LeadEfficient_Hierarchy		
		Value
Standard Attributes	Position	48
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input