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Buyer-supplier relationships in the mining industry: Measures required to enhance supplier satisfaction and achieve preferred customer status

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A research proposal 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.

11 November 2019

Abstract

In difficult economic conditions, firms constantly strive for competitive advantage. Extant theory suggests that favourable supplier perceptions of a buying firm can contribute significantly towards a buying firms pursuit of competitive advantage, to the extent that buying firms can manifest as a preferred customer to suppliers. This means that buying firms can differentiate themselves from their competitors and attain preferred customer status by improving how they are perceived by their suppliers.

In this context, the aim of this study was to identify the measures required to enhance suppliers' perceptions and thereby secure preferred customer status to gain access to the most capable suppliers and their resources. This study adapted previous research in the field of supplier satisfaction to investigate the perceptions of suppliers to a large mining firm in South Africa. Ten factors, including broad based black economic empowerment, which is currently a prominent topic in business interaction, were considered in terms of their relevance to supplier satisfaction. However, only four factors, excluding broad based black economic empowerment, were identified as relevant. The findings of this study concur with those from previous studies confirming the relevance of profitability, reliability, growth opportunity and operative excellence as significant predictors of supplier satisfaction specific to the mining industry.

The study yielded several insights that may be used by a buying firm to enhance the relational and economic dynamics between a buyer and its suppliers. Firstly, in a competitive market, buying firms need to compete for preferred customer status and supplier resources. Secondly, large buying firms should refrain from misusing market power to engender trust in the buyer-supplier relationship. Thirdly, the legislative demands of broad based black economic empowerment require well-defined supplier development programmes that cater for both broad and focused supplier support interventions. Importantly, the need for an environment that is conducive for innovation was identified as a priority for suppliers.

Keywords

Supplier satisfaction, preferred customer status, antecedents of supplier satisfaction

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.

Neelesh Popat Amaidas
11 November 2019

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List of Acronyms

ANOVA	Analysis of variance
B2B	Business-to-Business
CPFR	Collaborative Planning, Forecasting and Replenishment
EFA	Exploratory Factor Analysis
IDC	Industrial Development Corporation
ISCOR	Iron and Steel Corporation
IT	Information Technology
JSE	Johannesburg Stock Exchange
KIO	Kumba Iron Ore Limited
KMO	Kaiser-Meyer-Olkin measure of sampling adequacy
NPD	New Product Development
OEE	Operating Equipment Efficiencies
OEM	Original Equipment Manufacturer
PAF	Principal Axis Factoring
PIC	Public Investment Corporation
SCM	Supply Chain Management
SMME	Small, Medium and Micro-Enterprises
SPM	Supplier Portfolio Management
SRM	Supplier Relationship Management
VIF	Variance Inflation Factor

CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1. Introduction

Tough economic conditions have placed firms under immense pressure to contain costs, improve profitability and ultimately deliver shareholder value. To achieve these outcomes, buying firms have to become competitive, and differentiate themselves from their competitors by enhancing how they are perceived in the market. By improving market perceptions, buying firms can benefit from a favourable image that might bestow onto them some level of preferred customer status.

The ability to leverage supplier know-how through preferred customer status and effective buyer-supplier relationships is widely recognised as a strategic lever for attracting preferential treatment from suppliers (Ellis, Henke, & Kull, 2012). Simply stated, supplier relationships that are leveraged to yield ongoing benefits and savings create invaluable competitive advantage for firms (Pulles, Schiele, Veldman, & Hüttinger, 2016; Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006), especially within a challenging economic climate.

Unfortunately, large buying firms that possess market power often subject their suppliers to a host of challenging commercial practices such as pricing moratoria, extended payment terms and inadequate compensation for an ever-increasing scope of goods and services despite the exertions of its suppliers to meet demand. Poor communication and a lack of visibility often lead to inconsistent demand and ballooning inventories, usually at the expense of supplier margins (Kang & Jindal, 2015). Moreover, to preserve cost savings, large buying firms exert sustained pressure on their supplier base by playing suppliers off against one another or through unilateral demands for year-on-year price reductions. Practises such as these, which are perceived as unfair or inequitable lends itself to adverse perceptions of buying firms (Kang & Jindal, 2015). This is especially true for small, medium and micro enterprise (SMME) suppliers that are exposed to large buying firms with all the market power (Këllezi, 2008).

This commercial mindset shifts the onus of value delivery and cost savings from buyers to suppliers without considering the risks to supplier sustainability. With their

sustainability compromised, suppliers with long-standing service records have begun to withdraw from their business relationships with certain buying firms. In many instances, suppliers terminate their relationships with buyers or choose not to respond to tender processes initiated by buying firms, simply to avoid doing business with them. The risk incurred to security of supply for buying firms is thus amplified and inadvertently self-inflicted by their own commercial philosophy. The health and commercial performance of buying firms is therefore intrinsically linked to the happiness and sustainability of its supplier base. Ultimately, the commercial success of buying firms is linked to positive confirmation of the expectations that suppliers have of buying firms (Nollet, Rebolledo, & Popel, 2012).

From a buyer's perspective, particularly with respect to the interaction between a selected large industrial buyer (Kumba) and its suppliers, this study seeks to clarify how the buyer or customer (Kumba), could revise its relationship with its suppliers to achieve preferred customer status. Thus, this study seeks to identify and describe the antecedents of suppliers' satisfaction as well as distinguish the relevance of these antecedents in terms of securing preferred customer status by providing empirical evidence of how to augment the buyer-seller interaction to the benefit of both parties.

1.2. Background to the research problem

With a long history in the mining sector going back to the early 1900's, Kumba is a supplier of high-quality iron ore to the global market. In the late 2000's, Kumba was restructured and listed on the Johannesburg Stock Exchange (JSE). Today, Kumba is amongst the largest producers of premium iron ore in Africa and the world. In 2014, eight years after listing on the JSE, escalating costs and volatile commodity prices forced Kumba to make difficult decisions in response to challenging market conditions. By the end of 2015, one of its three operations was shut down, and another in the process of closing down. To further complicate matters, Kumba's mining assets had a short life, which required the company to down scale even further under the strategy of the day. A radical rationalisation of its capital projects portfolio and a restructuring of the entire business was therefore inevitable. In 2016, the headcount of the company was reduced by 1,600 employees and a further 843 contractor positions were either terminated or not renewed. At one of its operations,

the headcount was effectively reduced by 32% to ensure the viability of the business going forward (*Kumba Iron Ore Limited Integrated Report 2016*, 2017).

With a renewed focus on productivity and operational equipment efficiencies (OEEs), the break-even price for a ton of iron ore was reduced and subsequently, cash flows turned positive. However, an analysis of Kumba's cost structures revealed several structural disadvantages which jeopardised their competitiveness in the global market. Although the price for a ton of iron ore was significantly reduced, it was still higher than that of other large industry players who produced the same product at between $10-$15 per ton lower than that of Kumba.

By mid-2017, Kumba set about developing a clear transformation agenda to address this challenge. The outcome, a business strategy, was divided into three tranches, Horizon 1 through Horizon 3. Horizon 1 is currently in the process of implementation and focused on operational excellence, sweating the assets and fetching better pricing in the market in exchange for premium product. Under the current market conditions, Kumba is under pressure to secure and maintain constructive and collaborative supplier relationships as part of its strategy for reducing cost and driving operational excellence (*Kumba Iron Ore Limited Integrated Report 2017*, 2018).

With competitiveness and sustainability at the heart of its strategy, a $10 per ton margin improvement was identified as the strategic outcome for Horizon 1, the collective goal for Kumba over the short to medium term and the impetus for driving the transformation agenda within Kumba. Looking ahead, Horizon 2 shall focus on capital expenditure, expanding the life of existing mining assets, exploring for new mining assets and investment to improve and optimise the outbound logistics infrastructure. Horizon 3 shall explore investment in other commodities outside the business as usual portfolio.

Against this backdrop, the supply chain management (SCM) function within Kumba is expected to contribute $2 per ton, or 20% of the total margin improvement, with buyer-supplier relations firmly recognised as a strategic lever for realising the $2 per ton contribution.

In a highly competitive market, many companies are struggling to survive. From a buyer's perspective, particularly with respect to the interaction between the selected large industrial buyer (Kumba) and its suppliers, it is uncertain how Kumba as the buyer/ customer could revise its relationship, in terms of the nature and level of interaction, with its suppliers to achieve preferred customer status for the benefit of the company's operations in the future. Acknowledging an array of antecedents that might be at play in terms of successful and positive relationships, it is unclear which antecedents are more prevalent for supplier satisfaction, to the extent that it would manifest as preferred customer status. Empirical evidence of this kind would be useful to align the demeanour of Kumba to augment the buyer-seller interaction to the benefit of both parties.

1.3. Supply chain management in the mining value chain

Kumba's mining value chain consists of four core activities (Vorster, 2001), namely, (1) exploration, (2) mining (3) beneficiation and (4) distribution. Exploration entails searching for new mineral resources, which is confined to a geographic location based on existing mining rights. Mining includes drilling, blasting, loading and hauling. Raw minerals are either sold directly to manufacturers or beneficiated before being sold to manufacturers. The final activity in Kumba's value chain is distribution or outbound logistics, which works closely with the marketing and sales divisions. The role of SCM within the mining value chain is depicted graphically in Figure 1 below and subsequently explained.

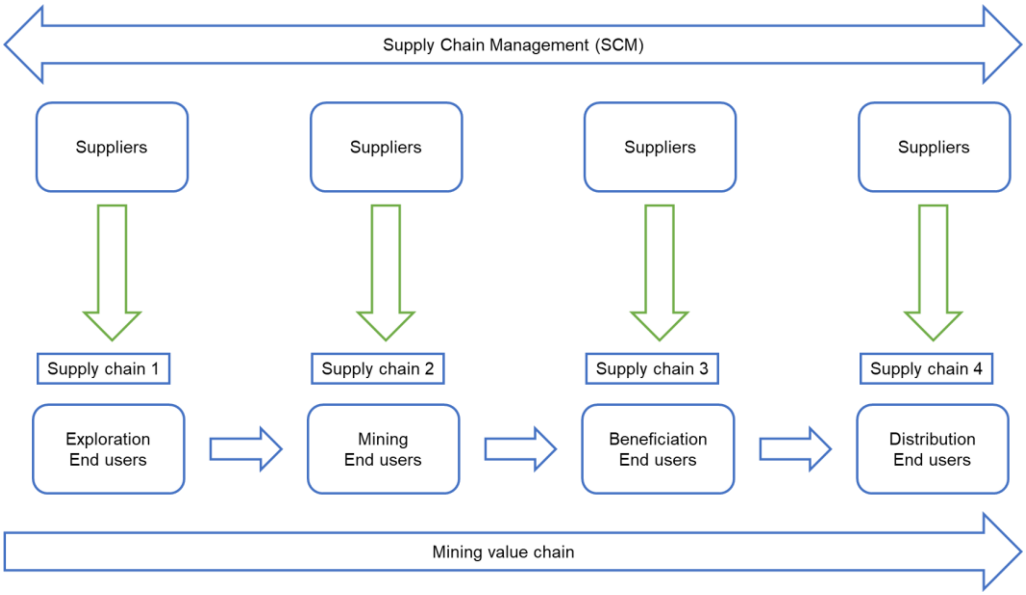

Figure 1. The role of supply chain management in the mining value chain (authors own)

Within each core activity of the value chain, there is an ongoing requirement for a multitude of goods and services ranging from multi-year capital equipment to professional services and day-to-day consumables. By supplying these goods and services to each core activity in a timely and reliable fashion, SCM enables the end-to-end mining value chain to produce saleable product. SCM is therefore a strategic organisational capability in terms of security of supply, reliability, quality, customer satisfaction, cost saving and ultimately profitability. According to Schiele, Veldman, Hüttinger, and Pulles (2010, p.133) "… supply chain management has to shift its focus from striving for the lowest possible purchasing price to the sustained optimization of strategic supplier portfolios". In this context, collaboration and supplier relationship management (SRM) techniques are essential for maintaining and fostering productive supplier relationships for the purpose of procuring goods and/ or services efficiently, at the right price, right quality and within the agreed timelines to maximise value for an organisation.

1.4. Business need for the study

The mandate of the SCM function within Kumba is to contribute approximately $2 per ton, or 20% of the total $10 per ton margin improvement. To realise these savings and fulfil its mandate, it is necessary for Kumba to understand and leverage supplier capabilities and assets. However, before Kumba can access these supplier capabilities and assets, it needs to be recognised as a preferred customer by its supplier base. This suggests that Kumba must satisfy, at a minimum, or exceed the expectations of its suppliers if it is to be perceived as a preferred customer. Preferred customer status is conferred upon a buying firm formally or informally. In either event, preferred customer status and subsequently preferential treatment by suppliers provides the platform for buying firms to gain access to supplier capabilities, assets, innovation and intellectual capital (Baxter, 2012).

In summary, preferential treatment is a direct consequence of preferred customer status, which in turn is a direct consequence of supplier satisfaction (Vos, Schiele, & Hüttinger, 2016). For this reason, as a point of departure, Kumba needs to understand the drivers of supplier satisfaction and implement the findings thereto in order to benefit from a positive relationship. However, preferred customer status and the associated preferential treatment also comes with corporate responsibility

(Bendixen & Abratt, 2007). It implies that a mutually beneficial relationship, characterised by integrated planning and information sharing, results from collaboration between buyers and suppliers. This relationship requires a mature corporate mindset that is anchored in ethical commercial practices and mindful of the challenges experienced by all actors in the market.

1.5. Theoretical need for the study

Research conducted by Hüttinger, Schiele, and Schröer (2014), in the field of industrial buyer-supplier relationships, limited to the automotive sector, recommend exploring other industries. According to the researchers, the antecedents of supplier satisfaction and preferred customer status are industry specific (Hüttinger et al., 2014) and therefore cannot be assumed to be relevant to other industries. Based on the quantum of transactional spend between Kumba and its suppliers, this research, while confined to the relational and economic dynamics between Kumba and its suppliers, is representative of an industrial buyer-supplier relationship within the mining sector. In adopting the recommendations proposed by Hüttinger et al. (2014), Kumba and its suppliers were selected as a prime example of an industrial buyer-supplier relationship within the mining industry. Accordingly, this research aims to gain insight into suppliers' satisfaction with a large industrial buying firm (the customer) in order to identify shortcomings in existing industrial buyer-seller interactions that could be addressed to enhance suppliers' satisfaction so as to elevate Kumba's status to that of a "preferred customer".

On this basis, it was important to determine the minimum level at which a buying firm should perform to achieve confirmation of suppliers' expectations, that would manifest as supplier satisfaction, as well as to determine how the buyer can outperform suppliers' minimum expectations to achieve positive disconfirmation of their expectations in order to elevate a buyer's reputation to the level of a preferred customer. A buyer's interaction with its suppliers is however multidimensional, and all the elements of the buyer-seller interaction are not necessarily equally relevant, if at all. To ascertain the role and influence of each individual element with respect to a suppliers' eventual expectations, all the dimensions of the interaction process should be explored.

1.6. Limitations and assumptions of this study

Based on the recommendations for future research provided by Hüttinger et al. (2014), this study was positioned as an exploratory study of supplier satisfaction and preferred customer status in the mining industry as perceived from a supplier perspective. Since the antecedents of supplier satisfaction are industry specific, this study made no assumptions about the relevance of antecedents identified by previous studies in different industries to the mining industry. Thus, a subsequent study, conducted by Vos et al. (2016), was consulted to formulate an adapted conceptual model that was relevant to the South African setting. In this regard, the author assumed that broad based black economic empowered (BBBEE) suppliers were more likely to enjoy a higher degree of satisfaction when compared to their non-BBBEE counterparts because of the exclusive privileges afforded to BBBEE suppliers. As an exploratory study, this study did not assume any inter-relationships between the antecedents of supplier satisfaction nor did it assume a hierarchical relationship between the antecedents of supplier satisfaction.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter provides an overview of the literature pertaining to the theoretical constructs related to the study of buyer-supplier relationships and the various levers that can be applied to unlock benefits for large buying firms and their suppliers. Because buyer-supplier relationships are typically managed by procurement within the supply chain management (SCM) function, the role of SCM and supplier relationship management (SRM), as instruments for leveraging buyer-supplier relationships, were considered. The literature review encompasses the following:

a. A theoretical review of the three relevant constructs:
    i. Customer attractiveness;
    ii. Supplier satisfaction; and
    iii. Preferred customer status;
b. The circular relationship between these three constructs in the context of an industrial buyer-supplier relationship;
c. A review of the potential antecedents of supplier satisfaction:
    i. Growth opportunity;
    ii. Innovation potential;
    iii. Operative excellence;
    iv. Reliability;
    v. Support of suppliers;
    vi. Supplier involvement;
    vii. Contact accessibility;
    viii. Relational behaviour;
    ix. Profitability; and
    x. BBBEE.
d. The tactical implications of SRM for procurement management.

2.2. Customer attractiveness

According to Mortensen (2012), attractiveness in the context of an industrial buyer-supplier relationship, may be considered from the perspective of a customer or a supplier, that is:

i. Customer attractiveness to a supplier; or

ii. Supplier attractiveness to a customer.

For the purpose of this study, attractiveness is considered from the perspective of a supplier, that is, the attractiveness of Kumba to its suppliers.

Schiele, Calvi, and Gibbert (2012b) claim that suppliers are highly selective when deciding which customers to conduct business, or collaborate with. For suppliers, the decision to initiate a business relationship or to enhance an existing relationship with a customer is typically based on the attractiveness of the customer. Therefore, suppliers need to perceive their business relationship with customers as attractive before they are prepared to "create and transfer value" (Patrucco, Luzzini, Moretto, & Ronchi, 2019, p.349). Attraction is therefore, in the context of a business-to-business (B2B) relationship, largely driven by favourable perceptions, or "the positive image of the customer in the eyes of the supplier." (Hüttinger, Schiele, & Veldman, 2012, p.1195).

In an early study, Dwyer, Schurr, and Oh (1987) explained the evolution of a dyadic buyer-seller relationship as a five-phase process. While the process describes why mutual attraction is important for initiating a B2B relationship and how the relationship evolves over time, it does not provide clear insight into the factors that make a customer attractive. Dwyer et al. (1987) submit that attraction to a buying firm is a prerequisite for initiating a commercial relationship. Suppliers are however, also attracted to a customer when they are satisfied with the behaviour of a customer over the course of an existing relationship. Attractiveness is therefore a phenomenon that can manifest either prior to and/ or during a commercial relationship while satisfaction or dissatisfaction is a potential outcome of an existing relationship. Schiele et al. (2012) supports this perspective by asserting that "Customer attractiveness is based on the expectations that a supplier has towards the buyer at the moment of initiating or intensifying a business relationship." (p.1180). Stated differently, customer attractiveness is the ability or potential of a buying firm to satisfy the needs of its supplier, ex-ante and/ or ex-post the establishment of a formal commercial relationship. From a conceptual and chronological standpoint, attractiveness precedes satisfaction because satisfaction is created based on performance in the past, which clearly distinguishes satisfaction from attraction (Mortensen, 2012).

Hald, Cordón, and Vollmann (2009) propose three relational factors, namely expected value, trust and dependence, as levers that could influence the degree of attraction between dyad partners. These behavioural traits are especially meaningful for managers searching for insights into how relationships between buyers and suppliers can be initiated, developed and improved over a period of time. Because attractiveness fundamentally entails a management of perceptions, actors within both parties of the dyad ought to pursue strategies to actively improve their value proposition in a way that is perceived as reliable and trustworthy. Mindful of the desire to achieve competitive advantage from leveraging assets and capabilities, attractiveness is undeniably the point of departure for establishing business relationships that are lucrative and mutually beneficial for buyers and suppliers alike (Mortensen, Freytag, & Arlbjørn, 2008).

2.3. Supplier satisfaction

According to Giese and Cote (2016), a growing number of definitions present satisfaction as an emotional or cognitive response to the outcome of a transaction or an exchange between a buyer (or customer) and its supplier. Giese and Cote (2016) also argue that satisfaction is experienced from a highly personalised perspective, based on the unique expectations of individual customers and therefore there is no single definition of satisfaction that is universally accepted across all customers or industries. Cengiz (2010) describes customer satisfaction as a very personal assessment that is mainly based on individual expectations. Some definitions propose that customer satisfaction (or dissatisfaction) is derived from the confirmation or disconfirmation of individual expectations regarding a service or product. Similarly, Gustafsson, Johnson, and Roos (2005) explain satisfaction in general terms, as an evaluation of a complete offering on the basis of quality and/ or service and price. Unfortunately, much of the literature addresses satisfaction from the perspective of a buying entity or consumer that is dependent on the nature of the goods or services being purchased (Baxter, 2012).

In contrast, Tse, Nicosia, and Wilton (1990) present satisfaction as a construct that is dependent on the outcomes of a mutually beneficial relationship, built on trust, fairness and realised over a period of time. Alternatively, as a process that occurs before, during and after a transaction or exchange between a buyer and a supplier. This view (Tse et al., 1990), promotes the notion that a mutually beneficial

relationship results from a collaborative mindset and the exchange of value over a period of time, as opposed to a transactional exchange limited to a product or service offering.

In their research, Pulles, Schiele, Veldman, and Hüttinger (2016) suggest that improving supplier satisfaction and cost reduction are not necessarily mutually exclusive. Notwithstanding, in practise it is important to note that buyers are attempting to contain costs whereas suppliers are attempting to increase revenues. While these conflicting objectives may not be mutually exclusive, they have the potential to become extremely destructive over the course of a relationship. Such behaviour, if poorly managed, could lead to dissatisfaction, counterproductive outcomes for both parties and, at worst, termination of a relationship.

Essig and Amann (2009, p.104) define supplier satisfaction as “a supplier’s feeling of fairness” in the context of an industrial buyer–supplier relationship. Given that Kumba and its suppliers are representative of an industrial buyer-supplier relationship, supplier perceptions and expectations of a buying firm related to trust and fair treatment were considered for empirical exploration in this study. When a buyer’s interaction with a supplier exceeds supplier expectations, it is described as positive disconfirmation of expectations, which culminates as supplier satisfaction. The converse, supplier dissatisfaction, results when disconfirmation occurs, that is, when a buyer’s interactions with a supplier do not meet supplier expectations. In the context of this study, a supplier is considered satisfied when his expectations of a buyer are confirmed at a minimum. A supplier will be dissatisfied when its expectations of the buyer are not met, that is, disconfirmation of expectations occurs. This approach is consistent with the definition of satisfaction provided by Essig and Amann (2009) and the research conducted by Hüttinger et al. (2014).

The process paradigm of satisfaction offered by Tse et al. (1990), is especially relevant for large industrial customers (or buying firms) who wish to leverage benefits through positive relationships built in partnership with suppliers over a period of time. This long-term process paradigm is akin to the philosophy of SRM (Moeller, Fassnacht, & Klose, 2008), wherein the contribution of suppliers towards the success of a buying firm is determined by the willingness of buyer and suppliers to depend on each other, share knowledge, information and even assets.

In summary, a buying firm, as a customer, makes buying decisions based on its own perceptions of a supplier's commitment to a business relationship. This will determine the buying firm's expectations, the level of satisfaction and eventually the commercial effort committed to the relationship. Similarly, a supplier makes decisions based on its perception of a buyer's commitment to the relationship. Within the framework of a buyer-supplier dyad, both perspectives are necessary and equally important for the purpose of understanding and developing solutions to manage these relationships and neutralise the effects of conflicting objectives.

2.4. Preferred customer status

A preferred customer is defined as one who receives preferential treatment from a supplier (Ramsay and Wagner, 2009). Therefore, a preferred customer is a buying organization that experiences better treatment from a supplier compared to other customers, in terms of relevant issues such as product quality, availability, support in the sourcing process, delivery and even pricing (Nollet et al., 2012). Krapfel, Salmond, and Speakman (1991) explain that suppliers consciously segment customers and allocate their resources on the basis of cost to increase relationship value. This assertion is supported by Steinle and Schiele (2008) who describes a preferred customer as the recipient of supplier resources that are preferentially allocated to a buying firm in a way that has positive effects on many areas of the buying firm's business.

From these definitions, three benefits, namely (1) better treatment, (2) preferential resource allocation and (3) improved pricing, emerged as tangible benefits that were dispensed by suppliers to "preferred customers". These benefits were described as:

i. Suppliers regularly offer unique products and/ or services to their preferred customers (Nollet et al., 2012; Ivens and Pardo, 2007).
ii. Preferred customers were the first to benefit from new technologies and products (Nollet et al., 2012);
iii. Preferred customers were the beneficiaries of preferential pricing (Nollet et al., 2012).

Thus, buying firms who enjoyed preferred customer status became the beneficiaries of supplier goodwill. Within the ambit of an industrial buyer-supplier dyad, conferring the status of preferred customer upon a buying firm remains the prerogative of the supplier. In turn, this status depends on the level of satisfaction perceived by the supplier with respect to the buying firm in question. In reality, buying firms must satisfy supplier needs and become a "preferred customer" in order to influence a supplier's outlook and behaviour. Accordingly, in the context of a preferred customer relationship, understanding supplier satisfaction criteria for the purpose of leveraging supplier resources should be a priority for the supply chain or procurement function within a buying firm.

In this instance, the buying firm, Kumba, is a dominant actor in the market with substantial buying power. Given a supplier market that is competing aggressively for a share of its business, it may appear that Kumba has no need nor incentive to satisfy its supplier base. However, such a stance is extremely naïve and has no prospect of providing benefit to either party, especially over a prolonged period of time. According to Schiele et al. (2010), preferred customer status is a precondition for supplier innovation and favourable pricing, implying that preferred customer status initiates the relational process that yields benefits for both parties concerned, as described in the model by Tse et al. (1990). Ramsay and Wagner (2009) state that even large firms experience difficulties in maintaining strategic supplier partnerships despite their market power. Developing, nurturing and retaining strategic partnerships require time, resources, commitment and above all patience. Eventually, these benefits become available to those parties who were prepared to make the necessary investment.

2.5. Circularity of attractiveness, satisfaction and customer status

Empirical evidence confirms that buying firms can accrue substantial benefits if they succeed in receiving preferential treatment from their suppliers (Hüttinger et al., 2014). Since preferential treatment and its associated benefits are a privilege resulting from elevated or preferred customer status, it is crucial for buying firms to understand how to become a preferred customer. According to Vos, Schiele, and Hüttinger (2016), supplier satisfaction is necessary for buyers to achieve preferred customer status. In their research, Pulles, Schiele, et al. (2016) propose four

constructs, customer attractiveness, supplier satisfaction, preferred customer status and preferential treatment that are related to buyer-supplier relationships.

The relationship between these constructs, presented graphically in Figure 2, is explained by Schiele et al. (2012).

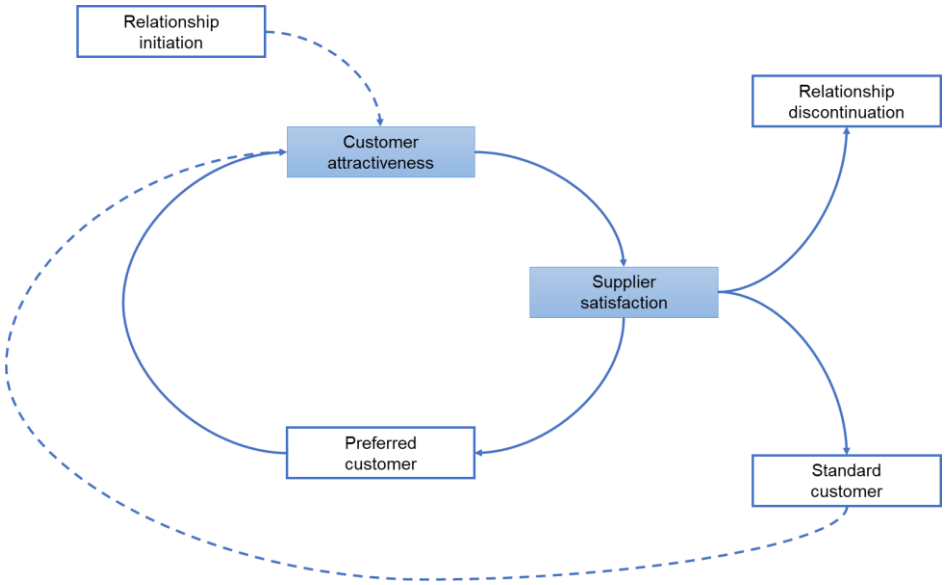

Figure 2. Cycle of preferred customership (adapted from Schiele et al., 2012, p.1180)

A supplier and a buyer must perceive each other as attractive before a commercial relationship is pursued. Once a customer, the buying firm must fulfil or satisfy the needs of the supplier in several different ways before it is conferred "preferred customer" status by the supplier. If a supplier's minimum requirements/ expectations are met, the supplier may choose to classify the buying firm as a standard customer and continue with business as per normal. Alternatively, it may classify the buying firm as a preferred customer and begin a process of exploring collaborative opportunities. In this scenario, the expectations of the supplier are intensified, which if satisfied, leads to further attraction, restarting the relationship cycle. However, if dissatisfied, that is, disconfirmation of a supplier's expectations occurs, the supplier may choose to suspend its relationship, or in the worst-case scenario, completely terminate its relationship with the buying firm.

Ellegaard (2012, p.1181) refers to the relationship between these constructs as the "circularity of attractiveness, satisfaction and resulting partner status." wherein the

development of a relationship is the outcome of a series of interventions rather than a response to a single event or stimulus. The concept of circularity as a series of interventions bears a striking resemblance to the process model described by Tse et al. (1990).

2.6. The antecedents of supplier satisfaction

A graphical summary of the antecedents of customer attractiveness, supplier satisfaction and preferred customer status is provided in Figure 3 below.

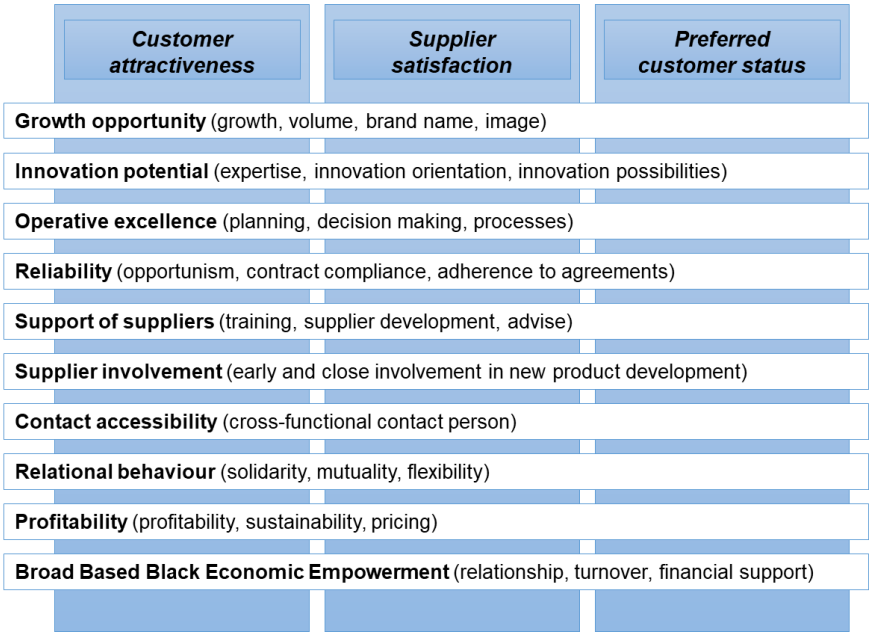

Figure 3. Antecedents of supplier satisfaction (adapted from Hüttinger et al., 2014, p.702)

Mixed-method research conducted in the automotive sector in Germany (Hüttinger et al., 2014) identified eight recurring antecedents of supplier satisfaction, namely, growth opportunity, innovation potential, operative excellence, reliability, support of suppliers, supplier involvement, contact accessibility and relational behaviour. Two additional antecedents of supplier satisfaction, profitability (Vos et al., 2016), and BBBEE (authors own) are included in the graphical summary of antecedents for the purpose of this study. These antecedents relate to three constructs, namely, customer attractiveness, supplier satisfaction and preferred customer status.

The authors of Hüttinger et al. (2014) emphasised that quantitative analyses was limited to eight relational antecedents and conducted from a buyer's perspective, thus not considering an exhaustive set of exploratory factors nor a supplier's

perspective. Further, though it was unlikely to be incorrect, these eight antecedents required validation from a supplier perspective. The research by Hüttinger et al. (2014) concluded that three antecedents were statistically significant with respect to supplier satisfaction, namely growth opportunity, reliability, and relational behaviour. Importantly, these results were specific to the automotive sector and could not be generalised for all industries.

2.6.1. Growth opportunity

In simple terms, growth opportunity refers to a supplier's perception of the potential business opportunities a buying firm may have to offer over a period of time. Growth opportunity is defined as "… the suppliers' ability to grow together with the buying firm and to generate new potential business opportunities through the relationship" (Hüttinger et al., 2014, p.703). However, these authors do not provide a clear perspective on what 'opportunity' entails. Further, because of the inordinate focus on profit as a measure of value, other forms of value, such as preferential treatment, that may exist between a buyer and seller are often neglected (Walter, Ritter, & Gemünden, 2001). Profitability is considered a distinct antecedent of supplier satisfaction in its own right. Opportunities apparently extend beyond simply the potential for direct business with a buying firm (Walter et al., 2001), and may include extending an existing business model or product into new markets, or becoming a dominant supplier of a particular product or service within a given market as a consequence of an existing buyer-seller relationship. In this study, growth opportunity was explored as an antecedent of supplier satisfaction based on evidence provided by Hüttinger et al., (2014, p.704), thus proposing that:

H1a: *Growth opportunity for suppliers has a statistically significant positive impact on supplier satisfaction.*

2.6.2. Innovation potential

Supplier innovation is a source of competitive advantage for buying firms (Bryant, 2015). By securing preferred customer status with a supplier, buying firms can access and leverage supplier innovation and technology to their own benefit. However, in the absence of tangible benefits for themselves (Schiele, 2012), the number of capable suppliers that invest in research and development are limited and not always willing to share valuable intellectual property with buyers. This

implies that buyers need to consider how they are perceived by suppliers in terms of their ability to create an environment that is conducive for collaboration and/ or the creation of new market opportunities for innovative suppliers. Hüttinger et al., (2014, p.703) define innovation potential as "…the supplier's opportunity to generate innovations in the exchange relationship due to the buying firm's innovative capabilities and its contribution in joint innovation processes". In this definition, an integrated innovation process is emphasised as an intrinsic component of collaboration for the purpose of innovative. For this reason, supplier perceptions of a buying firm's potential to collaborate in a joint innovation process is proposed as a potential antecedent of supplier satisfaction (Ellis et al., 2012; Hüttinger et al., 2014, p.704) thus proposing that:

H1b: *Innovation potential for suppliers has a statistically significant positive impact on supplier satisfaction.*

2.6.3. Operative excellence

In general, operative excellence refers a buying firms' ability to transact accurately and effectively, both financially and operationally with a supplier, thereby eliminating unnecessary costs and delays that result from poor integration and visibility into each other's operations. Typical areas of buyer operational excellence include reliable forecasting and replenishment, simple and transparent processes and prompt decision-making. Essig and Amann (2009), state that a supplier is more inclined to make a positive contribution to a buying firm if the operational efficiency of the buying firm promotes the relationship between the buyer and supplier. Hüttinger et al., (2014, p.703) defines operative excellence as "…the supplier's perception that the buying firm's operations are handled in an efficient way, which facilitates the way of doing business for the supplier." This suggests that a buyer's operational efficiency has a significant role with respect to enhancing supplier perceptions of a buyer. Accordingly, the study explores supplier perceptions of buyer operative excellence as an antecedent of supplier satisfaction (Hüttinger et al., 2014, p.704), specifically:

H1c: *Customers' operative excellence has a statistically significant positive impact on supplier satisfaction.*

2.6.4. Reliability

Much of the literature surrounding the topic of reliability is presented from the perspective of a customer or buying firm and often limited to supplier performance relative to a buyer's expectations. Notwithstanding, from a supplier perspective, a reliable customer is perceived as one that is consistent and predictable over a period of time. This implies that a buying firm is perceived as reliable if it is consistent in meeting its obligations towards a supplier. A reliable customer is described as one who is trustworthy in terms of honouring promises and who does not neglect a supplier (Blessley, Mir, Zacharia, & Aloysius, 2018). From a management standpoint, it is advised that buyers have the power to enhance supplier perceptions of reliability by refraining from opportunistic behaviour (Hüttinger et al., 2014). Thus, avoiding opportunistic behaviour has a direct and positive effect on perceptions of supplier satisfaction.

By creating an environment that is fair and free from exploitation, buying firms minimise supplier risk. Naturally, creating such an environment is viewed favourably by suppliers. It encourages suppliers to improve their own performance and eventually dedicate resources to specific buying firms according to their level of satisfaction with the relationship. Ultimately, reliability manifests as a degree of trust between a buyer and supplier (Hald et al., 2009). On this basis, the propensity of a buying firm to behave opportunistically was explored as a antecedent of supplier satisfaction from a supplier perspective (Hüttinger et al., 2014, p.704):

H1d: *Customers' reliability has a statistically significant positive impact on supplier satisfaction.*

2.6.5. Support of suppliers

At a rudimentary level, support is understood as the willingness of a buying firm to assist suppliers. According to Walter, Müller, Helfert, and Ritter (2003), support can manifest in several ways. Firstly, a product that is being supplied may be enhanced in terms of quality, safety, maintenance, cost and distribution by way of buyer support. In this instance, buyers can assist suppliers through collaborative planning, forecasting and replenishment (CPFR). In highly collaborative relationships, buyers may even make direct investment into supplier manufacturing

capability. The second form of support entails joint research and development which culminates as new technologies and/ or reduced time to market.

Any form of assistance offered by a buying firm is perceived as support or goodwill which lends itself to supplier satisfaction and ultimately trust (Hald et al., 2009). In the South African context, the role of large industrial firms with respect to local business is highly contentious. This is especially true for the mining industry in terms of the level of support offered to SMMEs that may or may not have black empowerment status. From this perspective, supplier perceptions relating to a buying firms' willingness to provide practical, on-the-ground assistance are explored. Based on Hüttinger et al. (2014, p.704) it is proposed that:

H1e: *Customers' support of suppliers has a statistically significant positive impact on supplier satisfaction.*

2.6.6. Supplier involvement

In the mining industry new product development is usually a tedious process because of the long lead times associated with developing new mineral beneficiation processes. However, new product development does occur and creates significant opportunity over sustained periods of time for suppliers to contribute to the design and development of these beneficiation processes. SMME suppliers are generally highly motivated to involve themselves in such activities because of the potential to improve their own standing and business profile in the industry. Supplier involvement is defined as the "…degree to which the supplier's staff participates directly in the customer's product development team and is entrusted with developing ideas" (Hüttinger et al., 2014, p.703). In this definition, it is important to note the authors emphasis on trust during the buyer-seller relationship because of high levels of confidentiality that may be associated with new product development in a highly competitive market. In this context, dimensions such as new product development, early supplier involvement and effective communication were explored. Consequently, this study was interested in supplier involvement as a relevant antecedent of supplier satisfaction. In accordance with Hüttinger et al. (2014, p.704) it is hypothesised that:

H1f: *Customers' supplier involvement has a statistically significant positive impact on supplier satisfaction.*

2.6.7. Contact accessibility

All suppliers, irrespective of the duration of commercial interaction with a buying firm, require some form of human contact with a buying firm (Hald et al., 2009). Suppliers are more likely to perceive a buying firm as organised, willing to cooperate and capable of resolving problems that may arise if there is a person available within a buying firm to coordinate joint activities and care for the relationship (Essig & Amann, 2009). Therefore, access to a human contact has the potential to impact directly on the level of comfort and satisfaction perceived by suppliers.

In practise, large industrial firms, such as Kumba, that deal with hundreds or thousands of suppliers on an ongoing basis may find this difficult to achieve especially given the quantum of resources required to manage such relationships. Nevertheless, at a minimum, priority suppliers that are necessary for security of supply should enjoy such a privilege. Hüttinger et al. (2014,p. 703) explain contact accessibility as "…the availability of a person who intensively shapes and advances exchange processes and reflects the buying firm's willingness to develop structural bonds with the supplier." Contact accessibility was therefore explored as a prospective antecedent of supplier satisfaction (Hüttinger et al., 2014, p.704) by proposing that:

H1g: *Customers' contact accessibility has a statistically significant positive impact on supplier satisfaction.*

2.6.8. Relational behaviour

In the context of relational behaviour, collaborative relationships hold worthwhile benefits for buyers as well as suppliers (Nyaga, Whipple, & Lynch, 2010). However, suppliers often have unfair negative perceptions of customers despite mutual gains (Corsten & Kumar, 2005). This may be in spite of the best efforts to shape a relationship that is fair and mutually beneficial for both parties from the onset. Feelings of inequity may stem from a perception of unfair profit and loss sharing or unequal commitment to a common cause that was agreed upon by both parties

upfront. In some instances, parties become disillusioned because of a failure to assist each other when difficulties in the environment or the relationship arise. Unfortunately, negative perceptions have the potential to erode supplier satisfaction significantly.

Nyaga et al. (2010) reason that relational behaviour is a function of shared information, effort and commitment, which, if dishonoured in any way by either party leads to general dissatisfaction and ultimately a breakdown in trust.

Relational behaviour is defined as "…the buying firm's behaviour towards the supplier with regards to the relational focus of exchange capturing multiple facets of the exchange behaviour such as solidarity, mutuality, and flexibility." (Hüttinger et al., 2014, p.703). Despite various opinions surrounding relational behaviour, one particular view emerges consistently throughout the literature, namely that supplier satisfaction is highly dependent on fairness, equitable distribution of wealth, transparency and a willingness to assist each other in times of difficulty. In light of these dimensions, relational behaviour was explored as a potential antecedent of supplier satisfaction as indicated by Hüttinger et al. (2014, p.705), it is proposed that:

H1h: *Customers' relational behaviour toward suppliers has a statistically significant positive impact on supplier satisfaction*.

2.6.9. Profitability

In their study, Vos et al. (2016) introduced profitability as an additional and unexplored antecedent of supplier satisfaction, to the conceptual model of Hüttinger et al. (2014). The inclusion of profitability was motivated by explaining that the antecedents of supplier satisfaction should comprise both economic and non-economic factors while the eight antecedents of supplier satisfaction, as proposed by Hüttinger et al. (2014), was largely limited to relational or non-economic antecedents.

According to Hald et al. (2009), suppliers prefer a small number of customers. This allows them to rationalise their product offering, derive economies of scale by producing large volumes of reduced product variants for a limited number of

customers, concentrate the marketing effort and reduce the logistics burden, all of which contribute to cost reductions in the long run. This has a significantly positive impact on their own cost base which can be passed on to customers as preferential pricing, a virtuous cycle if well managed. From an economic perspective, profitability was viewed as an important and positive contributor towards supplier satisfaction. Profitability was therefore included in the investigation. In accordance with the view of Vos et al. (2016, p.4614), it was proposed that:

H1i: *The perceived profitability of the relationship between a supplier and a customer has a statistically significant positive impact on supplier satisfaction.*

2.6.10. Broad-Based Black Economic Empowerment

In addition to the nine potential antecedents of supplier satisfaction that were proposed (Hüttinger et al., 2014; Vos et al., 2016), a tenth antecedent, namely BBBEE was proposed as being relevant in the South African context. BBBEE is unique when compared to the other nine antecedents in that it has the potential to yield both relational and economic value. In South Africa, from a relational perspective, BBBEE suppliers, by virtue of their empowerment status, are more likely to benefit from preferential treatment in terms of business support through incubation processes or sales volumes that are earmarked for black business. From a commercial perspective, large buying firms, such as Kumba, prioritise BBBEE suppliers and offer them direct financial assistance coupled to lucrative commercial terms in order to meet their own BBBEE compliance targets (Braod Based Socio-Economic Charter for the Mining and Minerals Industry, 2018). From a supplier satisfaction standpoint, the author assumed that BBBEE suppliers were more likely to enjoy a higher degree of satisfaction when compared to their non-BBBEE counterparts because of the exclusive privileges afforded to BBBEE suppliers. Since BBBEE compliance is important for large buying firms, the following hypothesis was proposed :

H1j: *BBBEE status has a statistically significant positive impact on BBBEE supplier satisfaction.*

2.7. Supplier relationship management for tactical procurement

According to Li et al. (2006), competitive advantage is the outcome of an organisation's ability to differentiate itself from its competitors. In highly contested markets, supply chain best practises, such as supplier relationship management (SRM), are viewed as strategic differentiators and in many cases, the sole source of competitive advantage. For the purpose of creating competitive advantage, Schiele et al. (2012) acknowledges SRM as a vehicle to access supplier technologies and innovation. In order to maintain a competitive advantage, Hüttinger et al. (2012) recommend a specialized portfolio management strategy that is focussed on long-term value creation through SRM as opposed to short-term, lowest purchase price savings.

SRM is thus highlighted by several scholars as procurement best practise. However, in reality, SRM is rarely used effectively if at all, and is mostly overshadowed by conventional procurement practices. Whereas conventional procurement has sought to maximise bargaining power and minimise dependence on suppliers (Dyer, Cho, & Chu, 1998), contemporary SRM is expected to forge strategic partnerships for the purpose of equitable and sustained value. Pulles, Veldman, and Schiele (2016) endorse the contemporary paradigm of SRM. Most importantly, the authors clearly articulate the management challenge for supply chain practitioners as the pursuit of collaborative partnerships with the best suppliers in the market given a limited pool of capable suppliers which every rival company is competing for. However, in order to establish successful collaborative partnerships, buying firms should be attuned to the needs and perceptions of suppliers. Moreover, the human and relational capital needed to maintain these partnerships is central to the sustained success of any SRM programme.

2.8. Conclusion

Supplier satisfaction is a critical aspect of any buyer-supplier relationship. Ultimately, the utility of supplier satisfaction as a construct lies in the insights that it provides to measure and manage the overarching success of such relationships. Accordingly, supplier satisfaction is explained as the outcome of a range of economic and relational factors that is managed effectively by a buyer and its suppliers. When suppliers are satisfied, they are more inclined to confer preferred customer status upon a buying firm and improve the relational dynamics between

the firms. However, preferred customer status also comes with obligations such as shared risks and rewards, which have to be honoured.

By virtue of being a preferred customer, buying firms gain access to supplier resources, which are better than those offered to its competitors. Competitive advantage is therefore an outcome of preferred customer status (Pulles, Schiele, et al., 2016). Conversely, competitive advantage can be severely compromised if a buying firm is unable to secure strategic resources, that is, it is only capable of securing inferior or entry level resources compared to those offered to its competitors. Pursuing and achieving preferred customer status for the purpose of gaining access to supplier resources and capabilities to acquire competitive advantage is therefore a strategic priority for any industrial buying firm.

The literature reveals that mature supply chain structures form the bedrock of mutually beneficial partnerships. Buying firms are thus advised and encouraged to develop both relational and economic SRM capabilities to secure competitive advantage. These capabilities include effective supplier segmentation, developing bespoke supplier strategies (Chavhan, Mahajan, & Joshi Sarang, 2018) and co-investment in supply chain structures that enable integration, collaboration and risk mitigation. Regular supplier satisfaction surveys are also recommended, especially for those suppliers considered to be of strategic importance, to assess and manage the health of the relationship on an ongoing basis. This study takes a relational and economic outlook on the dimensions of supplier satisfaction and preferred customer status. These are discussed further in *Chapter 3: Conceptual model and hypotheses*, wherein an adapted conceptual model with research hypotheses is presented.

CHAPTER 3: CONCEPTUAL MODEL AND HYPOTHESES

3.1. Research aim

This research is focused on the interaction between Kumba and its suppliers to investigate how Kumba as the buyer/ customer could enhance and revise its relationship with its suppliers in terms of the nature and level of interaction to achieve preferred customer status. The study specifically explored the relevance and contribution of selected antecedents to enhance supplier satisfaction and achieve preferred customer status for the purpose of augmenting the buyer-seller interaction to the benefit of both parties.

3.2. Conceptual model

For the purpose of this study, an adapted version of the conceptual model (Figure 4) offered by Vos et al. (2016) was used to structure this research. Considering the model from right to left, industrial buyers are conferred with preferred customer status when their suppliers are satisfied whereas supplier satisfaction is realised when the preconditions for a range of relational and economic dimensions are satisfied.

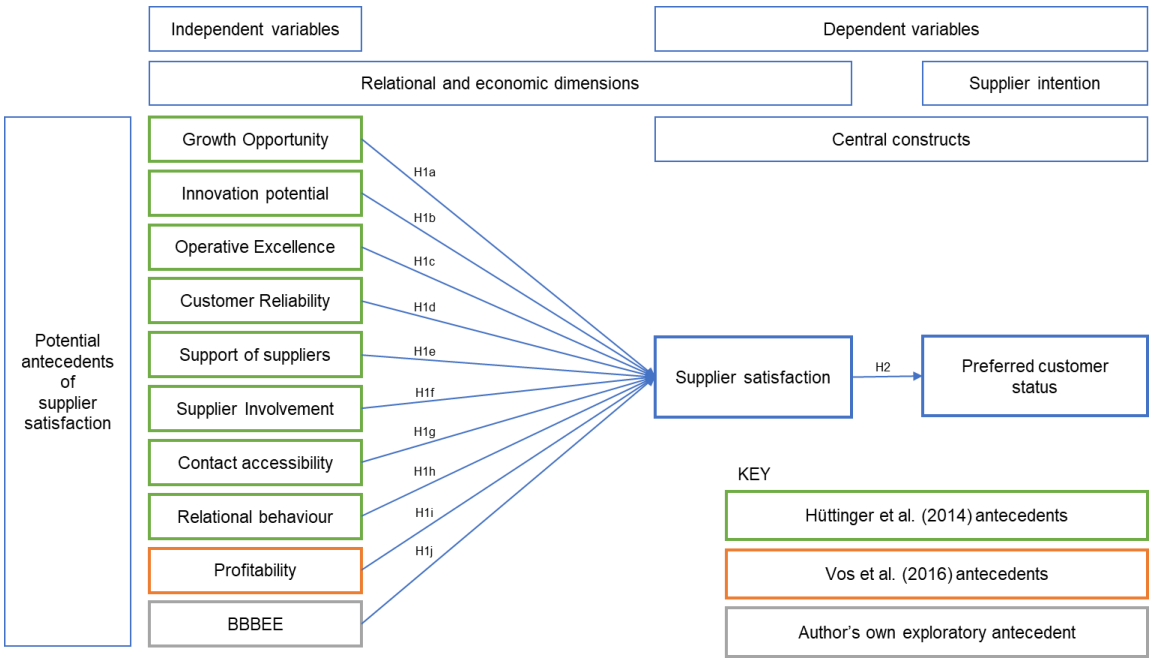

Figure 4. Conceptual model (adapted from Vos et al., 2016, p.4615)

Nine dimensions of supplier satisfaction (Hüttinger et al., 2014; Vos et al., 2016) were considered for testing as potential antecedents. Given its relevance to the South African context, an additional tenth dimension of supplier satisfaction, namely BBBEE, was included in the list of potential antecedents. Preferred customer status as a consequence of supplier satisfaction was included as a second hypothesis. Further to the conceptual model, a third hypothesis comparing supplier satisfaction between BBBEE suppliers and non-BBBEE suppliers was incorporated to test whether BBBEE status offered any relational/ economic advantages within a buyer-supplier dyad. A fourth and final hypothesis, testing the relationship between the length of a commercial relationship with a buying firm and supplier satisfaction, was also investigated.

3.3. Research hypotheses

The hypotheses presented in *Section 3.3.1 Hypothesis 1: Supplier satisfaction and its antecedents* and *Section 3.3.2 Hypothesis 2: Supplier satisfaction and customer status* with respect to the antecedents of supplier satisfaction, supplier satisfaction and preferred customer status were identified from existing literature. For the purpose of additional insights, two supplementary hypotheses, presented in *Section 3.3.3 Hypothesis 3: BBBEE status and supplier satisfaction* and *Section 3.3.4 Hypothesis 4: Length of relationship and supplier satisfaction* respectively, were formulated by the author and included for testing.

3.3.1. Hypothesis 1: Supplier satisfaction and its antecedents

Using the conceptual model presented in Figure 4, the relationship between the potential antecedents of supplier satisfaction and supplier satisfaction were tested for statistical significance. The hypotheses, all related to the antecedents of supplier satisfaction, were deduced from literature to be tested. These are listed as:

H1a: *Growth opportunity for suppliers has a statistically significant positive impact on supplier satisfaction.*

H1b: *Innovation potential for suppliers has a statistically significant positive impact on supplier satisfaction.*

H1c: *Customers' operative excellence has a statistically significant positive impact on supplier satisfaction.*

H1d: *Customers' reliability has a statistically significant positive impact on supplier satisfaction.*

H1e: *Customers' support of suppliers has a statistically significant positive impact on supplier satisfaction.*

H1f: *Customers' supplier involvement has a statistically significant positive impact on supplier satisfaction.*

H1g: *Customers' contact accessibility has a statistically significant positive impact on supplier satisfaction.*

H1h: *Customers' relational behaviour toward suppliers has a statistically significant positive impact on supplier satisfaction.*

H1i: *The perceived profitability of the relationship has a statistically significant positive impact on supplier satisfaction.*

H1j: *The perceived importance of BBBEE status has a statistically significant positive impact on supplier satisfaction*

3.3.2. Hypothesis 2: Supplier satisfaction and customer status

This study hypothesised that suppliers confer preferred customer status upon buying firms as a consequence of their own level of satisfaction with the buying firm in question. Thus, the relationship between supplier satisfaction and preferred customer status was tested to establish whether preferred customer status is indeed an outcome of supplier satisfaction. Based on literature it was proposed that:

H2: *Supplier satisfaction has a statistically significant positive impact on the tendency to award the buying firm preferred customer status.*

3.3.3. Hypothesis 3: BBBEE status and supplier satisfaction

A third hypothesis that compared the supplier satisfaction of BBBEE suppliers with that of non-BBBEE suppliers (author's own) was tested for differences :

H3: *BBBEE suppliers are more satisfied than non-BBBEE suppliers*

3.3.4. Hypothesis 4: Length of relationship and supplier satisfaction

A fourth hypothesis that investigated the effect of the length of a commercial relationship with Kumba on supplier satisfaction was tested:

H4: *Supplier satisfaction improves with the length of a commercial relationship between a buyer and a supplier*

3.4. Conclusion

The hypotheses presented in this chapter were deduced from extant literature. In *Chapter 4: Research design and methodology*, the research design and methodology that was followed to gain relevant evidence to test the hypotheses is discussed.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1. Introduction

Supported by the literature review presented in *Chapter 2: Literature review*, and the hypotheses presented in *Chapter 3: Conceptual model and hypotheses*, this chapter presents the research design and methodology used for conducting this empirical study. It describes the research philosophy, the rationale behind the proposed measurement instrument, the administration of the measurement instrument, the approach to data collection and an outline of the statistical tests that were conducted. Further, the applicable quality controls to eliminate error, including validity and trustworthiness of the entire research process as well as measures to ensure ethical conduct are discussed.

4.2. Research philosophy and approach

This study adopted a positivist philosophy (Saunders, Lewis, & Thornhill, 2012) to quantify the satisfaction of suppliers that provide Kumba with goods and services. Existing theory was used to identify the central constructs related to this study, namely, supplier satisfaction and its associated antecedents as well as preferred customer status. Using Kumba as the focal company or the buying firm in question, a hypothetico-deductive approach (Ketokivi & Choi, 2014) was followed to conduct an empirical assessment of supplier satisfaction and preferred customer status. Primary data was sourced using a supplier satisfaction survey administered to the supplier base of Kumba. A questionnaire was structured to test the four hypotheses related to the following objectives:

i. To quantify and distinguish the antecedents that are relevant to ensure supplier satisfaction for suppliers to Kumba, a buying firm in the mining industry;
ii. To describe the relationship between the relevant antecedents of supplier satisfaction and supplier satisfaction for Kumba;
iii. To determine to impact of BBBEE status on supplier satisfaction; and
iv. To determine the relevance of the period of commercial interaction between suppliers and Kumba with respect to supplier satisfaction

Research conducted by Hüttinger et al. (2014) and Vos et al. (2016) served as the foundation to design the measurement instrument and supplier satisfaction survey

questions required to test the relationship between the constructs and their antecedents.

4.3. Proposed research methodology and design

4.3.1. Research strategy and methodological choices

This quantitative study followed a deductive approach using theory from existing literature to formulate the research problem, deduce the research aim and relevant research objectives (Saunders et al., 2012). A mono method, quantitative survey strategy was used to elicit supplier perceptions relating to the antecedents of supplier satisfaction. The survey was administered only once to the sample, making the research cross sectional in design. The use of a survey strategy had distinct benefits consistent with a positivist approach, namely, the study of a sample of respondents in a uniform and consistent manner without the researcher's influence on the respondents' interpretation of the questionnaire (Ping, 2004). As a correlation study, this study was directed by survey items previously devised by Hüttinger et al. (2014) and Vos et al. (2016) that was adapted in terms of the identified research objectives. As per the hypotheses proposed in *Chapter 3*: *Conceptual model and hypotheses*, appropriate statistical analyses were used to distinguish and validate the antecedents that are relevant to supplier satisfaction in the context of the mining industry. Supplier satisfaction and preferred customer status were also surveyed as constructs in their own right. Finally, the relationship between the central constructs, supplier satisfaction and preferred customer status were tested.

4.3.2. Time horizon

Market dynamics have a direct impact on the effectiveness of procurement within the supply chain management function, the value that can be delivered by procurement as well as buyer-supplier relationships which are subject to constant change (Tan, 2001). Accordingly, the research is cross-sectional (Saunders et al., 2012) given the volatile nature of commodity markets and a supplier base that is in a constant state of flux. A cross-sectional time horizon was also preferred because of the time constraints which the researcher considered for the purpose of data collection and analyses.

4.3.3. Population

This study employed the supplier base of Kumba, approximately 1,700 suppliers, as the population available for solicitation. Kumba is one of four South African business units within a global mining house. Kumba's supplier database is thus a subset of the mining house's global supplier database. Kumba has a diverse set of suppliers, some of whom are designated 'approved supplier' status for the entire mining house. In turn, some of these approved suppliers are signatories to transversal contracts, that is, they are global suppliers in their own right and supply to all business units across the globe. While some suppliers to Kumba are designated 'approved supplier', others are simply registered suppliers with Kumba. Kumba conducts business with approved suppliers only, however there are many dormant approved suppliers. Certain suppliers, while formally approved as suppliers, never conducted business with Kumba at all. These suppliers were eliminated from the survey population. To address these peculiarities and to avoid potential confusion among respondents, the survey questionnaire, when communicated to respondents, was explicit in terms of the business unit under study. This was especially applicable to those suppliers who enjoy transversal contracts with the global mining house. Further, for the purpose of evaluating buyer-supplier relationships from a South African perspective, Kumba's database of suppliers were surveyed to evaluate supplier satisfaction with respect to Kumba, as a South African business unit, only.

4.3.4. Unit of analysis

For this study, suppliers to Kumba constitute the unit of analysis (Keller, 2019) while Kumba is the focal company or buying firm under consideration within a buyer-supplier relationships. As discussed previously, the global mining house has four business units within South Africa. In some instances, suppliers provide goods and services to all business units based on transversal contracts, the output of a global sourcing process. Suppliers may also be physically near or far depending on the location of their own operations relative to each of the mining operations. For example, a transversal supplier of industrial fasteners located in Johannesburg is further from the mining house's operations in the Northern Cape than it is from their operations in Mpumalanga. In each instance the supplier is confronted with a unique set of logistics and operational challenges. For this reason, suppliers to Kumba were explicitly identified as the unit of analysis to elicit their individual

experience in terms of satisfaction with Kumba. This approach was pursued to ensure that respondents were clear as to which business unit was being referenced as well as prevent confusion, misunderstanding or hesitance on the part of respondents.

4.3.5. Sampling method and control variables

In their research, Pulles et al. (2016) received a response of 9% (or 91 responses) using a random sample of one thousand suppliers from a manufacturer's database. With the exceptions described in *Section 4.3.3 Population*, this study targeted the entire contingent of suppliers within Kumba's database with the intention to maximise the number of useable responses. Assuming a similar rate of response, 10% of 1500 suppliers (reduced by virtue of exceptions) or approximately a minimum of 150 responses was anticipated.

Four control variables were used for sampling:

1. Small, medium and micro enterprise (SMME) status – an indicator of the size of the company based on number of employees only (Smit, 2012). SMME status was selected to understand the level of supplier satisfaction that exists between suppliers of varying size and a large buying firm. This control variable was selected as a trade-off against quantum of business conducted or spend with the buying firm to gain insight into supplier satisfaction as a function of company size. In general, buyer spend in Rand amount appears commensurate with the size of a supplier. However, as a rule, this does not hold, since buying firms may typically purchase goods/ services based on need and reliability of a supplier as opposed to the size of a supplier;

2. BBBEE status – a binary control variable where respondents were expected to confirm their BBBEE status with a 'Yes' or a 'No'. BBBEE status was selected as a control variable to gain insight into supplier satisfaction as a function of empowerment status. The conceptual model in Figure 4 provided by Vos et al. (2016) was adapted to incorporate BBBEE as an antecedent of supplier satisfaction;

3. Supplier activity status – a binary control variable, where respondents were expected to confirm whether they were currently conducting business with Kumba with a 'Yes' or a 'No'. Suppliers who conducted business with Kumba in the past, even though currently inactive, were retained based on their potential to provide a perspective on supplier satisfaction in the context of no longer conducting business with Kumba.

4. Length of commercial relationship – the period for which a supplier has conducted business with Kumba (Nagati & Rebolledo, 2013; Kleyn, Abratt, Chipp, & Goldman, 2012). Length of relationship was included as a control variable because it was found to be a significant predictor of supplier benevolence (Hill, Eckerd, Wilson, & Greer, 2009; Vos et al., 2016). Suppliers who responded "Never", that is, firms that have never conducted business with Kumba, were excluded from the sample. Accordingly, the duration of a commercial relationship served to gain insight into whether supplier satisfaction improved with the duration of commercial relationship.

4.3.6. Measurement instrument

Based on the conceptual model presented in Figure 4, a measurement instrument comprising a detailed questionnaire was developed to investigate the two central constructs, namely supplier satisfaction and preferred customer status.

The questionnaire consisted of three sections:

1. Section A – Demographics;
2. Section B – Antecedents of supplier satisfaction; and
3. Section C – Supplier satisfaction and preferred customer status.

4.3.6.1. Section A: Demographics

The demographics section comprised six questions to profile the supplier firm itself and the respondent who completed the questionnaire on behalf of the supplier firm. Nominal and categorical scales were used. A request for the company name of a responding supplier and/ or its representative respondent were explicitly omitted to ensure that confidentiality was uncompromised and their interaction with Kumba

going forward was not disadvantaged in any way whatsoever. The six questions are detailed below:

1. Question 1

The positional level of the respondent within the supplier organisation (Kleyn et al., 2012);

1. Board member/ CEO/ Managing Director
2. Owner/Partner
3. General manager
4. Procurement/ Supply chain expert
5. Administrator/ Clerical
6. Other

2. Question 2

The number of years of logistics and supply chain management experience of the respondent;

1. Less than 1 year
2. Between 1 and 5 years
3. Between 5 and 10 years
4. Between 10 and 15 years
5. More than 15 years

3. Question 3

The SMME status of the supplier firm (Revised Schedule 1 of the National Definition of Small Enterprise in South Africa, 2019):

1. Large enterprise (more than 250 employees)
2. Medium enterprise (51-250 employees)
3. Small enterprise (11-50 employees)
4. Micro enterprise (0-10 employee/ s)

4. Question 4

The BBBEE status of the supplier firm;

1. Yes
2. No

5. Question 5

The activity status of the supplier firm (i.e. active or inactive supplier):

1. Yes
2. No

6. Question 6

Period of commercial interaction between the supplier firm and Kumba (Kleyn et al., 2012; Nagati & Rebolledo, 2013; Hill et al., 2009).

1. Never
2. Less than 1 year
3. Between 1 and 5 years
4. Between 5 and 10 years
5. More than 10 years

4.3.6.2. Section B: Antecedents of supplier satisfaction

Section B comprised questions relating to ten (10) potential antecedents of supplier satisfaction. Eight (8) antecedents based on the research conducted by Hüttinger et al. (2014) were included. However, the final questionnaire released for survey purposes, presented in Appendix A, was adapted to include two additional and explorative antecedents namely profitability (Vos et al., 2016) and BBBEE (authors own). A seven-point ordinal Likert-type agreement scale was implemented to measure suppliers' perceptions relating to these ten antecedents:

1) Disagree strongly
2) Disagree
3) Disagree somewhat
4) Undecided
5) Agree somewhat
6) Agree
7) Agree strongly

Because the data collected was ordinal in nature, the responses from supplier firms were subjective and therefore likely to incur respondent bias. An interval data scale was preferred; however, it was dismissed given its tendency to compromise the willingness of a respondent to participate. The items in this section of the

questionnaire were shuffled around so that respondents would not easily be able to relate similar items to a specific antecedent.

4.3.6.3. Section C – Supplier satisfaction and preferred customer status

In the final section of the questionnaire, another nine statements, related directly to the central constructs of this study, supplier satisfaction and preferred customer status were posed to respondents. A seven-point ordinal Likert-type agreement scale similar to that used in *Section B: Antecedents of supplier satisfaction,* of the questionnaire was used to measure suppliers' responses to these constructs.

4.4. Data gathering process

The researcher opted to make use of an online web-based survey tool, Survey Monkey™, to gather data efficiently, cost effectively and within a short space of time (Lefever, Dal, & Matthíasdóttir, 2007). With authorisation from Kumba acquired (see *Appendix C*), an email with a consent statement (see *Appendix D*) and hyperlink to Survey Monkey™, was sent to the identified suppliers. The web-based survey tool was then used to administer the measurement instrument to respondents and collect data. To minimise the possibility of supplier respondents misunderstanding the questions, the measurement instrument was appraised in terms of simplicity and ease of understanding by administering the instrument to a random group of ten pre-survey test respondents. With feedback received, the questionnaire was reworked and redesigned on Survey Monkey™.

Prior to formal distribution, the reworked online instrument was released again to another random set of pre-survey test respondents to ensure that the survey instrument within Survey Monkey™ was easy to use and capable of generating useable data sets. The online instrument was also verified in terms of duration to complete the questionnaire. Once again, the outcomes of the pre-test exercise was reviewed and the instrument was adjusted according to recommendations provided by Saunders et al. (2012). Based on the response time during the preliminary instrument testing exercise, an average response time of between 8-15 minutes was anticipated. Nevertheless, a 20-minute completion time was communicated to respondents in the consent statement (*Appendix D*) to allow for unforeseen eventualities. Once formally released for survey, respondents were reminded only once, via email, to complete the questionnaire after the original communication.

4.5. Data analysis

Data received from Survey Monkey™ was downloaded, scrubbed for incomplete or spoilt responses, formatted for analyses and stored in a secure database. Descriptive and inferential statistical analyses was conducted with the assistance of IBM's SPSS software.

4.5.1. Descriptive statistics

Nominal data was used to describe the demographics of the responses received. Mode and medians were used to describe measures of central tendency for Likert-type ordinal data. Similarly, frequencies were used as a measure of variability. Histograms and box plots were used to qualify percentiles and summarise descriptive antecedent data. The calculated modes and medians across the different antecedents were used to quantify perceptions relating to supplier satisfaction and preferred customer status.

4.5.2. Inferential statistics

Inferential statistics, inter alia exploratory factor analysis (EFA) followed by calculation of reliability coefficients, means, standard deviations, and percentage variance in the data were used to establish internal validity and draw conclusions concerning the relationship between the antecedents of supplier satisfaction and supplier satisfaction itself as well as supplier satisfaction and preferred customer status (Harpe, 2015). The following tests were used to conduct inferential analyses:

1. **Exploratory factor analysis (EFA) –** used to surface factors that explained the correlation between the dimensions of the antecedents and the antecedents themselves by reducing the number of independent dimensions and generating a summary of those dimensions that have the highest influence on the dependent variable.
2. **Kaiser-Meyer-Olkin (KMO) Measure** – used to measure the suitability or sampling adequacy of data for the purpose of factor analysis. Sampling adequacy measures the proportion of variance that results from underlying factors. This measure varies between 0 and 1, and values closer to 1 are better. A value of 0.6 is a suggested minimum. (Pallant, 2007).
3. **Bartlett's test of sphericity** – used to determine the utility of a factor analysis. This tests the null hypothesis that the correlation matrix is an identity matrix. An

identity matrix is a matrix in which all of the diagonal elements are 1 and all other elements are 0. Small values ($p < 0.05$) of the significance level indicate that a factor analysis may be useful for the data available (Pallant, 2007).

4. **Cronbach's α** – as an example, operative excellence as a potential antecedent may consist of multiple dimensions such as information sharing, collaborative planning and forecasting, integrated process design etcetera. These dimensions were grouped and tested for internal consistency using Cronbach's α. Thus, Cronbach's α was used to test for internal consistency or the reliability of the dimensions which collectively constitute a construct. A Cronbach's $\alpha \geq 0.7$ represents reliable consistency in the data (Taber, 2018).
5. **Spearman's correlation coefficient ρ** - a nonparametric measure of the strength of the relation that exists between two variables measured on an ordinal scale. This analysis was used to establish the significance of the relationship between the antecedents of supplier satisfaction and supplier satisfaction as well as between supplier satisfaction and preferred customer status.
6. **Mann-Whitney U test** – used to explain differences between samples from the same population when the criteria for a t-test were not met. The Mann-Whitney U test was used to test the hypotheses that the means of specific antecedents are the same. In this study, each supplier group within a stratified supplier base was considered a sample and could be compared to every other supplier group in terms of specific antecedents or dimensions. This test was typically used to identify differences between suppliers of different size or between suppliers that have a different period of association with Kumba. Data that described supplier size and period of association with Kumba was collected using Section A of the questionnaire.

4.6. Limitations of the study

This study considered supplier satisfaction, or the lack thereof, as a consequence of an existing relationships or a previous relationship between a buyer and its suppliers. Therefore, it excluded customer attractiveness as it relates to ex-ante attraction, that is, the attraction to a buying firm prior to a commercial relationship, or stated differently, before business is conducted with a buying firm (Hüttinger et al., 2014), which makes it irrelevant when focusing on how interaction with existing suppliers could be improved. Further, from a supplier perspective, it did not focus

on the attractiveness of a buying firm as a criterion for choosing to conduct business with a buying firm nor the potential for a random supplier to become a new supplier to a buying firm. New suppliers and their desire, or potential, to become a supplier and eventually a preferred supplier is related to the desire of a supplier to conduct business with a buying firm and therefore the attractiveness of the buying firm as a distinct construct.

Preferential treatment as a construct was also explicitly excluded from the scope of this study since it assumes supplier satisfaction, an antecedent of preferred customer status, and therefore ex-post attraction to a buying firm. In the adapted model presented in Figure 4, satisfaction was measured in terms of confirmation of suppliers' expectations. However, it could also be measured in terms of supplier perceptions against a set norm for confirmation of suppliers' expectations. According to Pulles et al. (2016, p.130), "In industrial buyer–supplier relationships, preferential treatment is more subtle and based on less formal criteria. Only a limited amount of buyers can attain the commitment of a supplier. If one buyer obtains, superior resources, then other buyers are ipso facto allocated inferior resources." On this basis, it was assumed that if a buying firm does not enjoy preferred customer status, it was unlikely to receive preferential treatment. Accordingly, an assessment of supplier satisfaction and therefore preferred customer status was viewed as sufficient to determine whether a buying firm received preferential treatment or not.

This study did not interrogate the interrelation between the antecedents of supplier satisfaction from a statistical perspective. Rather, it was focused on the relationship between the selected antecedents of supplier satisfaction and the central constructs. This study was also limited to eight antecedents that were considered relevant (Hüttinger et al., 2014), plus an additional two exploratory antecedents, profitability (Vos et al., 2016) and BBBEE (authors own). Other antecedents which are specific to other industries should be considered for future research. Researchers should also note that supplier satisfaction does not necessarily imply supplier effectiveness nor customer satisfaction.

4.7. Theoretical validity

Theoretical validity is about measuring what the research intended to measure and measuring it accurately (Winter, 2000). Validity therefore reflects how well a measure quantifies a construct that is not observable, and how this is achieved through relationships between observed variables (chosen in accordance with literature) and their unobserved variable (Ping, 2004). Using this logic, the conceptual model presented in Figure 4 presents the central constructs or unobserved variables (Hüttinger et al., 2014; Vos et al., 2016) as:

1. Supplier satisfaction; and
2. Preferred customer status.

Observed variables refer to those antecedents related to supplier satisfaction and preferred customer status (Hüttinger et al., 2014; Vos et al., 2016). These included:

1. Growth opportunity;
2. Innovation potential;
3. Operative excellence;
4. Reliability;
5. Support of suppliers;
6. Supplier involvement;
7. Customer accessibility; and
8. Relational behaviour.

In addition to the eight observed variables, two additional exploratory observed variables were included in this study, namely:

9. Profitability of the supplier in relation to Kumba (Essig & Amann, 2009; Vos et al., 2016); and
10. BBBEE status relevant in the South African context (authors own).

To ensure theoretical validity, the six-step process prescribed by Ping (2004), was followed, namely:

1. Defining constructs adequately based on literature;
2. Stating relationships among these constructs based on literature;

3. Developing measures of the constructs, searching literature for guidance;
4. Gathering data in a well organised manner;
5. Validating the measures; and
6. Validating the model (that is, testing the stated relationships among the constructs) through the relevant statistical procedures.

In compliance with the six-step process, a comprehensive literature review was conducted to define the central unobservable constructs and the antecedents and their observed variables. The relationship between the unobserved constructs as well as the relationship between the unobserved constructs and their associated observed constructs were defined in the hypotheses presented in *Chapter 3: Conceptual model and hypotheses*. Measures of the unobserved variables and their associated observed variables were defined in the questionnaire provided in *Appendix A.* Data for each of the defined observed variables were gathered using an online survey measurement instrument as described in *Section 4.3.6 Measurement instrument*. This was followed by statistical analyses to validate the conceptual model and the relevance of the observed variables. To ensure reliability, the length of the questionnaire was kept as short and specific as possible and the questions posed succinct and consistent in format to eliminate the potential for ambiguity or misunderstanding.

4.8. Ethical considerations

In the execution of this study, the researcher committed to abide by the research code of ethics defined by the University of Pretoria and the research principles espoused by the Gordon Institute of Business Science. The commitment included professional conduct in terms of industry dynamics, the need for complete confidentiality from a supplier perspective and the sensitivities relating to BBBEE most notably with respect to suppliers on probation or seeking sustained business opportunities from the buying firm.

Cognisant of these dynamics, the researcher aligned the aims and objectives of this study to address some of the pressing challenges that are currently facing the mining sector in a way that did not compromise Kumba or its suppliers. The researcher ensured that the identity of the supplier respondents were not revealed to Kumba and that any data collected from the same remained completely

confidential throughout the study and would be reported in an aggregated format only. As such, the research proposal was verbally presented to the General Manager for Supply Chain Management at Kumba for approval in principle, which was achieved. Written permission from Kumba to make use of its supplier database was also provided (*Appendix C*). At the request of Kumba, the researcher agreed that the identity of Kumba, as the subject of this research, would not be disclosed in any way whatsoever. Further the outcomes of this research report would not be released into the public domain

4.9. Ethical conduct

An individualised consent statement (*Appendix D*) included in the cover screen of the questionnaire, was used to communicate confidentiality, voluntary participation and the right to withdraw from the study at any point in time without negative consequences. The overall aim of the study was communicated to provide context for respondents and reasons to participate in the study were also provided. Further, contact details for the researcher and research supervisor were provided to enable respondents to verify the legitimacy of the study, clarify the objectives or raise any questions and concerns.

4.10. Data integrity

The study made use of data gleaned from authentic respondents and did not solicit responses from any third parties. With the exception of formatting the data for analysis in SPSS, data was not manipulated or fabricated. Incomplete data sets were removed to ensure statistical integrity.

CHAPTER 5: RESEARCH RESULTS

5.1. Introduction

This chapter details the findings of the data collected from the Survey Monkey™ online supplier satisfaction survey. With reference to the questionnaire in *Appendix-A,* and the associated conceptual model provided in Figure 4, this chapter was structured to provide an overview of the demographics of the respondents followed by an explanation of the results from the descriptive and inferential statistical analyses.

The inferential statistical analysis of the data began with exploratory factor analysis (EFA), a test for construct validity and a test for reliability. Correlation and regression analyses was then used to establish statistical significance between the observed variables and their associated constructs. The last two hypotheses, H3 and H4, which investigated the relationship between supplier satisfaction and BBBEE status as well as supplier satisfaction and the length of a commercial relationship respectively, are also discussed.

5.2. Response rate

Personalised requests to participate in an online supplier satisfaction survey were sent to 1500 potential respondents from Kumba's database of suppliers. From Table 1, a total of 472 responses were received, representing a response rate of 31%. Of the 472 responses received, 96 were removed because respondents did not complete varying sections or a combination of sections of the questionnaire leaving 376 fully completed responses.

Table 1. Summary of total responses received

	Frequency	Percent	Cumulative percent
Fully completed responses	376	79,7	79,7
Responses to biographic questions only	49	10,4	90,0
Responses to BBBEE/ biographic questions only	40	8,5	98,5
Incomplete responses to supplier satisfaction/ preferred customer status questions	7	1,5	100,0
Total number of responses received	472	100	

5.3. Demographics

5.3.1. Length of commercial relationship

Table 2 reflects the length of the commercial relationship suppliers have held with Kumba. The data indicates that 52.1% of the 376 supplier respondents, conducted business with Kumba for less than 5 years while more than 45% of suppliers conducted business with Kumba for more than 5 years. Table 2, in part, was also reflective of the pipeline of suppliers conducting business with Kumba. With reference to H4, the length of commercial relationship is explored further in *Section 5.5.8 Hypothesis 4: Supplier satisfaction and length of relationship,* to establish how supplier satisfaction changed with the duration of a commercial relationship with Kumba.

Table 2. Length of commercial relationship with Kumba

	Frequency	Percent	Cumulative percent
Never	7	1,9	1,9
Less than 1 year	46	12,2	14,1
Between 1 and 5 years	150	39,9	54,0
Between 6 and 10 years	78	20,7	74,7
More than 10 years	95	25,3	100,0
Total	376	100	

From the remaining 376 respondents, a further 7 respondents “Never” conducted business with Kumba at any point in time. These respondents were removed from the dataset leaving a balance of 369 fully completed responses available for statistical testing.

5.3.2. Position of respondents within supplier firms

From Table 3, more than 76% of all respondents who completed the questionnaire in full held senior positions within their firms.

Table 3. Position of respondents within supplier firms

	Frequency	Percent	Cumulative percent
Board member/CEO/Managing Director	119	32,2	32,2
Owner/Partner	115	31,2	63,4
General manager	43	11,7	75,1
Procurement/Supply chain expert	4	1,1	76,2
Administrator/Clerical	52	14,1	90,2
Other	36	9,8	100
Total number of respondents available for statistical testing	369	100	

5.3.3. Number of years of logistics and/ or supply chain experience

In terms of experience in the field of logistics and/ or supply change management, Table 4 indicates that more than 42% of all respondents had less than 5 years of experience while at least 57% of all respondents had more than 5 years of experience. Almost 25% of all respondents had more than 16 years of experience in this field.

Table 4. Years of logistics and/ or supply chain experience

	Frequency	Percent	Cumulative percent
Less than 1 year	49	13,3	13,3
Between 1 and 5 years	107	29,0	42,3
Between 6 and 10 years	68	18,4	60,7
Between 11 and 15 years	55	14,9	75,6
16 years and more	90	24,4	100
Total number of respondents available for statistical testing	369	100	

5.3.4. Number of micro, small, medium and large enterprises

Given the drive for BBBEE and localised procurement within the mining sector, the survey anticipated a large number of micro and small enterprises. However, Table 5 reveals that almost 46% of all supplier respondents were classified as large enterprises. More than 77% of respondents was accounted for by large and medium enterprises.

Table 5. Number of micro, small, medium, large enterprise

	Frequency	Percent	Cumulative percent
Large enterprise (more than 250 employees)	168	45,5	45,5
Medium enterprise (51-250 employees)	117	31,7	77,2
Small enterprise (11-50 employees)	54	14,6	91,9
Micro enterprise (0-10 employee/s)	30	8,1	100
Total number of respondents available for statistical testing	369	100	

5.3.5. Broad Based Black Economic Empowerment status

From Table 6, 312 supplier respondents (almost 85% of all respondents), indicated possession of official BBBEE status. 57 respondents, slightly over 15% of all respondents, did not have BBBEE status. With reference to H3, a random sample of 57 BBBEE respondents were compared to the 57 non-BBBEE suppliers.

Table 6. BBBEE status of supplier respondents

	Frequency	Percent	Cumulative percent
Yes	312	84,6	84,6
No	57	15,4	100,0
Total	369	100	

5.3.6. Active trading with Kumba

At the time of this survey, more than 90% of supplier respondents were actively trading with Kumba. As indicated previously, suppliers that conducted business with Kumba previously, however inactive at the time of conducting this survey, were retained because they did conduct business with Kumba at some point in the past and therefore did qualify to express an opinion relating to their experience in dealing with Kumba.

Table 7. Supplier firms actively trading with Kumba

	Frequency	Percent	Cumulative percent
Yes	334	90,5	90,5
No	35	9,5	100
Total number of respondents available for statistical testing	369	100	

5.4. Descriptive statistics

With reference to the conceptual model in Figure 4, a discussion of the descriptive statistics for the central constructs (*Appendix B1*) and the antecedents of supplier satisfaction (*Appendix B2)* are provided in this section.

5.4.1. Central constructs

5.4.1.1. Supplier satisfaction

As depicted in Table 8, mean values for items related to supplier satisfaction varied between 5.23 and 6.14 while the mode and median for all items were rated 6 or “Agree” suggesting that the majority of suppliers perceived their relationship with Kumba as satisfactory.

Table 8. Descriptive statistics for supplier satisfaction

Item number	Central construct	Item code	N	Mean	Std. Deviation	Median	Mode
1	Supplier satisfaction	SuppSat1	369	5,23	1,650	6,00	6
2		SuppSat2	369	5,93	1,171	6,00	6
3		SuppSat3	369	6,04	1,169	6,00	6
4		SuppSat4	369	6,14	1,123	6,00	6

5.4.1.2. Preferred customer status

From Table 9, mean values for preferred customer status varied between 5.23 and 5.56. With a median and mode of 6 or “Agree” for all items tested, the majority of suppliers perceived Kumba as a preferred customer.

Table 9. Descriptive statistics for preferred customer status

Item number	Central construct	Item code	N	Mean	Std. Deviation	Median	Mode
5	Preferred customer status	PrefCust1	369	5,53	1,518	6,00	6
6		PrefCust2	369	5,29	1,632	6,00	6
7		PrefCust3	369	5,23	1,679	6,00	6
8		PrefCust4	369	5,56	1,521	6,00	6
9		PrefCust5	369	5,28	1,542	6,00	6

5.4.2. Antecedents of supplier satisfaction

5.4.2.1. Growth opportunity

With reference to Table 10, mean values for items linked to growth opportunity varied between 4.43 and 5.58 reflecting a greater variance in supplier perceptions related to growth opportunity with Kumba. With a median and mode of 6 for item 2, namely, Kumba is important for growth rates, at least half of all suppliers agreed that Kumba was a source of growth and opportunity. However, the other half of respondents were either “Undecided” or “Disagreed” with this assertion. Similarly, half of all supplier respondents agreed that Kumba provided them with an opportunity to dominate, grow and exploit their respective market segments while the other half were “Undecided” or “Disagreed”.

Table 10. Descriptive statistics for growth opportunity

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
1	Growth opportunity	GrowthOpp1	369	4,43	1,724	5,00	6
2		GrowthOpp2	369	5,58	1,450	6,00	6
3		GrowthOpp3	369	4,46	1,716	5,00	6

5.4.2.2. Innovative potential

From Table 11, mean values for the items associated with innovative potential varied between 4.09 and 4.18 suggesting that on average, suppliers were “Undecided” about the potential to collaborate with Kumba in terms of innovation and new product development. A review of the medians and modes suggest

potential for new product development, however undecidedness about the efficiency with which these products could be introduced to the market. From these results, it may be surmised that suppliers believe there is potential to innovate and develop new products in collaboration with Kumba, however this has not materialised or, where it has materialised, time to market is still a matter that requires attention for at least half the respondents.

Table 11. Descriptive statistics for innovative potential

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
4	Innovative potential	InnovPot1	369	4,09	1,800	4,00	6
5		InnovPot2	369	4,18	1,674	4,00	4
6		InnovPot3	369	4,15	1,563	4,00	4

5.4.2.3. Operative excellence

In Table 12, mean values for items linked to operative excellence varied between 4.01 and 4.56 indicating that on average, suppliers were “Undecided” about the operational effectiveness of Kumba. An analysis of the medians and modes suggest that Kumba does exhibit pockets of excellence such as simple and transparent processes and reliable forecasting. However, at most, this was not experienced by half of all supplier respondents, who were either “Undecided” or “Disagreed” that Kumba was effective. With respect to item 10 namely, Kumba supports short decision-making processes, respondents were undecided about Kumba’s ability or appetite for prompt decision-making.

Table 12. Descriptive statistics for operative excellence

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
7	Operative excellence	OpExcel1	369	4,54	1,636	5,00	6
8		OpExcel2	369	4,01	1,799	4,00	6
9		OpExcel3	369	4,56	1,731	5,00	6
10		OpExcel4	369	4,18	1,567	4,00	4

5.4.2.4. Reliability

From Table 13, mean values for the items related to buyer reliability varied between 5.03 and 5.52 suggesting that on average, suppliers considered Kumba to be somewhat reliable or trustworthy. From a median and mode perspective, at least half of all respondents agreed that Kumba was reliable and could be trusted to behave in a manner that was truthful, ethical and free from exploitation. However,

based on the number of respondents who “Disagreed”, at least 10% of all suppliers did experience some form of untoward behaviour at some point in time.

Table 13. Descriptive statistics for reliability

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
11	Reliability	Rely1	369	5,06	1,619	6,00	6
12		Rely2	369	5,03	1,437	5,00	6
13		Rely3	369	5,52	1,553	6,00	6
14		Rely4	369	5,19	1,567	6,00	6

5.4.2.5. Support of suppliers

In Table 14, mean values for support offered varied between 3.96 and 5.18 suggesting that suppliers were “Undecided” or “Agreed somewhat” about the level of support received from Kumba on average. The data suggests that at least 35% of respondents did receive some form of support. Support of suppliers is also related to BBBEE status since empowered suppliers are often the beneficiaries of financial and operational support.

Table 14. Descriptive statistics for support of suppliers

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
15	Support of suppliers	Support1	369	4,04	1,679	4,00	4
16		Support2	369	3,96	1,794	4,00	4
17		Support3	369	5,18	1,612	6,00	6

5.4.2.6. Supplier involvement

From Table 15, the mean values for the items related to supplier involvement varied between 3,92 and 4,95 suggesting that, on average, suppliers were either “Undecided” or marginally included in the product development of Kumba.

Table 15. Descriptive statistics for supplier involvement

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
18	Supplier involvement	SuppInv1	369	3,92	1,840	4,00	2
19		SuppInv2	369	4,02	1,683	4,00	4
20		SuppInv3	369	4,07	1,744	4,00	4
21		SuppInv4	369	4,95	1,723	6,00	6

With the exception of Item 21, namely strong close and effective communication between Kumba and its suppliers, responses to supplier involvement were mixed and did not provide compelling insights.

5.4.2.7. Contact accessibility

From Table 16, the mean values for the items related to contact accessibility range from 4.22 to 4.98. On average, this suggests that suppliers were “Undecided” or in “Somewhat agreement” that Kumba had the necessary human resources to coordinate its relationship with suppliers. However, based on the median (6) and mode (6) for Items 22 and 23, namely coordination and partnerships respectively, more than half of all suppliers agreed that Kumba does coordinate and maintain its partnerships with suppliers through a designated contact person. Together, these two perspectives recognise the presence of dedicated personnel even if insufficient to address their concerns with the relationship. Respondents were divided in terms of how their concerns were escalated and/ or dealt with inside the buying organisation, implying a lack of transparency for suppliers wanting to resolve partner-specific issues.

Table 16. Descriptive statistics for contact accessibility

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
22	Contact accessibility	ContAcc1	369	4,91	1,672	6,00	6
23		ContAcc2	369	4,98	1,600	6,00	6
24		ContAcc3	369	4,22	1,734	4,00	6

5.4.2.8. Relational behaviour

With reference to Table 17, mean values for the items related to relational behaviour varied between 4.06 to 5.33. On average, this suggests “Undecided” and/ or in “Somewhat agreement” with the items surveyed. A review of the mode and median data for the items listed suggest that the majority of suppliers do perceive Kumba as committed to the supplier relationship and willing to address problems jointly. However, the majority of suppliers were undecided about whether rewards and costs were shared equitably.

Table 17. Descriptive statistics for relational behaviour

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
25	Relational behaviour	RelBe1	369	4,82	1,634	5,00	6
26		RelBe2	369	4,98	1,573	5,00	6
27		RelBe3	369	5,33	1,519	6,00	6
28		RelBe4	369	4,06	1,682	4,00	4
29		RelBe5	369	4,48	1,708	5,00	6
30		RelBe6	369	4,68	1,670	5,00	6

5.4.2.9. Profitability

From Table 18, the mean values for items associated with profitability varied between 5.22 and 5.80 indicating that on average, suppliers “Agreed” that their relationship with Kumba was profitable and sustainable. A review of the median and mode data indicated that the majority of suppliers perceived their relationship with Kumba as profitable and sustainable. Most notably, profitability and sustainability was possible even though almost 90% of all suppliers offered Kumba favourable pricing.

Table 18. Descriptive statistics for profitability

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
31	Profitability	Profit1	369	5,22	1,490	6,00	6
32		Profit2	369	5,26	1,538	6,00	6
33		Profit3	369	5,80	1,287	6,00	6

5.4.2.10. Broad Based Black Economic Empowerment

In Table 19, mean values for the items related to BBBEE varied between 3.60 and 4.51. On average, this suggests that BBBEE suppliers either “Disagree” or were “Undecided” about whether BBBEE status offered any advantages. Median and mode data suggest that the majority of suppliers did not perceive any growth nor improvements in the relationship as a consequence of BBBEE status. Further multiple modes (1 and 2) for financial support (Item 36) reflect that just over 40% of suppliers either “Disagree” or “Strongly disagree” with the notion of sufficient financial support from Kumba. 29% of respondents acknowledged sufficient financial support while 15% were “Undecided”. This has to be contextualised against the backdrop of profitability, discussed in the previous section, where 90% of suppliers provided Kumba with favourable pricing.

Table 19. Descriptive statistics for BBBEE

Item number	Antecedent	Item code	N	Mean	Std. Deviation	Median	Mode
34	BBBEE	BEE1	312	4,51	1,839	5,00	6
35		BEE2	312	4,21	1,889	4,00	6
36		BEE3	312	3,60	1,945	4,00	1[a]
a. Multiple modes exist. The smallest value is shown							

5.5. Inferential statistics

5.5.1. Exploratory factor analysis (EFA)

From theory (Vos et al., 2016), as depicted in Figure 5 below, four items were linked to supplier satisfaction, five items were linked to preferred customer status, and collectively, thirty-six items were linked to the ten theoretical antecedents (or factors) of supplier satisfaction. Exploratory factor analysis (EFA) was used to understand the strength of the interrelationship between these items and potentially reduce them to form a smaller and manageable number of factors (Pallant, 2007). Once the factors were established, tests for validity and reliability were conducted to ensure the empirical integrity of the model. For the purpose of the EFA, all respondents who did not complete the questionnaire in full were eliminated leaving a population of 369 respondents (N=369). Because the model included BBBEE as a potential antecedent, a further 57 respondents who did not possess BBBEE status were removed to create a sample of 312 fully completed responses (N=312). Given an adequate sample size (Pallant, 2007), the results of the EFA are presented herein.

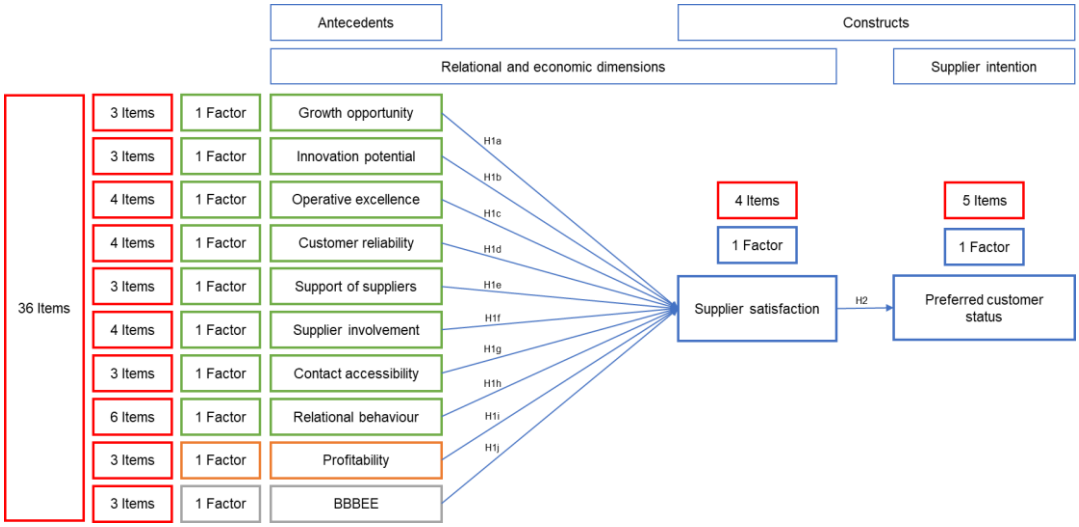

Figure 5. Theoretical items, factors, antecedents and constructs

5.5.1.1. Validity of data

Prior to initiating the factor analysis, the validity of the data for an EFA was confirmed. Supplier satisfaction and preferred customer status were considered as distinct constructs while the antecedents of supplier satisfaction were considered collectively. The final correlation matrices for these three components are presented separately in *Appendix B3*. A correlation coefficient is a value between 0 and 1, the closer to 1, the higher the correlation (Pallant, 2007). Inspection of the correlation matrices for items related to supplier satisfaction, preferred customer status and the antecedents of supplier satisfaction respectively, revealed a substantial number of coefficients above 0.3 indicating a high degree of correlation in general. Items for supplier satisfaction and preferred customer status respectively were highly correlated. With respect to the antecedents for supplier satisfaction, correlation coefficients between certain items such as Rely3 and BEE1, BEE2 and BEE3 fell below 0.3. Notwithstanding, the majority of coefficients were above 0.3. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were also used to validate the dataset for factor analysis (Pallant, 2007). From Table 20, the KMO measure of sampling adequacy for supplier satisfaction, preferred customer status and the antecedents of supplier satisfaction were greater than 0.6 (KMO > 0.6). The Sig. values for the Bartlett's test of sphericity was less than 0.05 (p-value < 0.05). The results of correlation matrices together with the results for the KMO and Bartlett tests confirmed that factor analysis was appropriate.

Table 20. Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity

		Supplier satisfaction	Preferred customer status	Antecedents
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,811	0,861	0,960
Bartlett's Test of Sphericity	Approx. Chi-Square	1044,527	1524,083	8313,840
	df	6	10	595
	Sig.	0,000	0,000	0,000

5.5.1.2. Anti-image correlation matrices

Anti-image correlation matrices provide measures of sampling adequacy (MSA). Items with a MSA measure less than 0.6 (MSA < 0.6) indicate weak items, that is, a MSA value greater or equal to 0.6 (MSA ≥ 0.6) indicate strong items (Pallant, 2007). A summary of MSA values for the items are presented in *Appendix B4*. MSA values for all items varied between 0.75 and 0.98. Since none of the items had anti-image correlation coefficients that fell below the recommended threshold of 0.6, no items were deemed weak nor excluded from the factor analysis.

5.5.1.3. Communalities

Communalities explain how much of the variance can be explained by each item. Items with low values for communality (< 0.3) indicate that those items did not fit well within a component (Pallant, 2007). Likert scale data is usually skewed. Therefore, principal axis factoring (PAF) was used to extract communality values since it does not make any assumptions with respect to distributions (Osborne, 2015). A review of the communality values revealed that the majority of items were greater than 0.3. However, in the review of antecedent communalities, Profit3 was found to have a communality value of 0.1, lower than the threshold value of 0.3. As a weak item, Profit3 was removed and the values for communality recalculated. The communality values before and after the removal of Profit 3 are provided in *Appendix B5*.

5.5.1.4. Suitability of data

The correlation matrix (*Appendix B3*), the anti-image correlation coefficients (*Appendix B4*) and the communality values (*Appendix B5*) reflect the results of the statistical analysis after the removal of Profit3. With Profit3 removed, all correlation coefficients were greater than 0.3, all MSA measures greater than 0.6 and all communality value well above 0.3, indicating that all items were well suited to other items within their respective factors.

5.5.1.5. Kaiser criterion

The Kaiser criterion was used to determine the number of factors can be extracted for each construct or antecedent. Eigenvalues for a factor represent the amount of variance that can be explained by the factor being considered (Pallant, 2007). Factors that have an eigenvalue of 1 or more qualified as valid factors that were applicable to the theoretical constructs. Tables that explain the variance for each of the constructs are provided below.

5.5.1.5.1 Supplier satisfaction

In Table 21, only one factor reflected an eigenvalue (3.127) greater than 1. This single factor accounted for 78.17% of the total variance. This implies the extraction of a single factor for supplier satisfaction which was consistent with the single theoretical factor presented by Hüttinger et al. (2014).

Table 21. Total variance for supplier satisfaction explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,127	78,170	78,170	2,859	71,471	71,471
2	0,450	11,257	89,427			
3	0,273	6,836	96,263			
4	0,149	3,737	100,000			
Extraction Method: Principal Axis Factoring.						

5.5.1.5.2 Preferred customer status

In Table 22, only one factor reflected an eigenvalue (3.886) greater than 1. This single factor explains 77.73% of the total variance. This implies the extraction of a single factor for preferred customer status which was consistent with the single theoretical factor presented by Hüttinger et al. (2014).

Table 22. Total variance for preferred customer status explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,886	77,729	77,729	3,620	72,408	72,408
2	0,512	10,243	87,972			
3	0,239	4,778	92,750			
4	0,200	3,999	96,749			
5	0,163	3,251	100,000			
Extraction Method: Principal Axis Factoring.						

5.5.1.5.3 Antecedents of supplier satisfaction

In Table 23, the first five factors reflect eigenvalues greater than 1 (17.235, 2.408, 1.379, 1.175, 1.025). An eigenvalue slightly above 1 for factor five was noted. These five factors accounted for 66.35 % of the total variance before rotation. After rotation, the five-factor solution was explained by 61.06% of the total variance. This implied the extraction of a five-factor solution for the antecedents of supplier satisfaction.

Table 23. Total variance for five-factor solution

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17,235	49,243	49,243	16,855	48,156	48,156	7,903	22,579	22,579
2	2,408	6,881	56,124	2,016	5,761	53,917	7,054	20,154	42,732
3	1,379	3,940	60,063	1,071	3,060	56,977	2,683	7,665	50,397
4	1,175	3,358	63,421	0,833	2,379	59,356	2,302	6,577	56,975
5	1,025	2,928	66,349	0,595	1,700	61,056	1,428	4,081	61,056
6	0,871	2,487	68,837						
7	0,824	2,355	71,191						
8	0,808	2,309	73,500						
9	0,731	2,088	75,588						
10	0,600	1,714	77,302						
11	0,583	1,665	78,968						
12	0,530	1,515	80,483						
13	0,504	1,441	81,924						
14	0,469	1,341	83,266						
15	0,438	1,252	84,518						
16	0,429	1,225	85,743						
17	0,422	1,206	86,949						
18	0,389	1,111	88,060						
19	0,375	1,073	89,132						
20	0,355	1,014	90,146						
21	0,336	0,961	91,107						
22	0,298	0,851	91,958						
23	0,293	0,837	92,795						
24	0,271	0,774	93,569						
25	0,268	0,766	94,336						
26	0,265	0,758	95,094						
27	0,250	0,713	95,807						
28	0,241	0,689	96,496						
29	0,220	0,629	97,125						
30	0,209	0,598	97,722						
31	0,198	0,567	98,289						
32	0,175	0,499	98,789						
33	0,157	0,448	99,237						
34	0,135	0,387	99,624						
35	0,132	0,376	100,000						

Extraction Method: Principal Axis Factoring.

5.5.1.6. Factor loading

Loading factors indicate the strength of the relationship between the observed and unobserved variables. Values for loading factors suggest a strong relationship between variables when they range between 0.32 to 0.40. A value of 0.4 was used as the threshold for this purpose (Pallant, 2007; Macdonald, 2007).

5.5.1.6.1 Supplier satisfaction and preferred customer status

Loading factors for supplier satisfaction and preferred customer status are summarised in Table 24 below. With loading factors well above 0.4 for all items, items for supplier satisfaction and preferred customer status were considered strong and therefore grouped into a single factor for each construct respectively. This was consistent with single theoretical factors for both constructs provided by Hüttinger et al. (2014).

Table 24. Loading factors for supplier satisfaction and preferred customer status

Supplier satisfaction[a]	1 Factor	Preferred customer status[a]	1 Factor
SuppSat3	0,928	PrefCust5	0,912
SuppSat2	0,868	PrefCust2	0,905
SuppSat4	0,855	PrefCust3	0,858
SuppSat1	0,716	PrefCust4	0,795
		PrefCust1	0,775
Extraction Method: Principal Axis Factoring.			
a. 1 factors extracted. 6 iterations required.			

5.5.1.6.2 Antecedents of supplier satisfaction

From the 1st order factor analysis, the eigenvalues in Table 23 revealed that five factors were identified as significant for supplier satisfaction. Accordingly, high factor loading for five factors were anticipated. However a review of the 1st order rotated factor matrix (see Table 25 below) revealed high loading for the first four factors only, even though the eigenvalues indicated the existence of five factors. The presence of an eigenvalue slightly above 1 for factor 5 may offer a plausible explanation for low loading on factor 5. Because the number of eigenvalues above 1 in Table 23 did not correspond with the number of loaded factors in Table 25, a 2nd order factor analysis was conducted to force a four-factor solution and determine whether it would yield results similar to those in the original five-factor solution. The outcomes for the 1st order and 2nd order factor analysis are provided for comparison in Table 25. The results for the forced four-factor solution revealed factor loadings that are slightly different to those in the original five-factor loadings. Before considering the Kaiser criterion again, the forced four-factor data was tested for validity which met the necessary criteria. The results for validity are: Correlations range between 0.42 and 0.77, all greater than 0.3; KMO test (0.80 > 0.6); Bartlett's test (0.000 < 0.05). MSA values were well above 0.6 indicating no weak items, and all communalities were greater than 0.3. In *Section 5.5.1.6.3 Total variance for the forced four-factor solution*, the total variance for the forced four-factor solution is explained.

Table 25. Rotated factor matrix for the antecedents of supplier satisfaction

	1st Order Factor Analysis[a]				
	1	2	3	4	5
SuppInv1	0,793	0,189	0,079	0,139	0,035
SuppInv2	0,700	0,264	0,064	0,203	0,033
Support2	0,697	0,160	0,230	0,144	0,117
SuppInv3	0,680	0,162	0,149	0,183	0,303
InnovPot3	0,669	0,326	0,247	0,010	0,048
InnovPot1	0,669	0,245	0,234	0,048	0,115
Support1	0,652	0,273	0,129	0,215	0,201
InnovPot2	0,644	0,180	0,270	0,117	0,413
OpExcel2	0,640	0,275	0,150	0,311	0,135
GrowthOpp1	0,591	0,229	0,328	0,172	0,245
GrowthOpp3	0,574	0,295	0,332	0,274	-0,016
RelBe4	0,551	0,456	0,285	0,157	0,029
OpExcel1	0,518	0,448	0,167	0,216	0,228
ContAcc3	0,518	0,301	0,083	0,408	0,089
OpExcel4	0,494	0,479	0,110	0,117	-0,079
Support3	0,428	0,269	0,253	0,176	0,363
BEE3	0,417	0,295	0,409	0,149	0,032
Rely1	0,212	0,781	0,104	0,139	0,116
RelBe3	0,202	0,715	0,206	0,221	0,164
Rely3	0,148	0,667	0,078	0,030	0,049
Rely2	0,289	0,666	0,115	0,144	0,276
OpExcel3	0,387	0,650	0,141	0,213	0,042
SuppInv4	0,326	0,638	0,165	0,350	0,177
Rely4	0,088	0,602	0,110	0,092	-0,070
RelBe1	0,350	0,596	0,090	0,302	0,072
Profit1	0,226	0,596	0,273	0,126	0,393
RelBe6	0,403	0,580	0,186	0,191	0,154
RelBe2	0,387	0,573	0,321	0,194	0,346
Profit2	0,282	0,524	0,257	0,225	0,437
GrowthOpp2	0,255	0,461	0,159	0,110	0,327
RelBe5	0,409	0,448	0,315	0,254	-0,006
BEE2	0,312	0,222	0,788	0,145	0,134
BEE1	0,266	0,206	0,760	0,121	0,145
ContAcc1	0,298	0,309	0,142	0,766	0,091
ContAcc2	0,246	0,263	0,179	0,650	0,111

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

	2nd Order Factor Analysis[a]			
	1	2	3	4
SuppInv1	0,796	0,187	0,067	0,137
Support2	0,703	0,167	0,242	0,139
SuppInv2	0,702	0,262	0,051	0,201
SuppInv3	0,689	0,199	0,226	0,176
InnovPot1	0,673	0,251	0,243	0,047
InnovPot3	0,668	0,321	0,230	0,012
Support1	0,662	0,294	0,169	0,208
InnovPot2	0,654	0,231	0,371	0,114
OpExcel2	0,647	0,287	0,167	0,306
GrowthOpp1	0,602	0,252	0,378	0,166
GrowthOpp3	0,570	0,285	0,294	0,272
RelBe4	0,550	0,449	0,259	0,156
OpExcel1	0,529	0,471	0,211	0,209
ContAcc3	0,523	0,309	0,091	0,404
OpExcel4	0,485	0,458	0,062	0,121
Support3	0,444	0,311	0,340	0,167
BEE3	0,418	0,289	0,382	0,148
Rely1	0,217	0,790	0,108	0,134
RelBe3	0,208	0,729	0,225	0,216
Rely2	0,302	0,694	0,174	0,136
Rely3	0,149	0,665	0,068	0,028
SuppInv4	0,333	0,655	0,190	0,344
OpExcel3	0,389	0,647	0,123	0,209
Profit1	0,247	0,634	0,361	0,120
RelBe2	0,403	0,608	0,394	0,185
RelBe1	0,353	0,600	0,084	0,297
RelBe6	0,410	0,593	0,203	0,184
Rely4	0,086	0,579	0,064	0,094
Profit2	0,307	0,569	0,360	0,214
GrowthOpp2	0,270	0,496	0,239	0,104
RelBe5	0,407	0,436	0,279	0,251
BEE2	0,322	0,229	0,759	0,145
BEE1	0,274	0,214	0,747	0,121
ContAcc1	0,302	0,319	0,152	0,767
ContAcc2	0,251	0,275	0,197	0,649

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

5.5.1.6.3 Total variance for the forced four-factor solution

An abridged version of the Kaiser criterion for the forced four-factor solution is provided in Table 26. The first four factors reflect eigenvalues greater than 1 (17.24, 2.40, 1.38, 1.18). which account for 63.42% of the total variance before rotation and 59.16% of the total variance after rotation.

Table 26. Total variance for forced four-factor solution

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17,235	49,243	49,243	16,836	48,104	48,104	8,083	23,095	23,095
2	2,408	6,881	56,124	2,001	5,718	53,822	7,393	21,122	44,216
3	1,379	3,940	60,063	1,039	2,969	56,791	2,983	8,524	52,740
4	1,175	3,358	63,421	0,830	2,372	59,164	2,248	6,424	59,164
5	1,025	2,928	66,349						
6	0,871	2,487	68,837						
7	0,824	2,355	71,191						

Extraction Method: Principal Axis Factoring.

5.5.1.7. Summary of exploratory factor analysis

From Table 25 and Table 26, the outputs of the EFA are summarised as follows:

i. Supplier satisfaction is a distinct construct comprised of a single factor consisting of four (4) items:
    1. SuppSat3, SuppSat2, SuppSat4, SuppSat1;

ii. Preferred customer status is a distinct construct comprised of a single factor consisting of five (5) items:
    1. PrefCust5, PrefCust2, PrefCust3, PrefCust4, PrefCust1;

iii. The antecedents of supplier satisfaction were reduced to four factors:
    1. Factor 1 consisting of seventeen (17) items:
       SuppInv1, Support2, SuppInv2, SuppInv3, InnovPot1, InnovPot3, Support1, InnovPot2, OpExcel2 GrowthOpp1, GrowthOpp3, RelBe4, OpExcel1, ContAcc3, OpExcel4, Support3, BEE3;
    2. Factor 2 consisting of fourteen (14) items:
       Rely1, RelBe3, Rely2, Rely3, SuppInv4, OpExcel3, Profit1, RelBe2, RelBe1, RelBe6, Rely4, Profit2, GrowthOpp2, RelBe5;
    3. Factor 3 consisting of two (2) items:
       BEE2, BEE1; and
    4. Factor 4 consisting of two (2) items:
       ContAcc1, ContAcc2.

All items are listed in order of descending factor loading.

5.5.2. Reliability

Reliabilities, using Cronbach's alpha as a measure of internal consistency, were considered from an empirical and theoretical perspective. Cronbach's alpha provides a measure of the average correlation among all the items that make up the scale (Taber, 2018). Values for Cronbach's alpha (α) can range between 0 and 1. However, a minimum value of 0.7 is generally accepted as the threshold for reliability (Pallant, 2007). In Table 27, a summary of Cronbach's alpha for the empirical factors is provided. Supplier satisfaction ($\alpha = 0.89 > 0.7$) and preferred customer status ($\alpha = 0.93 > 0.7$), revealed a high level of reliability. This implies that items related to supplier satisfaction and preferred customer status were accurate measures of the constructs. Similarly, Cronbach's alpha for the four forced empirical factors were markedly greater than 0.7 ($\alpha > 0.7$) implying that the empirical

factors extracted from the EFA were reliable. These values for Cronbach's alpha reflect the reliability of the items after Profit3 was removed from the dataset.

Table 27. Summary of empirical factor reliabilities

	Empirical reliabilities		
Factor	No of Items	Cronbach's Alpha (α)	Inter-item correlations mean
Supplier satisfaction	4	0.890	N/A
Preferred customer status	5	0.928	N/A
Antecedent Forced Factor 1	17	0.951	N/A
Antecedent Forced Factor 2	14	0.943	N/A
Antecedent Forced Factor 3	2	0.901	N/A
Antecedent Forced Factor 4	2	0.829	N/A

In Table 28, the Cronbach's alpha for the theoretical factor reliabilities are presented. With the exception of profitability (α=0.58 including Profit3), the Cronbach alpha values for all factors were greater than 0.7 (α > 0.7).

Table 28. Summary of theoretical factor reliabilities

	Theoretical reliabilities		
	No of Items	Cronbach's Alpha (α)	Inter-item correlations mean
Supplier satisfaction	4	0.890	N/A
Preferred customer status	5	0.928	N/A
Growth opportunity	3	0.731	N/A
Innovation potential	3	0.839	N/A
Operative excellence	4	0.842	N/A
Reliability	4	0.823	N/A
Support of suppliers	3	0.785	N/A
Supplier involvement	4	0.828	N/A
Contact accessibility	3	0.811	N/A
Relational behaviour	6	0.891	N/A
Profitability	2	*0.581/ **0.844	0.298[a]
BBBEE	3	0.819	N/A
* Includes Profit3/ ** Excludes Profit3			
a. Only applicable to scales with less than 10 items that are not reliable			

According to Pallant (2007), values for Cronbach's alpha can be quite small when there are fewer than 10 items within a scale. In such instances, calculating and reporting the inter-item correlations mean is recommended. Optimal values for inter-items correlations mean vary between 0.2 and 0.4 to be considered reliable. Because profitability consisted of three items with a Cronbach's alpha of 0.581

(α<0.7), the inter-item correlations mean for profitability (including Profit3) was calculated. This is presented in Table 29.

Table 29. Inter-items correlation mean for profitability

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	0,298	0,057	0,731	0,673	12,722	0,113	3

From Table 29, an inter-item correlations mean of 0.30, that is (0.2 < inter-item correlations mean < 0.4) was calculated implying that the measures of reliability for profitability were acceptable. However, measures to improve the Cronbach's alpha for profitability were also considered. From Table 30, Profit3 was deleted resulting in an improved Cronbach's alpha of 0.84. This is reflected in Table 28, the summary of theoretical factor reliabilities. The results from the reliability testing were consistent with the factor analysis which exposed Profit3 as a weak item.

Table 30. Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Profit1	11,04	4,523	0,609	0,538	0,107
Profit2	11,04	4,465	0,556	0,534	0,189
Profit3	10,51	8,238	0,087	0,012	0,844

In general, all constructs revealed a high degree of statistical reliability confirming that the items which make up the various factors are indeed measuring the same underlying construct. The reliability for profitability was also improved by removing Profit3. Profit3 was also excluded from the regression analysis hereafter.

5.5.3. Descriptives of factors

From the calculated results, a table of factors, ranked in terms of means is provided in Table 31. Supplier responses for all factors varied between "Disagree strongly" and "Agree strongly". A cursory review of the antecedents of supplier satisfaction indicated that suppliers prioritised profitability, reliability, opportunities for growth, relational behaviour and contact accessibility as the top five factors that satisfy suppliers most. It is noteworthy that these top five antecedents are a combination of economic and relational factors despite the fact that only three out of ten potential antecedents, namely profitability, growth opportunity and BBBEE, tested respondents for economic dimensions of supplier satisfaction.

Table 31. Summary of descriptives for factors

Factors	N - Valid	Missing	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Supplier satisfaction	369	0	5,8347	6,0000	6,00	1,12339	1,00	7,00
Preferred customer status	369	0	5,3783	5,8000	6,00	1,39158	1,00	7,00
Profitability	369	0	5,2398	6,0000	6,00	1,40411	1,00	7,00
Reliability	369	0	5,2012	5,5000	6,00	1,25866	1,00	7,00
Growth opportunity	369	0	4,8220	5,0000	6,00	1,32650	1,00	7,00
Relational behaviour	369	0	4,7245	4,8333	5,33	1,30598	1,00	7,00
Contact accessibility	369	0	4,7028	5,0000	6,00	1,45252	1,00	7,00
Support of suppliers	369	0	4,3966	4,3333	4,00	1,41877	1,00	7,00
Operative excellence	369	0	4,3218	4,5000	4,00	1,39423	1,00	7,00
Supplier involvement	369	0	4,2392	4,2500	6,00	1,42446	1,00	7,00
Innovation potential	369	0	4,1427	4,0000	4,00	1,46459	1,00	7,00
BBBEE	312	0	4,1068	4,0000	4,00	1,62025	1,00	7,00

With reference to the medians for the top five antecedents of supplier satisfaction, at least half of all respondents “Agreed” that a combination of economic and relational factors influenced their perceptions of Kumba in a positive way. On average, suppliers remained largely “Undecided” about the support they received from Kumba, its operational effectiveness, its ability to collaborate and the advantages of BBBEE status.

5.5.4. Empirical factors versus theoretical factors

In *Section 5.5.1.7 Summary of exploratory factor analysis*, the four forced factors extracted from the EFA were summarised. In Table 32 the items for the extracted factors were mapped against their original theoretical factors to establish if they could be meaningfully grouped.

Table 32. Extracted factors and theoretical factors

Theoretical factors	Forced Factor 1 items	Forced Factor 2 items	Forced Factor 3 items	Forced Factor 4 items
Profitability		2		
Reliability		4		
Growth opportunity	2	1		
Relational behaviour	1	5		
Contact accessibility	1			2
Support of suppliers	3			
Operative excellence	3	1		
Supplier involvement	3	1		
Innovation potential	3			
BBBEE	1		2	
Total number of items	17	14	2	2

Factors 3 and 4 grouped into contact accessibility and BBBEE. However, factors 1 and 2 grouped seventeen items and fourteen items from eight and six theoretical factors respectively. Because it was difficult to discern the forced factors into meaningful antecedents, it was decided to progress the regression analysis using the original theoretical antecedents of supplier satisfaction.

5.5.5. Hypothesis 1: Supplier satisfaction and its antecedents

Regression analysis was used to evaluate the relationship between the antecedents of supplier satisfaction (independent variables) and supplier satisfaction (dependent variable) to validate the conceptual model from Figure 4. Since the theoretical antecedents for supplier satisfaction included BBBEE, non-BBBEE respondents were removed from the dataset in order to correlate a set of responses that were inclusive of BBBEE respondents. (N=312). Scatterplots for each of the antecedents and supplier satisfaction are presented separately in *Appendix B6*. The initial correlations' matrix is presented in Table 33.

Table 33. Correlations matrix

		SuppSat	GrowthOpp	InnovPot	OpExcel	Rely	Support	SuppInv	ContAcc	RelBe	Profit	BEE
Pearson Correlation	SuppSat	1,000	0,627	0,535	0,646	0,679	0,537	0,580	0,547	0,739	0,725	0,473
	GrowthOpp	0,627	1,000	0,765	0,707	0,565	0,748	0,738	0,647	0,767	0,622	0,661
	InnovPot	0,535	0,765	1,000	0,703	0,484	0,732	0,789	0,540	0,687	0,564	0,622
	OpExcel	0,646	0,707	0,703	1,000	0,670	0,733	0,817	0,662	0,813	0,634	0,588
	Rely	0,679	0,565	0,484	0,670	1,000	0,487	0,561	0,508	0,764	0,652	0,463
	Support	0,537	0,748	0,732	0,733	0,487	1,000	0,780	0,597	0,710	0,560	0,609
	SuppInv	0,580	0,738	0,789	0,817	0,561	0,780	1,000	0,685	0,772	0,631	0,579
	ContAcc	0,547	0,647	0,540	0,662	0,508	0,597	0,685	1,000	0,699	0,553	0,503
	RelBe	0,739	0,767	0,687	0,813	0,764	0,710	0,772	0,699	1,000	0,767	0,667
	Profit	0,725	0,622	0,564	0,634	0,652	0,560	0,631	0,553	0,767	1,000	0,575
	BEE	0,473	0,661	0,622	0,588	0,463	0,609	0,579	0,503	0,667	0,575	1,000

With the exception of BBBEE, Table 33 reflects a strong correlation (>0.5) between all the independent variables (antecedents of supplier satisfaction) and the dependent variable (supplier satisfaction). Strong correlations between independent variables (>0.8) were also present most notably between supplier involvement and operative excellence (0.82) as well as relational behaviour and operative excellence (0.81). Sig. values for all relationships were 0.00 (p-values < 0.05) implying statistical significance.

5.5.5.1. Multiple regression analysis

High correlation coefficients between independent variables suggest collinearity which is unsuitable for multiple regression analysis (Pallant, 2007). To address the collinearity, a first iteration assessment of the tolerance and variance inflation factor (VIF) statistics under collinearity statistics in the coefficients table was conducted. Variables with a tolerance less than 0.2 (tolerance < 0.2) and/ or a VIF greater than 10 (VIF>10) indicate multicollinearity (Pallant, 2007). Therefore, relational behaviour as an independent variable with a tolerance of 0.15 (tolerance < 0.2) was identified as a candidate for removal from the model. The collinearity diagnostics hold that if the conditions index exceeds 30 and the variance proportions exceed 0.5, the factor can have harmful effects on the regression model (Chennamaneni, Echambadi, Hess, & Syam, 2016). From the collinearity diagnostics, given a conditions index of 34.92 and variance proportion of 0.94, it was confirmed that relational behaviour be removed.

A second iteration assessment of the tolerance and VIF statistic was conducted. From the second iteration, supplier involvement as an independent variable with a tolerance of 0.20 (tolerance < 0.2) was identified as a candidate for removal from the model. From the collinearity diagnostics, given a conditions index of 27.04 and variance proportion of 0.63, it was decided that supplier involvement be removed to ensure the integrity of the model. On this basis, the hypotheses for supplier involvement (H1f) and relational behaviour (H1h) were removed because of the inability to test for these antecedents. For the final iteration, two outliers from the dataset were removed reducing the sample size to 310. (N = 310). The final correlations matrix for H1 is presented in Table 34.

Table 34. Final correlations matrix for H1

		SuppSat	GrowthOpp	InnovPot	OpExcel	Rely	Support	ContAcc	Profit	BEE
Pearson Correlation	SuppSat	1,000	0,644	0,550	0,665	0,695	0,549	0,563	0,743	0,485
	GrowthOpp	0,644	1,000	0,761	0,700	0,551	0,749	0,644	0,611	0,656
	InnovPot	0,550	0,761	1,000	0,698	0,474	0,731	0,534	0,556	0,616
	OpExcel	0,665	0,700	0,698	1,000	0,665	0,732	0,658	0,627	0,582
	Rely	0,695	0,551	0,474	0,665	1,000	0,485	0,505	0,641	0,454
	Support	0,549	0,749	0,731	0,732	0,485	1,000	0,593	0,559	0,607
	ContAcc	0,563	0,644	0,534	0,658	0,505	0,593	1,000	0,550	0,498
	Profit	0,743	0,611	0,556	0,627	0,641	0,559	0,550	1,000	0,569
	BEE	0,485	0,656	0,616	0,582	0,454	0,607	0,498	0,569	1,000

Table 34 reflects the removal of supplier involvement and relational behaviour yielding acceptable correlation values between all independent and dependent variables as well as between all independent variables without any other controls. Sig. values for all relationships were 0.00 (p-values < 0.05) implying statistical significance for all relationships. Correlation values for all relationships were positive.

5.5.5.2. Model summary

From the model summary in Table 35, R^2 = 0.674 implying that 67.4% of the variance in supplier satisfaction was explained by eight antecedents.

Table 35. Model summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.821[a]	0,674	0,665	0,657
a. Predictors: (Constant), BEE, Rely, ContAcc, InnovPot, Profit, Support, OpExcel, GrowthOpp				
b. Dependent Variable: SuppSat				

From the analysis of variance (ANOVA) in Table 36, the Sig. value = 0.00 (p-value < 0.05) indicating that the eight independent variables (eight antecedents of supplier satisfaction) were jointly significant in explaining the dependent variable (supplier satisfaction).

Table 36. ANOVA[a] results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	268,610	8	33,576	77,678	.000[b]
	Residual	130,108	301	0,432		
	Total	398,718	309			
a. Dependent Variable: SuppSat						
b. Predictors: (Constant), BEE, Rely, ContAcc, InnovPot, Profit, Support, OpExcel, GrowthOpp						

In Table 37, the finalised coefficients for the model are presented. Since the tolerance values for all independent variables were greater than 0.2 and VIF values less than 10, it was determined that multicollinearity, while still possible, was acceptably removed from the model. This was supported in the collinearity diagnostics (Table 37) by the conditions index (25.10) which was less than 30.

Table 37. Finalised collinearity diagnostics[a]

Collinearity diagnostics[a]	Eigenvalue	Condition Index	Variance Proportions								
			(Constant)	GrowthOpp	InnovPot	OpExcel	Rely	Support	ContAcc	Profit	BEE
1	8,705	1,000	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
2	0,085	10,113	0,15	0,00	0,05	0,00	0,04	0,02	0,01	0,01	0,25
3	0,055	12,587	0,03	0,00	0,10	0,04	0,01	0,07	0,01	0,03	0,61
4	0,039	14,945	0,26	0,01	0,18	0,09	0,00	0,01	0,35	0,01	0,00
5	0,035	15,762	0,13	0,02	0,01	0,09	0,13	0,02	0,36	0,16	0,02
6	0,026	18,146	0,05	0,01	0,34	0,09	0,01	0,38	0,14	0,16	0,03
7	0,024	19,079	0,04	0,00	0,09	0,15	0,09	0,33	0,00	0,52	0,05
8	0,017	22,965	0,34	0,35	0,03	0,27	0,43	0,01	0,00	0,09	0,01
9	0,014	25,090	0,01	0,61	0,19	0,27	0,29	0,17	0,12	0,02	0,02

a. Dependent Variable: SuppSat

In Table 38, the Sig. values for four independent variables, profitability (0.00), reliability (0.00), growth opportunity (0.00) and operative excellence (0.03) were less than 0.05 (p-value < 0.05) and therefore statistically significant. The unstandardised B values highlighted those independent variables (profitability, reliability, growth opportunity and operative excellence) that exerted the highest influence on supplier satisfaction together with a constant of 1.70. This implied that these four factors were significant predictors of supplier satisfaction. While the other factors were correlated, their influence was considered negligible.

Table 38. Finalised coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Correlations			Collinearity Statistics	
1	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	1,700	0,183		9,268	0,000	1,339	2,061					
GrowthOpp	0,186	0,055	0,211	3,362	0,001	0,077	0,295	0,644	0,190	0,111	0,277	3,616
InnovPot	0,000	0,044	0,000	-0,008	0,993	-0,088	0,087	0,550	0,000	0,000	0,331	3,018
OpExcel	0,109	0,050	0,134	2,166	0,031	0,010	0,208	0,665	0,124	0,071	0,284	3,527
Rely	0,244	0,045	0,264	5,461	0,000	0,156	0,332	0,695	0,300	0,180	0,465	2,152
Support	-0,031	0,046	-0,038	-0,661	0,509	-0,121	0,060	0,549	-0,038	-0,022	0,322	3,102
ContAcc	0,039	0,039	0,047	0,997	0,320	-0,038	0,115	0,563	0,057	0,033	0,485	2,062
Profit	0,322	0,039	0,403	8,177	0,000	0,245	0,400	0,743	0,426	0,269	0,447	2,236
BEE	-0,056	0,033	-0,080	-1,706	0,089	-0,121	0,009	0,485	-0,098	-0,056	0,494	2,024

a. Dependent Variable: SuppSat

5.5.5.3. Hypothesis 1: Conclusion

Based on the outputs from the correlations (Table 34) and the finalised coefficients (Table 38), it was concluded that all antecedents were positively correlated to supplier satisfaction. However, only four were statistically significant after the removal of supplier involvement and relational behaviour. The outcomes of the model with respect to Hypothesis 1 are summarised in Table 39.

Table 39. Summary of testing for Hypothesis 1

#	Hypothesis 1	Statistically significant	Positive correlation	Result
H1a:	*Growth opportunity for suppliers has a statistically significant positive impact on supplier satisfaction.*	Yes p-value = 0.001	Yes	Accepted
H1b:	*Innovation potential for suppliers has a statistically significant positive impact on supplier satisfaction.*	No p-value = 0.993	Yes	Rejected
H1c:	*Customers' operative excellence has a statistically significant positive impact on supplier satisfaction.*	Yes p-value = 0.031	Yes	Accepted
H1d:	*Customers' reliability has a statistically significant positive impact on supplier satisfaction.*	Yes p-value = 0.000	Yes	Accepted
H1e:	*Customers' support of suppliers has a statistically significant positive impact on supplier satisfaction.*	No p-value = 0.509	Yes	Rejected
H1f:	*Customers' supplier involvement has a statistically significant positive impact on supplier satisfaction.*	N/A	N/A	Removed due to collinearity
H1g:	*Customers' contact accessibility has a statistically significant positive impact on supplier satisfaction.*	No p-value = 0.320	Yes	Rejected
H1h:	*Customers' relational behaviour toward suppliers has a statistically significant positive impact on supplier satisfaction.*	N/A	N/A	Removed due to collinearity
H1i:	*The perceived profitability of the relationship has a statistically significant positive impact on supplier satisfaction.*	Yes p-value = 0.000	Yes	Accepted
H1j:	*The perceived importance of BBBEE status has a statistically significant positive impact on supplier satisfaction*	No p-value = 0.089	Yes	Rejected

The unstandardised B values in Table 38 were used to construct a regression equation for supplier satisfaction as a function of the four statistically significant independents variables:

Supplier satisfaction = 1.700 + 0.322 Profitability + 0.224 Reliability + 0.186 Growth opportunity + 0.109 Operative excellence

5.5.6. Hypothesis 2: Supplier satisfaction and customer status

For Hypothesis 2, a regression analysis was used to evaluate the propensity of suppliers to award Kumba with preferred customer status by validating the conceptual model (Figure 4) in terms of the relationship between the central constructs (independent variables), namely, supplier satisfaction and preferred customer status, only. In this case, the full contingent of 369 fully completed responses were used. Three outliers were removed leaving a sample of 366 respondents. (N = 366). A scatterplot for preferred customer status and supplier satisfaction is provided in *Appendix B7*. In Table 40, the mean value for preferred customer status (5.38) revealed that on average, suppliers "Agreed somewhat" about the perceived preferred customer status of Kumba.

Table 40. Descriptive statistics for supplier satisfaction and preferred customer status

	Mean	Std. Deviation	N
PrefCust	5,38	1,380	366
SuppSat	5,86	1,083	366

The finalised correlations in Table 41 indicate that the relationship between preferred customer status and supplier satisfaction was positive with a strong correlation (0.66).

Table 41. Final correlations matrix for H2

		PrefCust	SuppSat
Pearson Correlation	PrefCust	1,000	0,660
	SuppSat	0,660	1,000
Sig. (1-tailed)	PrefCust		0,000
	SuppSat	0,000	
N	PrefCust	366	366
	SuppSat	366	366

From the model summary in Table 42, R^2 = 0.436 implying that 43.6% of the variance in preferred customer status could be explained by supplier satisfaction. Supplier satisfaction was therefore a strong predictor of preferred customer status.

Table 42. Model summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.660[a]	0,436	0,435	1,038
a. Predictors: (Constant), SuppSat				
b. Dependent Variable: PrefCust				

From the analysis of variance (ANOVA) in Table 43, the Sig. value = 0.00 (p-value < 0.05) indicating that the model as a whole was significant for explaining preferred customer status.

Table 43. ANOVA[a] results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	303,325	1	303,325	281,638	.000[b]
	Residual	392,029	364	1,077		
	Total	695,354	365			
a. Dependent Variable: PrefCust						
b. Predictors: (Constant), SuppSat						

In Table 44, the Sig. value for the constant (0.13) is greater than 0.05 (p-value > 0.05) implying that the constant is insignificant. However, the Sig. value for supplier satisfaction (0.00) is less than 0.05 (p-value < 0.05) implying that supplier satisfaction is a significant predictor of preferred customer status.

Table 44. Finalised coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	0,454	0,299		1,518	0,130	-0,134	1,041
	SuppSat	0,842	0,050	0,660	16,782	0,000	0,743	0,941
a. Dependent Variable: PrefCust								

5.5.6.1. Hypothesis 2: Conclusion

Based on the outputs from the correlations (Table 41), and the finalised coefficients (Table 44), it was concluded that supplier satisfaction was both positively correlated to preferred customer status and a statistically significant predictor of preferred customer status. Therefore, ***H2****:* "*Supplier satisfaction has a statistically significant positive impact on the tendency to award the buying firm preferred customer status."* was accepted. The unstandardised B values in Table 37 were thus used to construct a regression equation for preferred customer status as a function of supplier satisfaction.

Preferred customer status = 0.842 Supplier satisfaction

5.5.7. Hypothesis 3: Supplier satisfaction and BBBEE status

In this section, a comparison of supplier satisfaction between suppliers with BBBEE status and suppliers without BBBEE status was considered. Using control variable 4 (CV4), respondents confirmed their BBBEE status with a “Yes” or confirmed non-BBBEE status with a “No”. Because only 57 non-BBBEE suppliers completed the questionnaire, a random sample of 57 BBBEE respondents (n=57) were selected for comparison.

5.5.7.1. Descriptives

From the descriptives (*Appendix B8*), the mean value for supplier satisfaction scores of BBBEE suppliers (5.85) was marginally higher than non-BBBEE suppliers (5.67) suggesting that both groups of suppliers were more or less equally satisfied with Kumba. Descriptives for supplier satisfaction scores also revealed negative skewness for both groups albeit slight. The histograms provided in *Appendix B9* also depicted negatively skewed distributions for both groups. A boxplot for the distributions of supplier satisfaction scores for both BBBEE suppliers and non-BBBEE suppliers is provided in Figure 6. Outliers for both groups were small and therefore considered negligible.

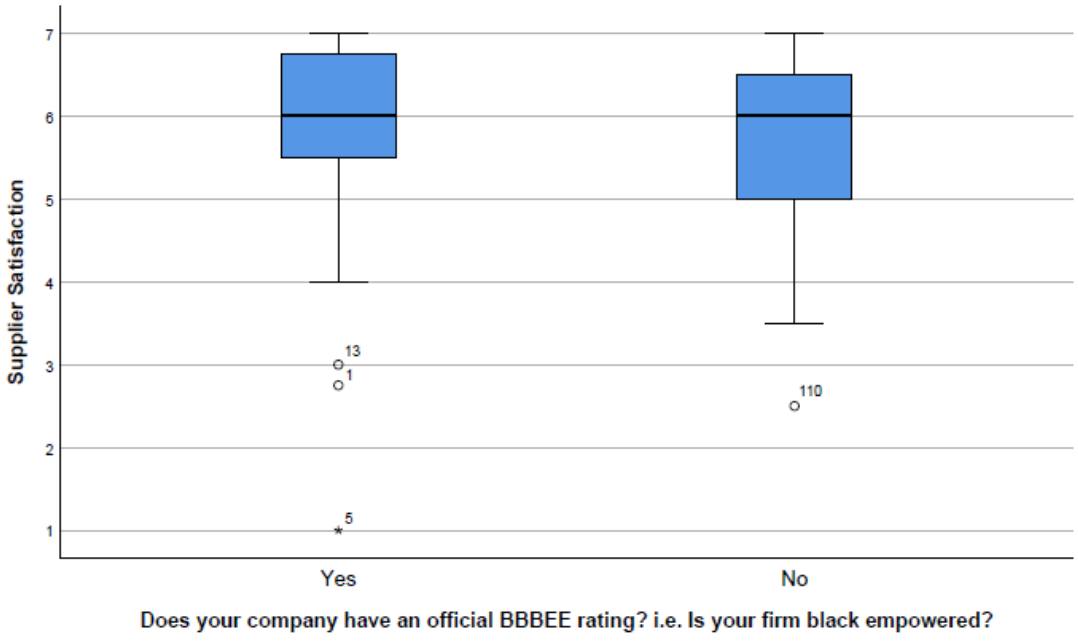

Figure 6. Distribution of supplier satisfaction scores for BBBEE/ non-BBBEE suppliers

5.5.7.2. Test for normality

With n=57 (n > 50), the Kolmogorov-Smirnov test (Pallant, 2007) was used to test for normality. Using a 5% level of significance, the following hypotheses were used to assess normality:

H_o – Normally distributed H_a – Not normally distributed

In Table 45, the Kolmogorov-Smirnov test for normality revealed a p-value = 0.00 for BBBEE respondents and a p-value = 0.001 for non-BBBEE respondents. In both cases, the p-value was less than 0.05 (p-value < 0.05). Therefore the null hypotheses, namely: Normally distributed, for both groups were rejected implying non-normal distributions. For Likert-type data, this result was anticipated.

Table 45. Kolmogorov-Smirnov test for normality

Kolmogorov-Smirnov[a]	CV4	Statistic	df	Sig.
SuppSat	Yes	0,172	57	0,000
	No	0,156	57	0,001
a. Lilliefors Significance Correction				

5.5.7.3. Comparison of differences

An independent samples t-test was used to compare differences in supplier satisfaction scores between the two independent groups of suppliers despite non-normal distributions for both groups since the group sizes were greater than 50, exactly equal (n = 57) and did not have outliers that caused extreme skewness (see also Figure 6). Group statistics are provided in Table 46 below.

Table 46. Group statistics

	CV4	N	Mean	Std. Deviation	Std. Error Mean
SuppSat	Yes	57	5,85	1,171	0,155
	No	57	5,67	0,997	0,132

Hypotheses for evaluating the differences in variance and means are listed as:

H_o – Equal variances H_a – Not equal variances

H_o – No difference between means H_a – Difference between means

The results for the independent samples t-test are provided in Table 47. From the Levene's test for equality of variance, a Sig. value of 0.819 was revealed. Because it was greater than 0.05 (p-value > 0.05), the null hypothesis, namely: The variance in both groups are equal, was accepted implying equal variances. From the t-test

for equality of means, a Sig. value of 0.379 was greater than 0.05 (p-value > 0.05). Therefore, the null hypothesis, namely: There is no difference in means between the groups, was accepted.

Table 47. Independent-samples t-test

	Levene's Test for Equality of Variances			t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SuppSat	Equal variances assumed	0,052	0,819	0,883	112	0,379	0,180	0,204	-0,224	0,583
	Equal variances not assumed			0,883	109,228	0,379	0,180	0,204	-0,224	0,583

5.5.7.4. Hypothesis 3: Conclusion

From the outputs of the analysis, both groups of suppliers, BBBEE and non-BBBEE suppliers, agree that they were satisfied with Kumba. Further, there is no empirical evidence to support a difference in perceived satisfaction between the two groups. ***H3:*** *BBBEE suppliers are more satisfied than non-BBBEE suppliers,* was therefore rejected.

5.5.8. Hypothesis 4: Supplier satisfaction and length of relationship

In this section, the relationship between supplier satisfaction and the length (or duration) of the commercial association between suppliers and the buying firm (Kumba) was explored. A total of 369 completed responses were received. For the purpose of comparison, control variable 6 (CV6), namely, length of commercial relationship, was recoded to create two groups with a similar size (rCV6). The first group comprised 196 respondents that had a commercial relationship with Kumba for five years or less while the second group comprised 173 respondents that had a commercial relationship with Kumba for more than 5 years. Though unrelated, it is interesting to note that Kumba usually awards contracts on a five-year basis.

5.5.8.1. Descriptives

From the descriptives in *Appendix B10*, the mean value for supplier satisfaction scores for suppliers that had a commercial relationship with Kumba less than five years (5.86) was marginally higher than those with a commercial relationship more than five years (5.80) suggesting that suppliers from both groups perceived satisfaction with Kumba as more or less the same. Descriptives for supplier satisfaction scores also indicated high negative skewness, -1.83 and -1.45 for both

groups respectively. The histograms provided in *Appendix B11* also depicted negatively skewed distributions for both groups. A boxplot for the distributions of supplier satisfaction scores for both groups are provided in Figure 7. There were outliers in both groups, however substantially more outliers for suppliers that had a commercial relationship less than 5 years.

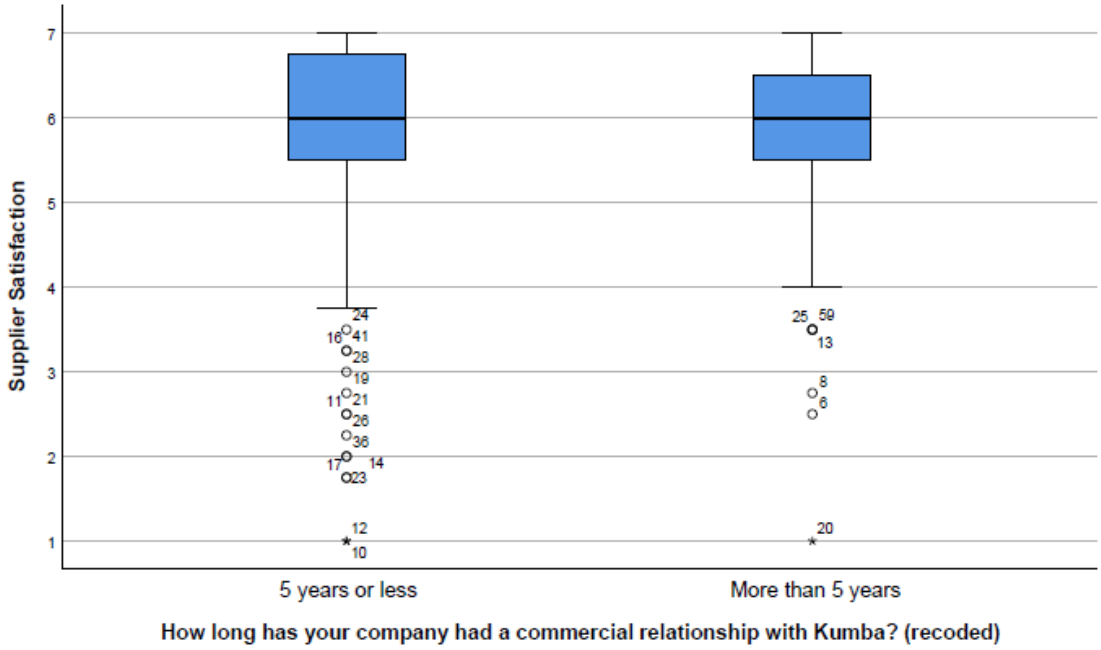

Figure 7. Distribution of supplier satisfaction scores (< 5 years and > 5 years)

5.5.8.2. Test for normality

The Kolmogorov-Smirnov test (Pallant, 2007) was used to test the normality of supplier satisfaction scores for two groups, the first (n = 196) for suppliers with a commercial relationship less than 5 years and the second (n = 173) for suppliers with a commercial relationship more than 5 years. Using a 5% level of significance, the following hypotheses were used to assess normality:

H_o – Normally distributed H_a – Not normally distributed

In Table 48, the Kolmogorov-Smirnov test for normality revealed a p-value = 0.000 for both groups. Since the p-values were less than 0.05 (p-value < 0.05), the null hypothesis namely: Normally distributed, for both groups were rejected implying non-normal distributions.

Table 48. Kolmogorov-Smirnov test for normality

Kolmogorov-Smirnov[a]	rCV6	Statistic	df	Sig.
SuppSat	5 years or less	0,202	196	0,000
	More than 5 years	0,200	173	0,000
a. Lilliefors Significance Correction				

5.5.8.3. Comparison of differences

To test Hypothesis 4, the Mann-Whitney U test (Pallant, 2007) was used because of the non-normal distributions together with a significant number of outliers. Hypotheses for testing the differences in supplier satisfaction scores are:

H_o – No difference between groups H_a – Difference between groups

The results of the Mann-Whitney U test are provided in Table 49.

Table 49. Mann-Whitney U test

Test statistics[a]	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
SuppSat	14886,000	29937,000	-2,046	0,041
a. Grouping Variable: rCV6				

A Sig. value of 0.041 is less than 0.05 (p-value < 0.05). Accordingly, the null hypothesis, namely: There is no difference between the groups, was rejected implying there are differences between the groups.

Table 50. Summary of descriptives

	rCV6	N	Mean	Std. Deviation	Std. Error Mean	Mean Rank	Median
SuppSat	5 years or less	196	5,86	1,246	0,089	195,55	6.000
	More than 5 years	173	5,80	0,968	0,074	173,05	6.000

In the summary of descriptives from Table 50, both groups of suppliers appeared to perceive their relationship with Kumba as equally satisfactory. However, the Mann-Whitney test indicates a difference in perceived satisfaction between the two groups.

5.5.8.4. Hypothesis 4: Conclusion

From the empirical evidence, suppliers with a commercial relationship less than 5 years were more satisfied with Kumba than suppliers with a commercial relationship longer than 5 years. Therefore, ***H4:*** *Supplier satisfaction improves with the length of a commercial relationship between a buyer and a supplier,* was rejected.

5.6. Conclusion

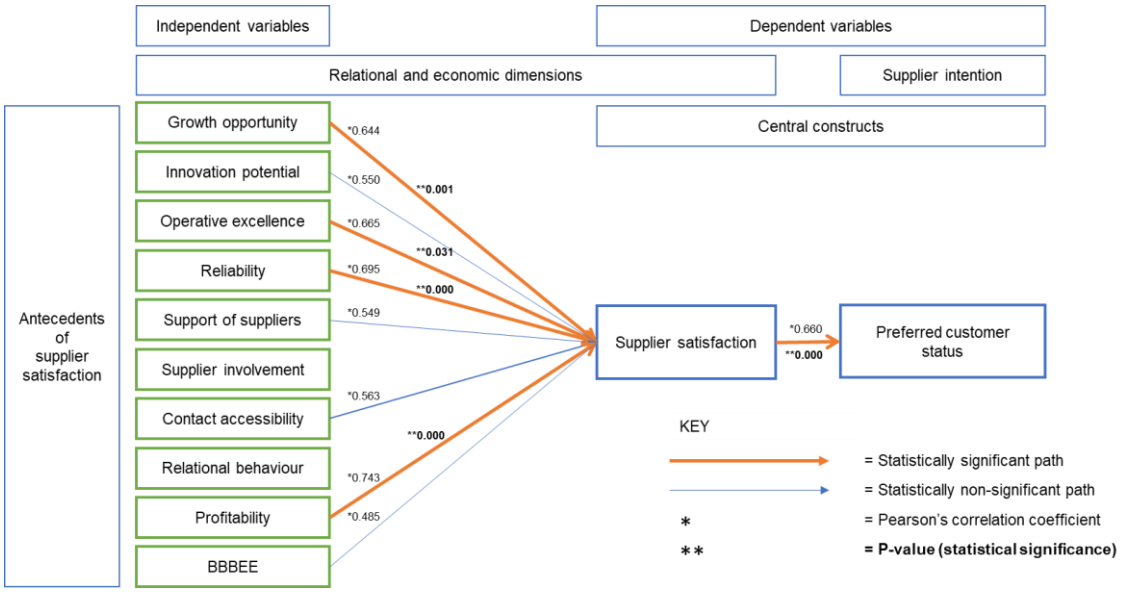

Figure 8. Outputs of conceptual model.

In Figure 8, the outputs of the statistical model are provided in a graphical format. With reference to Table 38, four antecedents of supplier satisfaction were identified as statistically significant predictors of supplier satisfaction, namely (1) profitability, (2) reliability, (3) growth opportunity and (4) operative excellence whereas, in the study conducted by Vos et al. (2016), five antecedents were identified as statistically significant, namely, (1) profitability, (2) relational behaviour, (3) reliability, (4) operative excellence, and (5) growth opportunity. Thus, the studies differed in terms of the number of predictors of supplier satisfaction (relational behaviour being the difference), as well as the degree of influence each predictor exerted on supplier satisfaction. In both studies, supplier satisfaction was found to be a statistically significant predictor of preferred customer status. With respect to perceived differences in supplier satisfaction between BBBEE suppliers and non-BBBEE suppliers, the evidence indicates that BBBEE suppliers were no different from non-BBBEE suppliers. This implies that BBBEE were no less or more satisfied than non-BBBEE suppliers despite Kumba's efforts to provide BBBEE suppliers with commercial and operational privileges. In terms of differences in perceived supplier satisfaction as a function of the length of commercial relationship with Kumba, suppliers with a commercial relationship less than five years were more satisfied than those with a commercial relationship longer than five years.

CHAPTER 6: DISCUSSION OF RESULTS

6.1. Introduction

The objective of this study was to identify and understand those drivers of supplier satisfaction that would enable a buying firm (Kumba) to manage and improve the relational and economic dynamics within a buyer-supplier dyad for a dual purpose:

- Firstly, to improve the level of satisfaction experienced by suppliers and therefore, the image of the buying firm from a supplier perspective; and
- Secondly, to secure access to supplier resources that offer competitive advantage by achieving preferred customer status.

In *Chapter 5: Research results*, the antecedents, or drivers, of supplier satisfaction and their influence on supplier satisfaction were explored to provide insights into these relational and economic dynamics. The propensity of suppliers to confer preferred customer status upon a buying firm was also investigated. In this chapter, the results gleaned from the statistical analysis are further explored and discussed.

6.2. Demographic information

6.2.1. Position of respondents within supplier firms

From a database of 1500 potential supplier respondents, a total of 472 responses were received. For a variety of reasons, 103 responses were removed leaving 369 fully completed responses available for statistical analysis. Most of the respondents (76%) were senior actors, such as board members, CEOs, sole owners or supply chain experts within their firms. Given their senior positions, these respondents were likely to be involved in the strategic management of their respective businesses, responsible for direct and/ or indirect interaction with Kumba and therefore well-positioned to provide insights into their perceived level of satisfaction with Kumba. In general, these respondents could be considered important decision-makers, and therefore, ultimately responsible for deciding whether to confer preferred customer status upon their customers, and more importantly, take strategic decisions regarding preferential treatment and/ or the allocation of resources to customers.

6.2.2. Micro, small, medium and large enterprises

At the onset, this study anticipated a sizeable number of small and micro enterprises as opposed to a large number of large enterprises. However, the survey indicated that 77% of all suppliers were either large or medium enterprises. Given the importance of small enterprises for the development of the South African economy (Smit, 2012), and the need to comply with the targets set out in the mining charter (Braod Based Socio-Economic Charter for the Mining and Minerals Industry, 2018), Kumba's current efforts to develop small business fall well short of the expected regulatory trajectory (*Kumba Iron Ore Limited Integrated Report 2018*, 2019). Part of the challenge remains unearthing small BBBEE suppliers that have the necessary technical capability and capital to meet the rigours of the mining industry. This is also reflective of the broader national trend that sees ineffective supplier development.

6.2.3. Broad Based Black Economic Empowerment status

From the sample of respondents, almost 85% of all supplier firms were in possession of BBBEE status. Further, 60% of all supplier respondents were classified as both large to medium sized enterprises as well as black empowered (BBBEE status), implying a limited pool of black empowered micro to small size vendors. Moreover, small firms are usually confronted by a host of constraints which impede their ability to conduct a meaningful commercial relationship with large industrial buying firms such as Kumba. These constraints include poor business skills, insufficient funding and a lack of access to infrastructure (Van Rensburg, 2016). Given a pool of small-sized BBBEE suppliers that could be described as ill-equipped to conduct business, large buying firms such Kumba often struggle to source small firms that are capable of meeting their stringent quality and reliability requirements. BBBEE status and the size of an enterprise are therefore intrinsically linked. Understanding this relationship is especially important for a large buying firm such as Kumba, which has to fulfil its social responsibility to the local mining community, meet the legislative targets defined by the mining charter, and remain profitable and sustainable as an entity on its own.

6.2.4. Length of commercial relationship with Kumba

The relationship between supplier satisfaction and length of commercial relationship was explored to determine if supplier satisfaction was dependent on

the duration of the commercial interaction. Accordingly, completed responses were stratified into groups defined by the length of their commercial interaction with Kumba. The data indicated that more than 45% of respondents conducted business with Kumba for more than five years, of which, at least half represented suppliers that conducted business with Kumba for more than 10 years. In addition, 52% of supplier respondents had a commercial relationship less than five years long.

As a business that was established more than 70 years ago, Kumba has a host of legacy suppliers, some of whom have conducted business with Kumba for more than 20 years. With service records spanning more than two decades, the reasons for remaining in such an extended arrangement require further investigation and replication to benefit from long-term relationships.

6.3. Hypothesis 1: Supplier satisfaction and its antecedents

For the purpose of discussion, the sub-hypotheses to test the relationship between the antecedents of supplier satisfaction and supplier satisfaction are recalled:

H1a: *Growth opportunity for suppliers has a statistically significant positive impact on supplier satisfaction.*

H1b: *Innovation potential for suppliers has a statistically significant positive impact on supplier satisfaction.*

H1c: *Customers' operative excellence has a statistically significant positive impact on supplier satisfaction.*

H1d: *Customers' reliability has a statistically significant positive impact on supplier satisfaction.*

H1e: *Customers' support of suppliers has a statistically significant positive impact on supplier satisfaction.*

H1f: *Customers' supplier involvement has a statistically significant positive impact on supplier satisfaction.*

H1g: *Customers' contact accessibility has a statistically significant positive impact on supplier satisfaction.*

H1h: *Customers' relational behaviour toward suppliers has a statistically significant positive impact on supplier satisfaction.*

H1i: *The perceived profitability of the relationship has a statistically significant positive impact on supplier satisfaction.*

H1j: *The perceived importance of BBBEE status has a statistically significant positive impact on supplier satisfaction*

6.3.1. Statistically significant antecedents of supplier satisfaction

From the empirical results in this study, four antecedents, (1) profitability, (2) reliability, (3) growth opportunity, and (4) operative excellence were confirmed as statistically significant predictors of supplier satisfaction. A comparative study conducted by Vos et al. (2016) in the automotive sector in Germany, identified five antecedents as statistically significant predictors of supplier satisfaction, namely, (1) profitability, (2) relational behaviour, (3) reliability, (4) operative excellence, and (5) growth opportunity. In comparison to this study, the only difference was relational behaviour. Given the differences between the mining and automotive sectors, profitability, reliability, growth opportunity and operative excellence emerged as universal drivers of supplier satisfaction irrespective of the nature of the product. Further research in other sectors is recommended to confirm this.

In Table 51, the correlations matrix highlight the strength of the correlations between the antecedents of supplier satisfaction and supplier satisfaction as well as the strength of the interrelationships between the antecedents of supplier satisfaction themselves. Weak correlations (< 0.5) are presented in red.

Table 51. Correlations matrix

Pearson's correlation	SuppSat	GrowthOpp	InnovPot	OpExcel	Rely	Support	SuppInv	ContAcc	RelBe	Profit	BEE
SuppSat	1,000	0,627	0,535	0,646	0,679	0,537	0,580	0,547	0,739	0,725	0,473
GrowthOpp	0,627	1,000	0,765	0,707	0,565	0,748	0,738	0,647	0,767	0,622	0,661
InnovPot	0,535	0,765	1,000	0,703	0,484	0,732	0,789	0,540	0,687	0,564	0,622
OpExcel	0,646	0,707	0,703	1,000	0,670	0,733	0,817	0,662	0,813	0,634	0,588
Rely	0,679	0,565	**0,484**	0,670	1,000	0,487	0,561	0,508	0,764	0,652	0,463
Support	0,537	0,748	0,732	0,733	**0,487**	1,000	0,780	0,597	0,710	0,560	0,609
SuppInv	0,580	0,738	0,789	0,817	0,561	0,780	1,000	0,685	0,772	0,631	0,579
ContAcc	0,547	0,647	0,540	0,662	0,508	0,597	0,685	1,000	0,699	0,553	0,503
RelBe	**0,739**	0,767	0,687	0,813	0,764	0,710	0,772	0,699	1,000	0,767	0,667
Profit	0,725	0,622	0,564	0,634	0,652	0,560	0,631	0,553	0,767	1,000	0,575
BEE	**0,473**	0,661	0,622	0,588	**0,463**	0,609	0,579	0,503	0,667	0,575	1,000

With the exception of BBBEE, every antecedent was highly correlated to supplier satisfaction (> 0.5). Similarly, with the exception of three weak inter-antecedent

relationships namely, (1) reliability and innovation potential, (2) reliability and support of suppliers, and (3) reliability and BBBEE, all other inter-antecedent relationships were strong or highly correlated. This suggests that supplier satisfaction, as a construct, is the outcome of a set of preconditions (antecedents) which, in turn, have a dynamic and positive relationship with each other. These findings were aligned to those reported by a number of other studies (Schiele, Veldman, & Hüttinger, 2011; Hüttinger et al., 2014; Essig & Amann, 2009). In the discussion that follows, some of these interrelationships are qualified.

Supplier satisfaction as an independent construct reflected a high value for Cronbach's alpha (α=0.89) confirming the internal consistency between the items. Suppliers perceived Kumba to be a customer in good standing and did not regret their decision to conduct business with Kumba. Though pleased to have Kumba as a business partner, suppliers were somewhat less enamoured by the overall relationship with Kumba, potentially implying underlying reservations about the relationship or scope for improvement. Some of these reservations surfaced in the analysis of the antecedents of supplier satisfaction.

6.3.1.1. Profitability

The findings of this study confirm profitability as a statistically significant predictor (p-value = 0.00) of supplier satisfaction. The additional hypothesis in this study, namely that profitability has a positive impact on supplier satisfaction, introduced by Vos et al. (2016) to the original model of Hüttinger et al. (2014), was thus confirmed. As an economic antecedent, profitability was the strongest positive predictor of supplier satisfaction. From the results, the inclusion of Profit3 namely, favourable pricing offered to Kumba, yielded a weak Cronbach's alpha (α=0.58) for profitability indicating a poor or inappropriate dimension of profitability. Suppliers perceived their relationship with Kumba as profitable and sustainable despite favourable pricing offered to Kumba implying that it is possible to offer favourable pricing and remain both profitable and sustainable. This suggests that the Profit3 needs to be eliminated or revised for future studies. Notwithstanding, suppliers across the board responded strongly in terms of indicating that they did provide Kumba with favourable pricing which is important information for Kumba in terms of assuming a negotiating stance.

From the results for relational behaviour, a relational antecedent of supplier satisfaction, certain suppliers were unconvinced about Kumba's willingness to share rewards and costs. Because rewards and costs impact the profitability of suppliers as well as the demeanour of Kumba's negotiation stance, it was inferred that certain suppliers did not perceive Kumba to be a good faith negotiator, which impacted profitability negatively. This is discussed further in reliability below.

6.3.1.2. Reliability

In *Chapter 2: Literature review*, reliability as a relational construct, was explained as the ability to keep a promise or create an environment that is perceived as fair and free from exploitation (Hüttinger et al., 2014). In line with previous studies conducted by Vos et al. (2016) and Hüttinger et al. (2014), reliability was confirmed as the second most statistically significant predictor (p-value = 0.00) of supplier satisfaction. With a high Cronbach's alpha (α=0.82), the items used to measure reliability reflected high internal consistency. In terms of these items, Kumba was perceived as truthful and consistent when presenting facts to uphold the terms and conditions of the applicable commercial agreements. However, certain suppliers were less satisfied with Kumba's negotiating stance which was perceived as unfair or not in good faith. This was supported by the descriptive statistics, wherein 10% of suppliers perceived some form of untoward behaviour.

Because of the level of commercial risk associated with negotiations, good faith plays an important role in terms of propagating positive perceptions of supplier satisfaction. Given the discussion around Profit3 above, it was inferred that procurement practitioners within Kumba take a hard-line approach to price negotiations. Since reliability has a substantial influence on supplier satisfaction, practitioners should enhance their relational demeanour towards suppliers, particularly those of strategic and tactical importance where there are high levels of inter-dependency and common growth ambitions.

6.3.1.3. Growth opportunity

From the results in this study, growth opportunity, as an economic antecedent, was confirmed as the third most statistically significant predictor (p-value = 0.01) of supplier satisfaction while items related to growth opportunity were confirmed as internally consistent (α=0.73). According to Walter et al. (2001), growth opportunity

extends beyond direct business and may include expanding a business into new markets and new products. Thus, new products and new markets were explored as potential dimensions of growth opportunity. In this regard, suppliers were unconvinced about Kumba's ability to offer them any significant advantages, most notably, with respect to growing market share and/ or exploiting new opportunities. Nor did Kumba offer support for suppliers to become dominant players in their respective markets. However, Kumba was perceived as important for growth rates, suggesting that suppliers were either largely or solely dependent on Kumba for growth. By virtue of this dependence, suppliers were also likely to feel constrained in the market. This insight is consistent with the economic reality in the Northern Cape where Kumba is responsible for the bulk of economic activity. Thus supplier markets were also constrained by geographical location meaning that supplier dissatisfaction relating to growth opportunities cannot be solely attributed to Kumba.

From Table 51, growth opportunity and innovative potential emerged as one of the most highly correlated inter-antecedent relationships. This suggests that buying firms who support and encourage innovation were perceived as customers that offer growth opportunities, and therefore, were perceived as attractive. Since innovation enables firms to differentiate themselves, it also creates opportunities for new products and new markets. In this regard, Kumba was perceived as disinclined to provide opportunities.

It is important to remember that these findings are specific to the mining buyer-supplier relationships under study. Nevertheless, growth potential was found to be a statistically significant driver of supplier satisfaction, which was consistent with the findings from previous studies (Vos et al., 2016; Hüttinger et al., 2014).

6.3.1.4. Operative excellence

From this study, operative excellence was confirmed as the fourth and last statistically significant predictor (p-value = 0.03) of supplier satisfaction. Items related to operative excellence were confirmed as internally consistent (α=0.84). Both findings were consistent with those from previous studies (Vos et al., 2016; Hüttinger et al., 2014). Operative excellence refers to the ability to transact efficiently and effectively both financially and operationally (Essig & Amann, 2009).

Results from this study revealed that suppliers perceived Kumba's decision-making processes as inefficient. Suppliers also perceived Kumba's demand forecasting processes (demand management which is critical to supplier performance) as unreliable. From a Kumba standpoint, costs are driven by poor supplier reliability in many cases. However supplier reliability is largely dependent on the ability of the buying firm to accurately predict and communicate anticipated consumption. Kumba is therefore accountable for costs resulting from poor forecasting. Positive perceptions of Kumba, related to simple and transparent processes, was limited to half the sample implying different treatment for different suppliers or better treatment for some suppliers. The nature of those suppliers or the criteria by which these suppliers receive "preferential treatment" require further investigation.

From the correlations matrix in Table 51, operative excellence was most correlated to relational behaviour and supplier involvement. In the comparative study conducted by Vos et al. (2016), relational behaviour was identified as statistically significant, whereas in this study it was removed (along with supplier involvement) for reasons of collinearity. From a conceptual perspective, operative excellence can easily be explained as the outcome of both relational behaviour and supplier involvement which encompass matters of buyer-supplier collaboration. In this context, operative excellence is the outcome of collaboration as a driver of mature integrated supply chain processes, effective communication and co-operative problem solving which contributes to positive confirmation of supplier satisfaction (Essig & Amann, 2009). In this study, both antecedents (relational behaviour and supplier involvement) were highly correlated to supplier satisfaction. From an empirical perspective, outside of correlation coefficients, the relationship between operative excellence and these two antecedents remain unquantified. Qualitative commentary for relational behaviour and supplier involvement is provided in *Section 6.3.3.1 Relational behaviour and supplier involvement*.

6.3.2. Statistically insignificant predictors of supplier satisfaction

6.3.2.1. Broad Based Black Economic Empowerment (BBBEE)

Because certain BBBEE suppliers are the beneficiaries of financial and operational support, BBBEE status, as an exploratory antecedent of supplier satisfaction, enjoyed the unique distinction of being both relational and economic as well as specific to South Africa. For these reasons, the findings of this study require further

research and validation. In this study, BBBEE status was the most poorly correlated (0.47) antecedent of supplier satisfaction and did not emerge as a statistically significant (p-value = 0.09) predictor of supplier satisfaction. However, items related to BBBEE status (α=0.82) were validated as internally reliable. Suppliers did not perceive themselves to be the beneficiaries of any advantages that could be attributed to BBBEE status. On average, items related to BBBEE status revealed that suppliers did not consider financial support from Kumba to be "enough". Nor did they perceive any growth or improvement in the relationship as a consequence of their BBBEE status. Given a challenging business environment, the feedback received from the majority of BBBEE suppliers was unsurprising. Notwithstanding, it is important to note that suppliers' responses were distributed across the Likert-type measurement scale indicating that a small BBBBE group of suppliers were satisfied with the support offered by Kumba.

From a Kumba perspective, the provision of support is extremely selective. Nonetheless, BBBEE suppliers do receive financial support, both directly, in the form of cash injections or financing, and indirectly, in the form of guaranteed business. Irrespective of the nature of support provided, support for BBBEE suppliers is granted on an ad-hoc basis depending on the immediate need for goods and/ or services and the viability of the business case in question. This indicates a reactive approach, or the absence of a strategy to achieve the objectives of the business or the legislated targets defined by the mining charter.

6.3.2.2. Innovative potential

With reference to Figure 1, innovative potential differs from supplier involvement in that it applies to products/ services that enable the value chain as opposed to products/ services that are the output of the value chain. From theory (Ellis et al., 2012), innovative potential measures the ability of a buying firm to create an environment that is conducive for innovation to take place. In this regard, suppliers perceived potential to innovate and develop new products in collaboration with Kumba. However, they were dissatisfied with the time taken to translate these opportunities into tangible benefits.

As a relational antecedent, innovative potential was correlated (0.54) to supplier satisfaction and confirmed as a statistically insignificant predictor (p-value = 0.99)

of supplier satisfaction. However, the items related to innovative potential were internally consistent (α=0.84) with each other. In the comparative study (Vos et al., 2016), innovative potential was identified as a second tier antecedent of growth opportunity. This study did not consider second-tier antecedents. Nevertheless, it does recognise the strong correlation (0.77) between innovative potential and growth opportunity.

6.3.2.3. Support of suppliers

As a relational antecedent, support of suppliers indicates the willingness of the buying firm to support suppliers directly in terms of technical, technological, manufacturing, and safety advise or otherwise (Walter et al., 2003). In this regard, 35% of all supplier respondents indicated receipt of some form of support in the past. While this percentage of supported suppliers cannot be automatically extended and applied to the full contingent of suppliers in Kumba's database, it did reflect a remarkably high level of support for the sample, irrespective of the type of support provided. In Kumba, much of the support offered to suppliers is related to safety protocols, safety gear and safety workshops sponsored by Kumba. Given Kumba's extraordinary safety track record for minimising injuries and deaths (*Kumba Iron Ore Limited Integrated Report 2018*, 2019), it is entirely possible that supplier perceptions related to support were informed by Kumba's efforts around safety. From a survey perspective, this indicates a weakness in the level of detail solicited from suppliers and could be addressed in another survey.

In the South African context, with particular reference to the mining sector, support for entry level and intermediate BBBEE suppliers is especially relevant. BBBEE status and support for suppliers were considered distinct antecedents for inclusion in this study, in part because of the need to validate existing theory in a local context. At present, BBBEE suppliers are beneficiaries of financial and operational support. Therefore, from a conceptual perspective, support for suppliers and BBBEE status should be combined for future research in South Africa.

As a relational antecedent, support for suppliers was correlated (0.54) to supplier satisfaction and confirmed as a statistically insignificant predictor (p-value = 0.51) of supplier satisfaction. The items related to support of suppliers were internally

consistent (α=0.79). In the comparative study (Vos et al., 2016), support of suppliers was identified as a second tier antecedent of relational behaviour.

6.3.2.4. Contact accessibility

Contact accessibility refers to access to clearly identified people within a buying firm for the explicit purpose of resolving problems that may arise in the course of conducting business (Hald et al., 2009). As a relational antecedent of supplier satisfaction, contact accessibility was confirmed as a statistically insignificant predictor (p-value = 0.32) of supplier satisfaction. However, it was correlated (0.55) to supplier satisfaction. Contact accessibility was also well correlated to growth opportunity (0.65) and supplier involvement (0.69). From the comparative study (Vos et al., 2016), contact accessibility was identified as a second tier antecedent of operative excellence. Considering the outputs of the descriptive statistics, suppliers perceived themselves as partners (as opposed to mere suppliers) with access to "contacts", though ineffective or inefficient, within Kumba to resolve problems. Suppliers also perceived their relationship with the buying firm as a mechanism for growing their own businesses. If these assertions held true, it would lend credence to the notion that buyer-supplier relationships are perceived as levers that empower suppliers to develop their own businesses and therefore a source of supplier satisfaction. This requires further research.

Large buying firms, such as Kumba, that possess market power, are generally spoilt for choice when conducting business with suppliers. Based on the discussions in *Section 6.3.1.1 Profitability* and *Section 6.3.1.2 Reliability*, abuse of market power did present, however it was not as widespread as anticipated which also explains why Kumba, for the most part, was perceived as a customer in good standing.

6.3.3. Antecedents removed from the statistical analyses

6.3.3.1. Relational behaviour and supplier involvement

In this study, relational behaviour and supplier involvement were removed as a consequence of multicollinearity. Both antecedents, relational behaviour (0.74) and supplier involvement (0.58), were highly correlated to supplier satisfaction while Cronbach's alpha values (α=0.89 and α=0.83 respectively) confirmed the internal reliability of items. Because the outputs of this study for these constructs were

limited to correlation data and reliabilities, inferential analyses related to the relationship between supplier satisfaction and these antecedents remain untested and therefore an avenue for further research in the mining sector. In terms of relational behaviour, suppliers perceived Kumba as committed to a collaborative relationship, willing to assist, and flexible in dealing with problems that had consequences for both parties. However, there were reservations about the equitable distribution of rewards and cost savings between business partners . With reference to Figure 1, supplier involvement referred to collaboration around new products that were outputs of the mining value chain. Unlike relational behaviour, supplier involvement was less likely to be a predictor of supplier satisfaction in the mining sector because cycle times for new product development in the mining sector are far longer than that of the automotive sector. From the comparative study (Vos et al., 2016), supplier involvement was identified as a second tier antecedent of relational behaviour.

6.4. Hypothesis 2: Supplier satisfaction and customer status

6.4.1. Supplier satisfaction and preferential treatment

In this study, the data indicated that 43.6% (R^2=0.44) of the variance in preferred customer status could be explained by supplier satisfaction. This implies that supplier satisfaction was significant in terms of influencing a supplier's propensity to confer preferred customer status upon a buying firm. From the data collected, supplier satisfaction was confirmed as a statistically significant predictor (p-value = 0.00) of preferred customer status which concurred with the findings from previous studies (Vos et al., 2016; Hüttinger et al., 2014).

6.4.2. The benefits of preferred customer status

From the data collected, despite certain reservations held by suppliers, at least 75% of all supplier respondents perceived their relationship with Kumba as satisfactory. In addition, at least 75% of all supplier respondents perceived Kumba to be a preferred customer. In comparison to other customers, suppliers declared favourable pricing for Kumba, greater care for Kumba, and a greater willingness to collaborate with Kumba. Suppliers also confirmed that Kumba was the recipient of preferential treatment and that they were "willing to go out on a limb for Kumba". From a practical standpoint, preferential pricing, as a form of preferential treatment, was awarded to Kumba because Kumba was perceived to be a preferred customer

(Ramsay & Wagner, 2009). However, perceptions of preferred customer status were informed by perceptions of supplier satisfaction. Therefore, preferential pricing was the outcome of supplier satisfaction. This argument, based on the empirical evidence from this study, is consistent with findings from prior research wherein satisfied suppliers demonstrated a tendency to award preferred customer status to customers along with benefits such as favourable pricing (Nollet et al., 2012; Schiele et al., 2011). More importantly it confirms that supplier satisfaction is a legitimate source of competitive advantage for buying firms (Vos et al., 2016).

6.5. Hypothesis 3: Supplier satisfaction and BBBEE status

As indicated in *Section 6.3.2.1 Broad Based Black Economic Empowerment*, BBBEE status was investigated as an exploratory antecedent of supplier satisfaction. At present, certain BBBEE suppliers are the beneficiaries of financial and/ or operational support. By virtue of these benefits, this study anticipated that BBBEE suppliers would be more satisfied than non-BBBEE suppliers at a minimum. However this was not the case. A critical shortcoming in the analysis of Hypothesis 3 was the identification of BBBEE suppliers that were indeed recipients of support. Similarly, it was mistakenly assumed that non-BBBEE suppliers did not receive support of any kind. In the absence of data explaining why BBBEE suppliers were no more (or no less) satisfied than their non-BBBEE counterparts, this study was unable to glean insights into the specific drivers of satisfaction for BBBEE suppliers. Therefore, in addition to BBBEE status, future research must draw a distinction between suppliers who did receive support and those who did not. In the South African context, it is necessary for buying firms to understand the needs of BBBEE suppliers in order to institute supplier development programmes that can yield supplier satisfaction in a pragmatic and meaningful way. This is discussed further in *Chapter 7: Conclusion and future research*.

6.6. Hypothesis 4: Supplier satisfaction and length of relationship

From a supplier satisfaction point of view, a supplier's decision to renew a contract with a buying firm is informed, in part, by the frequency and severity of contract violations. This implies that untoward or unethical acts committed by a buying firm over the duration of a commercial relationship were perceived as a violation of a psychological contract or a breakdown in trust which led to dissatisfaction (Hill et al., 2009). According to Hill et al. (2009), as the duration of a commercial

relationship increases, suppliers were less inclined to forgive buying firms for any perceived violations but also, were more likely to be benevolent towards a buying firm if the relationship was satisfying.

In this study, a renewed contract between Kumba and a supplier, which increases the duration of the commercial relationship, premised mutual satisfaction between the parties. However, the results indicated that suppliers with longer relationships (> 5 years) were less satisfied than suppliers with short relationships (< 5 years). Based on this evidence and the findings offered by Hill et al. (2009), it was possible to conclude that while Kumba did manage to sustain long-term relationships with 45% of its suppliers, it was unlikely to benefit from long-term supplier benevolence. From *Section 6.4.2 The benefits of preferred customer status*, supplier satisfaction was established as a source of competitive advantage. Given their current strategy and future ambitions, Kumba must address why supplier satisfaction decreased as the length of relationship increased in order to benefit from long-term supplier benevolence, a precondition necessary for enhancing competitive advantage.

6.7. Conclusion

In this chapter, supplier satisfaction was validated as a source of competitive advantage for buying firms. Four dimensions, namely, profitability, reliability growth opportunity and operative excellence were identified as the most significant drivers of supplier satisfaction. Further, based on theory, relational behaviour cannot be ruled out as a dimension of supplier satisfaction.

Large industrial buying firms such as Kumba can leverage these drivers to pursue preferred customer status, harness supplier resources and achieve competitive advantage. However, in the South African context, supply chain practitioners cannot discount the complexity of BBBEE in terms of supplier development and its influence on supplier satisfaction. Moreover, the duration of commercial relationships between Kumba and its suppliers, as a source of supplier dissatisfaction, must be addressed to benefit from long-term supplier benevolence.

CHAPTER 7: CONCLUSION

This chapter presents a summary of the findings from this study, its implications for business and managers, limitations, and lastly, suggestions for future research.

7.1 Introduction

The aim of this study was to identify the measures required to enhance supplier satisfaction and achieve preferred customer status for Kumba Iron Ore Ltd., a business unit within Anglo American. To achieve this, extant theory was used to identify the relevant theoretical constructs and develop a supplier satisfaction questionnaire which was administered to Kumba's supplier base. Exploratory factor analysis and regression analysis were subsequently used to isolate the relevant drivers of supplier satisfaction and assess their influence in terms of manifesting preferred customer status. The implications of these findings, relevant to a buying firm's preferred customer strategy, are discussed herein.

7.2. Principal findings

The findings from this study showed that supplier satisfaction is a source of competitive advantage for buying firms and the outcome of a combination of both economic and relational drivers (Vos et al., 2016; Pulles, Schiele, et al., 2016). While the importance of economic drivers are usually emphasised, this study has revealed that relational drivers, namely, reliability and operative excellence, were as influential as economic drivers such as profitability and growth opportunity. This implies that buying firms have both economic and relational levers at their disposal to achieve preferred customer status, secure supplier resources and thereby gain competitive advantage.

Importantly, the success of any buyer-supplier relationship depends on the level of trust perceived by the parties concerned. This means that a buyer-supplier partnership can only create value if the relationship is perceived as fair, ethical and free from opportunism. Therefore, as a departure from the traditional marketing paradigm, which requires suppliers to compete for customers, buying firms have to compete for suppliers and their resources (Schiele et al., 2012) by demonstrating their trustworthiness and goodwill towards suppliers over the short and long term.

Finally, large buying firms, such as Kumba, oversee a vast portfolio of suppliers, each at different stages of commercial and/ or operational maturity. This was supported by the data, from which a recurring theme of supplier individuality emerged. To address the individuality of suppliers, for the purpose of SMME development and BBBBE compliance, a supplier segmentation model which informs the allocation of buyer support based on supplier maturity is proposed. This is particularly relevant in the South African context where BBBEE legislation can introduce a significant amount of complexity to the procurement process.

7.3. Implications for business and management

7.3.1. Supplier satisfaction and preferred customer status

From a supply chain management perspective, any large buying firm that hopes to achieve a competitive advantage, should pursue a preferred customer strategy. A preferred customer strategy means that suppliers must perceive the buying firm as a preferred customer in comparison to the supplier's other customers (Schiele et al., 2012). Therefore, a corporate image that promotes trust and confidence in the buying firm is central to achieving preferred customer status. Such a strategy comprises the commitment of financial, operational and human resources towards improving supplier perceptions of the buying firm as was indicated by Baxter (2012). By managing supplier satisfaction through a relationship, buying firms can gain access to supplier resources. In addition, buying firms need to ensure that they are attuned and responsive to the changing needs of their supplier base. However, from the perspective of a supplier, preferred customer status is a subjective notion. Therefore, relative to their competitors, buying firms need to locate themselves within supplier markets before embarking on a strategy. This can be achieved my conducting supplier satisfaction surveys at regular intervals.

7.3.2. Economic drivers of supplier satisfaction

7.3.2.1. Profitability

In this study, profitability was confirmed as the most significant predictor of supplier satisfaction. Thus, for Kumba, in addition to supplier portfolio management (SPM) best practise, the implications of mutual profitability for the relationship as well its impact on supplier satisfaction should be combined to construct a preferred customer strategy. Moreover, irrespective of the size of the supplier firm, long-term relationships are more suited to enhancing the competitive advantage for buying

firms. Therefore, this model becomes even more appropriate in instances where it is possible to forge long-term buyer-supplier partnerships.

As discussed previously, suppliers prefer a smaller number of customers that are committed to large volumes since it allows them to rationalise their product offering and consolidate the marketing and logistics burden which leads to cost reductions over time (Hald et al., 2009). This implies that suppliers perceive large volume commitments as profitable business. By committing to large volumes over extended periods, where it makes sense to do so, buying firms can contribute to profitability by leveraging the benefits of long-term supplier benevolence.

Profitability is also linked to the efficiency of the financial and operational interfaces between buyers and suppliers. Extensive processes and controls to manage these interfaces tend to become expensive and inefficient. Likewise, value leakage resulting from poor processes and controls represent a huge risk to profitability. In both scenarios, suppliers perceive a buyer's operational ineffectiveness as a cost driver, a contributor to poor profitability and therefore unattractive (Hüttinger et al., 2014). To improve these perceptions, processes and controls should be negotiated and agreed to in partnership with suppliers where feasible. These agreements should also be operationalised within commercial agreements and managed through the relational drivers of supplier satisfaction to improve profitability.

7.3.2.2. Growth opportunity

Simply stated, growth opportunity is perceived by a supplier when a buying firm experiences growth (Hüttinger et al., 2014). From a supplier satisfaction standpoint, buying firms stand to benefit from being perceived as a source of growth. In this regard, Kumba, as a business unit within a global multinational, is very attractive to suppliers because it has the potential to offer suppliers access to new markets, and with it, a demand for new and innovative products. In this study, innovative potential emerged as highly correlated to growth potential which suggest that Kumba would benefit from promoting itself as a catalyst for access to new markets. This would encourage innovation, which by itself is widely recognised as a compelling mechanism for realising cost savings (Bryant, 2015). To achieve these outcomes, a portfolio of innovative suppliers that is focussed on driving innovation in the business should be incorporated as part of a preferred customer strategy (Schiele et al., 2012).

7.3.3. Relational drivers of supplier satisfaction

7.3.3.1. Reliability and trust

In a buyer-supplier relationship, trust is an issue that deserves explicit discussion. In this study, reliability emerged as the second most important driver of supplier satisfaction. Items for reliability, related to suppliers' perceptions of fair and equitable contractual negotiations, revealed that at least 10% of suppliers experienced some form of untoward behaviour during the course of their interactions.

Dwyer et al. (1987) explains that trustworthy behaviour emanates from a sense of shared values and common objectives as opposed to a collection of commercial transactions. According to Hüttinger et al. (2014), trust is also based on expectations of equitable risk and reward sharing. Thus, the tendency of a supplier to award a buying firm with preferred customer status, along with its associated benefits, is dependent on a supplier's perception of trust. In general, negotiations represent a commercial risk to the buyer-seller relationship. With respect to a preferred customer strategy, buying firms should avoid the misuse of power, negotiate in good faith and steer away from opportunistic behaviour in order to be perceived as trustworthy. Large buying firms such as Kumba that hold substantial market power, are reminded to adopt a negotiation stance that is conducive to problem solving, since the absence thereof may compromise their ability to secure preferred customer status.

7.3.3.2. Operative excellence

As discussed in *Section 7.3.2.1 Profitability*, buying firms were perceived as unattractive if they were operationally ineffective. In this study, poor forecasting and inefficient decision-making emerged as clear areas for improvement. In addition, some supplier respondents perceived a lack of simple and transparent processes as well as long lead times to market.

From a supply chain perspective, operations refers to procurement, purchasing and logistics whereas from a mining perspective, operations refers to a multitude of on-site processing activities. This implies that suppliers interface with the business at different physical locations, are subject to different processes and different personnel and therefore dealt with in different ways. Large buying firm such as

Kumba usually adopt a tiered approach to efficient processing given a large supplier base. This means efficient high-volume processing for certain suppliers and bespoke processing for other suppliers which is arguably a plausible explanation for different perceptions of operative excellence.

In either case, with reference to a preferred customer strategy, buying firms can benefit from communicating controls and processes designed to improve the supplier experience. This inspires confidence in the systems and ultimately contributes towards positive perceptions of buyer capabilities. Naturally, this does not detract from an ongoing responsibility to invest in IT systems, other enabling technologies, and continuous improvement initiatives directed at improving the efficiency of the interfaces between buyers and their suppliers.

7.3.4. Broad Based Black Economic Empowerment

In this study, BBBEE status was included as a highly propositional antecedent of supplier satisfaction. As a general observation, suppliers perceived supplier satisfaction differently, which was deceptively obvious from a research perspective. Importantly, it implied that suppliers have highly individualised needs depending on their own capability and ability to compete in the market.

To address these individualised needs and improve perceptions of supplier satisfaction, Chavhan et al. (2018) recommend customised supplier development strategies formulated on the basis of supplier segmentation criteria that include the potential to innovate. From a study conducted by Van Rensburg (2016) in the steel industry, three categories for supplier segmentation were proposed for the institution of a BBBEE supplier development programme:

1. An entry level enterprise development group defined by a staff contingent that has basic technical skills. Entry level suppliers require incubation, that is, close ongoing supervision, financing, skills development and the provision of basic infrastructure where necessary.
2. A supplier development group defined by a need for business administration support. These suppliers typically require support in terms of quality assurance, reliability assurance protocols and financial management, however, less direct supervision; and

3. A preferential procurement group defined as fully-fledged vendors capable of competing in the market. Here the buying firm is only required to monitor and evaluate supplier performance to ensure compliance.

Thus, with respect to a preferred customer strategy, buying firms have to contend with a spectrum of individualised supplier needs that is dependent on the maturity of suppliers to compete in the market. From a conceptual perspective, if these segments are viewed as levels of supplier business maturity, it implies different forms of support at various stages in the development of a supplier before they become fully fledged and capable of competing in the market. In the context of supplier satisfaction, the allocation of different resources can influence supplier perceptions at all levels in unpredictable ways. In South Africa, large buying firms such as Kumba, are challenged to deal with such complexity by making the trade-off between broad-based support and focussed support. Thus, given the need for corporate social responsibility and BBBEE compliance, decisions related to support, and resource allocation will remain an ongoing challenge. Notwithstanding, a strategy to tackle this difficult problem using both broad-based and focussed support has the potential to be successful if managed appropriately.

7.4. Limitations of this study

This study was limited by a number of factors, most notably, a lack of granularity in the control variables that were employed to explore the different dimensions of supplier satisfaction. Because supplier satisfaction is associated with a large number of relational, behavioural, financial and operational variables, this study was unable to explore the full scope of predictors that could possibly influence supplier perceptions and its capacity to manifest as preferred customer status.

This study did not examine the influence of the commercial maturity of suppliers, their individualised needs, nor the distinction between goods and services on supplier satisfaction. Since it was cross-sectional, it did not provide a perspective that shows how supplier satisfaction changes with the commercial maturity of BBBEE suppliers which also changes over time. Further, it did not address the nuances that exist between direct, indirect and capital procurement (Vos et al., 2016). Accordingly, it did not make any assumptions regarding the homogeneity of the supplier base and positioned the study as an exploratory study of generic

supplier satisfaction antecedents. In addition, with the exception of basic correlations, it did not consider the impact of the interrelation between the antecedents of supplier satisfaction on supplier satisfaction. In this regard, the study did not consider the possibility of a tiered or hierarchical relationship between the antecedents of supplier satisfaction.

From previous studies (Hüttinger et al., 2014; Vos et al., 2016), relational behaviour was confirmed as the most significant predictor of supplier satisfaction. In this study, relational behaviour was eliminated because of collinearity, implying that the construct per se, was captured through the other constructs, and not that it was ruled out as a lever for enhancing supplier satisfaction. Also, the study did not provide insights into the power dynamics that exist between suppliers of varying size and large buying firms. (Benton & Maloni, 2005).

Vos et al. (2016), showed that suppliers perceive opportunities for innovation as attractive because of its potential to offer growth. However, as discussed in *Section 4.6 Limitations of the study*, this study excluded "customer attractiveness" as it relates to ex-ante attraction, that is, supplier attraction to a buying firm prior to a commercial relationship. Thus, in terms of a preferred customer strategy, this study was unable to provide insights into how Kumba can "attract" innovative suppliers for the purpose of competitive advantage. Researchers should note that supplier satisfaction does not imply customer satisfaction.

Finally, the findings from this study are limited to the relationship between Kumba and its suppliers from a supplier perspective and cannot be considered representative of the South African mining industry as a whole.

7.5. Suggestions for future research

Given the exploratory disposition of this study, future studies should reflect on the inclusion of antecedents that are specifically applicable to the South African context. Though profitability, reliability, growth opportunity and operative excellence emerged as universal drivers of supplier satisfaction, further research in other sectors is recommended to confirm this. In this study, item Profit3, namely, "Compared to other customers, we offer Kumba favourable pricing", was exposed as an unreliable item for measuring supplier profitability and therefore inconsistent

with the two other items, profitability and sustainability. Thus, Profit3 should be revised to address supplier margins which is directly related to profitability as opposed to supplier pricing which may or may not impact on profitability. Notwithstanding, Profit3 did provide a useful indicator of preferential pricing behaviour. Thus, Profit3 is more suited to preferential treatment, which was excluded from the scope of this study. To fully understand how supplier perceptions influence competitive advantage, future research in the field of buyer-supplier relationships within other industries should consider the full set of contemporary theoretical constructs as a single integrated conceptual model. This includes preferential treatment and its interrelationship with preferred customer status, supplier satisfaction, and customer attractiveness as well as the antecedents of supplier satisfaction.

From a South African perspective, BBBEE cannot be ignored and therefore must be integrated into future research. Items related to BBBEE status revealed strong internal consistency. However, Bee3, namely “We receive enough financial support from Kumba” should be restated to remove ambiguity. “We receive enough financial support because of our BBBEE status” is proposed as an alternative. From a conceptual perspective, “support of suppliers” and “BBBEE” should be combined because of the overlapping similarities that surfaced from the analysis. “Support for suppliers” is recommended as an alternative to “support of suppliers” to remove misunderstandings that may arise. In the South African context, future studies should allow researchers to distinguish suppliers in terms of: (1) BBBEE status, (2) commercial and operational maturity, (3) recipients/ non-recipients of support, (4) goods and/ or services and, (5) direct/ indirect/ capital procurement. This is particularly important for buying firms struggling to institute supplier development programmes that can yield supplier satisfaction and competitive advantage in a pragmatic way.

7.6. Conclusion

Supplier satisfaction is a complex subject. In South Africa, it is further complicated by BBBEE legislation. For a large buying firm, the implications of a preferred customer strategy for the purpose of competitive advantage is threefold. Firstly, acknowledgement that large buying firms, such as Kumba, need to compete for preferred customer status and thereby achieve preferential treatment with its

associated benefits. Secondly, a well-defined supplier development programme that recognises the need for both broad and focused BBBEE suppliers support interventions. Finally, large buying firms with market power, should refrain from misusing a position of advantage by encouraging their procurement practitioners, as representatives of their organisation, to act with integrity and responsibility at all times.

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APPENDICES

Appendix A: Supplier satisfaction survey questionnaire

In Table 35 below, an adapted questionnaire based on the research conducted by Hüttinger et al., (2014), is presented. The questionnaire incorporates statements related to two (2) central constructs, supplier satisfaction and preferred customer status as well as ten (10) antecedents of supplier satisfaction.

Table 52 - Kumba: Supplier satisfaction survey questionnaire

Coding	Demographics	Reference
CV1	What is your position within your company?	(Kleyn, Abratt, Chipp, & Goldman, 2012)
CV2	How many years of logistics and/or supply chain management experience do you have?	Authors own
CV3	Is your company a micro, small, medium or large enterprise?	(Revised Schedule 1 of the National Definition of Small Enterprise in South Africa, 2019)
CV4	Does your company have an official BBBEE rating? i.e. Is your firm black empowered?	Authors own
CV5	Is your company currently actively trading with Kumba?	Authors own
CV6	How long has your company had a commercial relationship with Kumba?	(Nagati & Rebolledo, 2013); (Kleyn, Abratt, Chipp, & Goldman, 2012)
Construct 1	**Supplier satisfaction**	
SuppSat1	Our firm is very satisfied with the overall relationship with Kumba	(Hüttinger, Schiele, & Schröer, 2014)
SuppSat2	Generally, our firm is very pleased to have Kumba as our business partner	(Hüttinger, Schiele, & Schröer, 2014)
SuppSat3	If we had to do it all over again, we would still choose to use Kumba	(Hüttinger, Schiele, & Schröer, 2014)
SuppSat4	Our firm does not regret the decision to do business with Kumba	(Hüttinger, Schiele, & Schröer, 2014)
Construct 2	**Preferred customer status**	
PrefCust1	Compared to other customers in our firm's customer base Kumba is our preferred customer	(Hüttinger, Schiele, & Schröer, 2014)
PrefCust2	Compared to other customers in our firm's customer base we care more for Kumba	(Hüttinger, Schiele, & Schröer, 2014)
PrefCust3	Compared to other customers in our firm's customer base Kumba receives preferential treatment	(Hüttinger, Schiele, & Schröer, 2014)
PrefCust4	Compared to other customers in our firm's customer base we go out on a limb for Kumba	(Hüttinger, Schiele, & Schröer, 2014)
PrefCust5	Compared to other customers in our firm's customer base our firm's employees prefer collaborating with Kumba	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 1	**Growth opportunity**	
GrowthOpp1	Kumba provides us with a dominant market position in our sales area	(Hüttinger, Schiele, & Schröer, 2014)
GrowthOpp2	Kumba is very important for us with respect to growth rates	(Hüttinger, Schiele, & Schröer, 2014)
GrowthOpp3	Kumba enables us to exploit new market opportunities	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 2	**Innovation potential**	
InnovPot1	In collaborating with Kumba, our firm developed a very high number of new products	(Hüttinger, Schiele, & Schröer, 2014)
InnovPot2	In collaborating with Kumba, our firm was able to bring to market a very high number of new products	(Hüttinger, Schiele, & Schröer, 2014)
InnovPot3	The speed with which new products are developed and brought to market with Kumba is very high	(Hüttinger, Schiele, & Schröer, 2014)

Coding	Demographics	Reference
Antecedent 3	**Operative excellence**	
OpExcel1	Kumba always has exact and in time forecasts about future demand	(Hüttinger, Schiele, & Schröer, 2014)
OpExcel2	Kumba provides us with forecasts our firm can rely and plan on	(Hüttinger, Schiele, & Schröer, 2014)
OpExcel3	Kumba has simple and transparent internal processes for our firm	(Hüttinger, Schiele, & Schröer, 2014)
OpExcel4	Kumba supports short decision-making processes	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 4	**Reliability**	
Rely1	In working with our company, Kumba provided a completely truthful picture when negotiating	(Hüttinger, Schiele, & Schröer, 2014)
Rely2	In working with our company, Kumba always negotiated from a good faith bargaining perspective	(Hüttinger, Schiele, & Schröer, 2014)
Rely3	In working with our company, Kumba never breached formal or informal agreements to benefit themselves	(Hüttinger, Schiele, & Schröer, 2014)
Rely4	In working with our company, Kumba never altered facts in order to meet its own goals and objectives	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 5	**Support of suppliers**	
Support1	Kumba collaborates with us to improve our manufacturing processes	(Hüttinger, Schiele, & Schröer, 2014)
Support2	Kumba gives us technological advice (e.g. on materials, software)	(Hüttinger, Schiele, & Schröer, 2014)
Support3	Kumba gives us quality related advice (e.g. on safety, inspection of equipment, quality assurance procedures)	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 6	**Supplier involvement**	
SuppInv1	Kumba involves us to participate in its product design and development	(Hüttinger, Schiele, & Schröer, 2014)
SuppInv2	We are involved early in the new product development process of Kumba	(Hüttinger, Schiele, & Schröer, 2014)
SuppInv3	We are very active in the new product development process of Kumba	(Hüttinger, Schiele, & Schröer, 2014)
SuppInv4	Communication between Kumba and firm is close and effective	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 7	**Contact accessibility**	
ContAcc1	There is a contact person within Kumba who coordinates the relevant relationship activities	(Hüttinger, Schiele, & Schröer, 2014)
ContAcc2	There is a contact person within Kumba who is the one to contact in regard to partner-specific questions	(Hüttinger, Schiele, & Schröer, 2014)
ContAcc3	There is a contact person within Kumba who informs employees within Kumba about the needs of our company	(Hüttinger, Schiele, & Schröer, 2014)
Antecedent 8	**Relational behaviour**	
RelBe1	Problems that arise in the course of the relationship are treated by Kumba as joint rather than individual responsibilities	(Hüttinger, Schiele, & Schröer, 2014)
RelBe2	Kumba is committed to improvements that may benefit our relationship as a whole and not only themselves	(Hüttinger, Schiele, & Schröer, 2014)
RelBe3	Our relationship with Kumba is mutually beneficial	(Hüttinger, Schiele, & Schröer, 2014)
RelBe4	Our firm usually gets at least a fair share of the rewards and cost savings from our relationship with Kumba	(Hüttinger, Schiele, & Schröer, 2014)
RelBe5	Kumba would willingly help us out if special problems/needs arise	(Hüttinger, Schiele, & Schröer, 2014)
RelBe6	Kumba is flexible when dealing with us	
Antecedent 9	**Profitability**	
Profit1	Our relationship with Kumba is profitable	(Vos, Schiele, & Hüttinger, 2016)
Profit2	Our relationship with Kumba is sustainable	(Vos, Schiele, & Hüttinger, 2016)
Profit3	Compared to other customers we offer Kumba favourable pricing	Authors own
Antecedent 10	**Broad Based Black Economic Empowerment (BBBEE)**	
Bee1	Our relationship with Kumba has improved because of our BBBEE status	Authors own
Bee2	Kumba has helped to grow our turnover because of our BBBEE status	Authors own
Bee3	We receive enough financial support from Kumba	Authors own

Appendix B: Data and statistics

Appendix B1: Summary of responses for central constructs

Table 53. Summary of responses for supplier satisfaction

Supplier satisfaction	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
SuppSat1 Our firm is very satisfied with the overall relationship with Kumba	20	21	17	24	68	152	67	369
	5,4%	5,7%	4,6%	6,5%	18,4%	41,2%	18,2%	100,0%
SuppSat2 Generally, our firm is very pleased to have Kumba as our business partner	5	6	4	18	52	159	125	369
	1,4%	1,6%	1,1%	4,9%	14,1%	43,1%	33,9%	100,0%
SuppSat3 If we had to do it all over again, we would still choose to use Kumba	5	6	3	20	32	160	143	369
	1,4%	1,6%	0,8%	5,4%	8,7%	43,4%	38,8%	100,0%
SuppSat4 Our firm does not regret the decision to do business with Kumba	6	4	4	10	26	164	155	369
	1,6%	1,1%	1,1%	2,7%	7,0%	44,4%	42,0%	100,0%

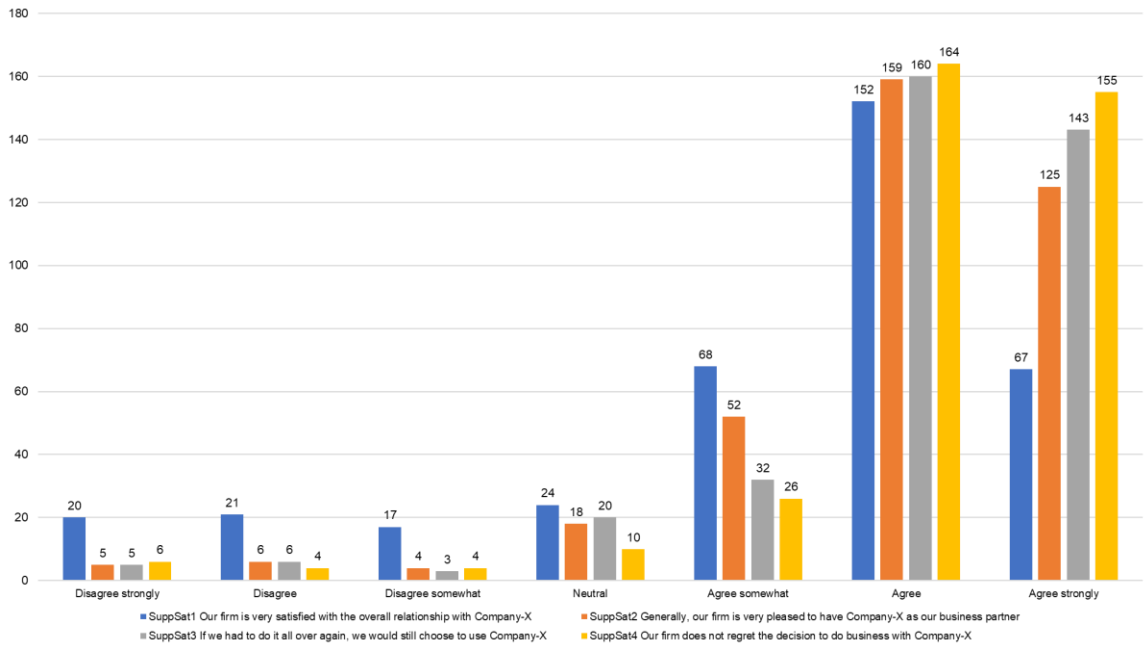

Figure 9. Supplier satisfaction

Table 54. Summary of responses for preferred customer status

Preferred customer status	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
PrefCust1 Compared to other customers in our firm's customer base Kumba is our preferred customer	11	13	12	41	60	119	113	369
	3,0%	3,5%	3,3%	11,1%	16,3%	32,2%	30,6%	100,0%
PrefCust2 Compared to other customers in our firm's customer base we care more for Kumba	12	18	20	61	51	104	103	369
	3,3%	4,9%	5,4%	16,5%	13,8%	28,2%	27,9%	100,0%
PrefCust3 Compared to other customers in our firm's customer base Kumba receives preferential treatment	10	31	15	55	55	103	100	369
	2,7%	8,4%	4,1%	14,9%	14,9%	27,9%	27,1%	100,0%
PrefCust4 Compared to other customers in our firm's customer base we go out on a limb for Kumba	7	21	11	40	43	136	111	369
	1,9%	5,7%	3,0%	10,8%	11,7%	36,9%	30,1%	100,0%
PrefCust5 Compared to other customers in our firm's customer base our firm's employees prefer collaborating with Kumba	6	26	12	65	48	129	83	369
	1,6%	7,0%	3,3%	17,6%	13,0%	35,0%	22,5%	100,0%

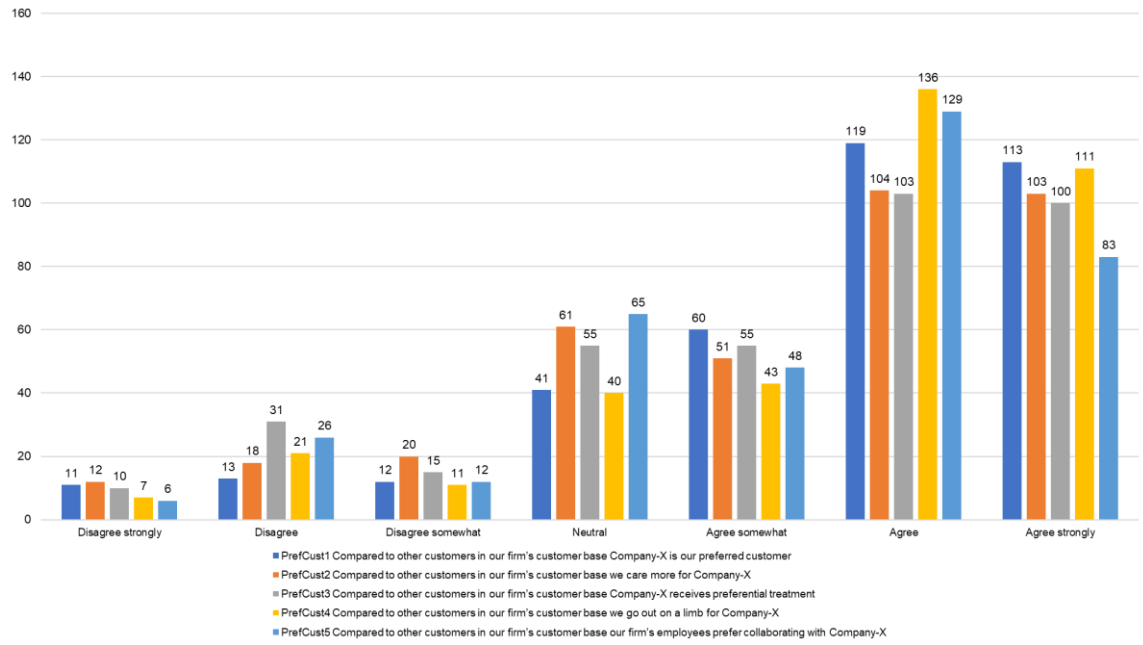

Figure 10. Preferred customer status

Appendix B2: Summary of responses for theoretical antecedents

Table 55 Summary of responses for growth opportunity

Growth opportunity	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
GrowthOpp1 Kumba provides us with a dominant market position in our sales area	25	49	20	83	61	104	27	369
	6,8%	13,3%	5,4%	22,5%	16,5%	28,2%	7,3%	100,0%
GrowthOpp2 Kumba is very important for us with respect to growth rates	9	15	7	43	42	155	98	369
	2,4%	4,1%	1,9%	11,7%	11,4%	42,0%	26,6%	100,0%
GrowthOpp3 Kumba enables us to exploit new market opportunities	25	46	19	85	57	111	26	369
	6,8%	12,5%	5,1%	23,0%	15,4%	30,1%	7,0%	100,0%

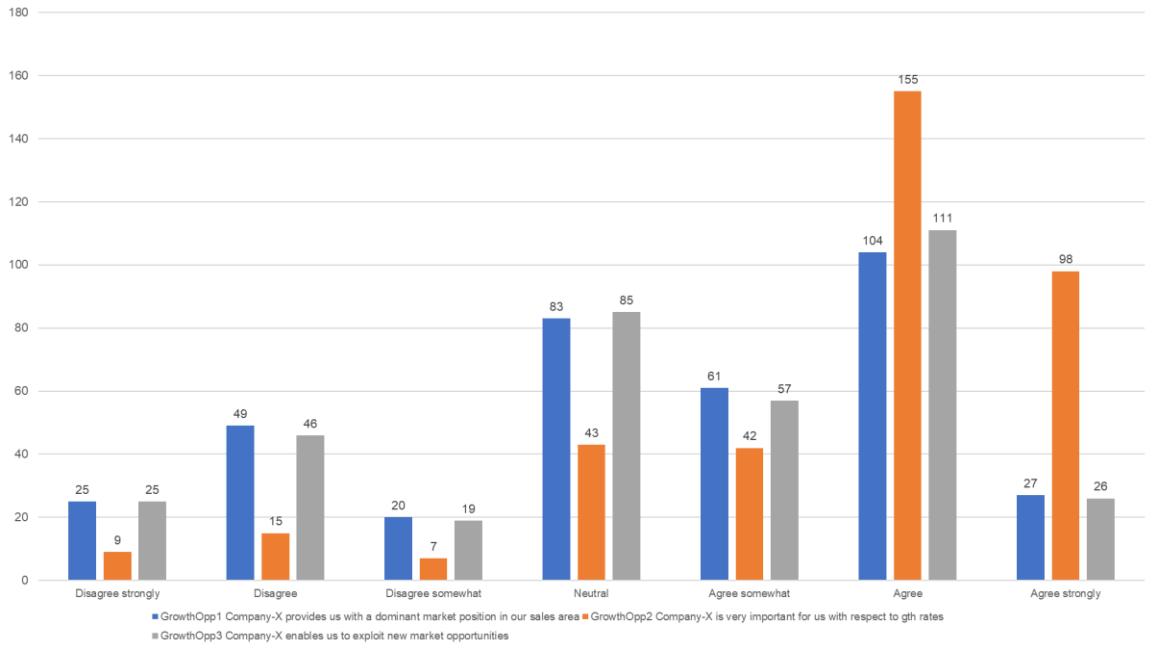

Figure 11. Growth opportunity

Table 56. Summary of responses for innovation potential

Innovation potential	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
InnovPot1 In collaborating with Kumba, our firm developed a very high number of new products	30	74	23	75	64	77	26	369
	8,1%	20,1%	6,2%	20,3%	17,3%	20,9%	7,0%	100,0%
InnovPot2 In collaborating with Kumba, our firm was able to bring to market a very high number of new products	28	58	14	102	71	78	18	369
	7,6%	15,7%	3,8%	27,6%	19,2%	21,1%	4,9%	100,0%
InnovPot3 The speed with which new products are developed and brought to market with Kumba is very high	26	45	20	134	59	70	15	369
	7,0%	12,2%	5,4%	36,3%	16,0%	19,0%	4,1%	100,0%

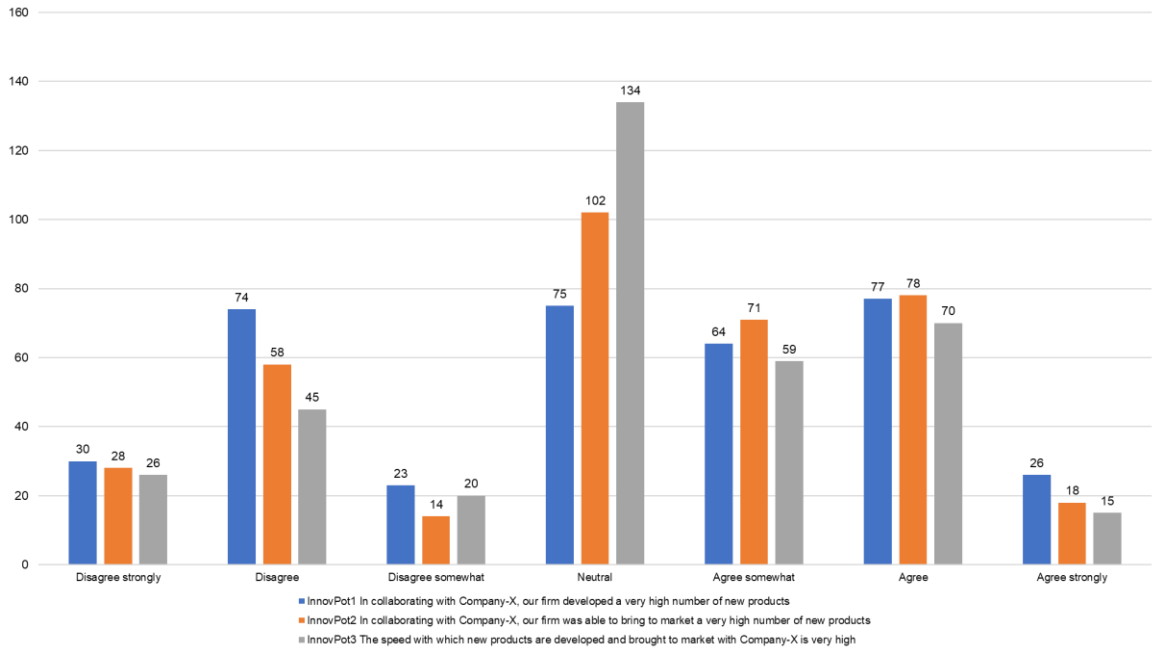

Figure 12. Innovation potential

Table 57. Summary of responses for operative excellence

Operative excellence	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
OpExcel1 Kumba always has exact and in time forecasts about future demand	23	30	28	90	69	98	31	369
	6,2%	8,1%	7,6%	24,4%	18,7%	26,6%	8,4%	100,0%
OpExcel2 Kumba provides us with forecasts our firm can rely and plan on	36	72	24	79	54	87	17	369
	9,8%	19,5%	6,5%	21,4%	14,6%	23,6%	4,6%	100,0%
OpExcel3 Kumba has simple and transparent internal processes for our firm	25	41	28	65	55	130	25	369
	6,8%	11,1%	7,6%	17,6%	14,9%	35,2%	6,8%	100,0%
OpExcel4 Kumba supports short decision-making processes	25	43	31	116	61	82	11	369
	6,8%	11,7%	8,4%	31,4%	16,5%	22,2%	3,0%	100,0%

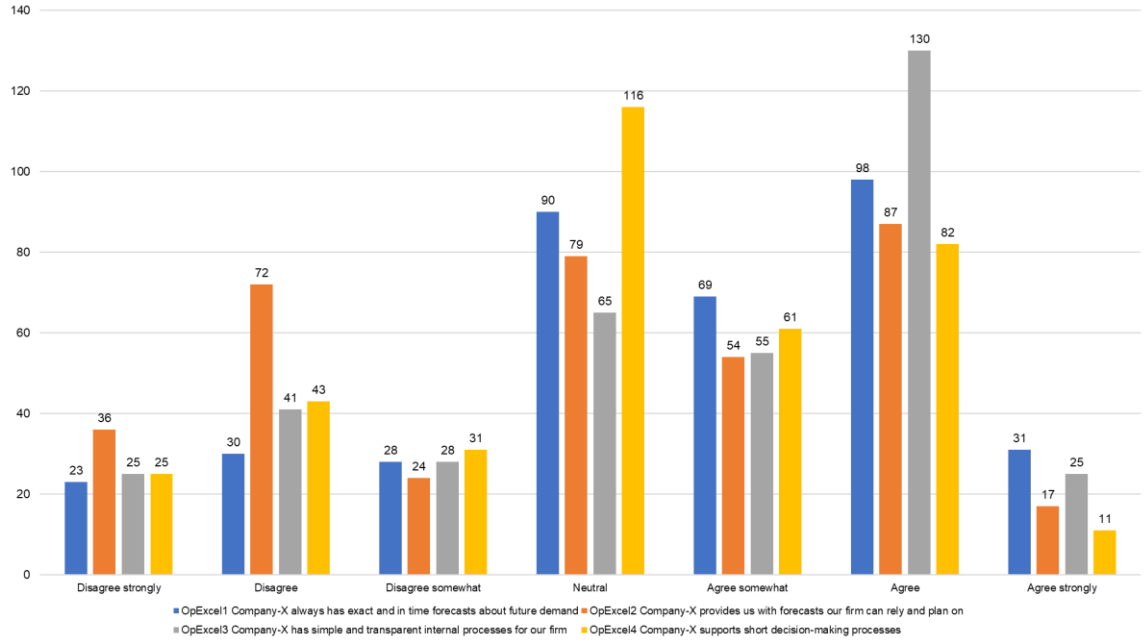

Figure 13. Operative excellence

Table 58. Summary of responses for reliability

Reliability	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
Rely1 In working with our company, Kumba provided a completely truthful picture when negotiating	20	23	13	52	55	163	43	369
	5,4%	6,2%	3,5%	14,1%	14,9%	44,2%	11,7%	100,0%
Rely2 In working with our company, Kumba always negotiated from a good faith bargaining perspective	12	17	16	70	75	145	34	369
	3,3%	4,6%	4,3%	19,0%	20,3%	39,3%	9,2%	100,0%
Rely3 In working with our company, Kumba never breached formal or informal agreements to benefit themselves	13	19	7	40	28	169	93	369
	3,5%	5,1%	1,9%	10,8%	7,6%	45,8%	25,2%	100,0%
Rely4 In working with our company, Kumba never altered facts in order to meet its own goals and objectives	10	27	14	62	31	168	57	369
	2,7%	7,3%	3,8%	16,8%	8,4%	45,5%	15,4%	100,0%

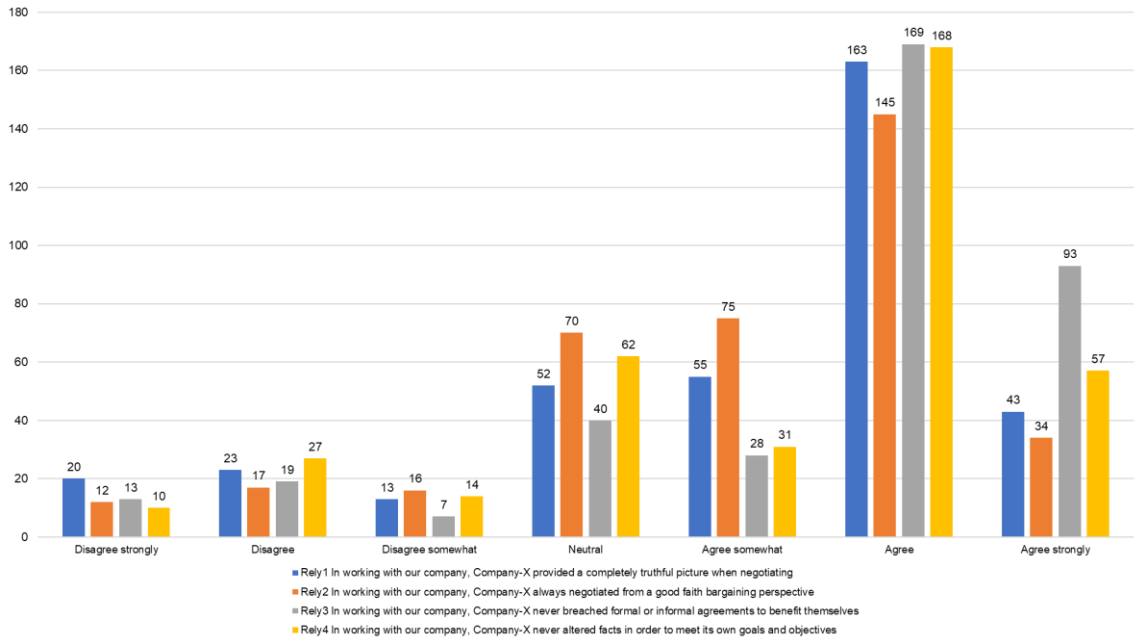

Figure 14. Reliability

Table 59. Summary of responses for support of suppliers

Support of suppliers	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
Support1 Kumba collaborates with us to improve our manufacturing processes	27	67	18	120	43	76	18	369
	7,3%	18,2%	4,9%	32,5%	11,7%	20,6%	4,9%	100,0%
Support2 Kumba gives us technological advice (e.g. on materials, software)	34	76	22	96	42	76	23	369
	9,2%	20,6%	6,0%	26,0%	11,4%	20,6%	6,2%	100,0%
Support3 Kumba gives us quality related advice (e.g. on safety, inspection of equipment, quality assurance procedures)	18	18	11	60	57	135	70	369
	4,9%	4,9%	3,0%	16,3%	15,4%	36,6%	19,0%	100,0%

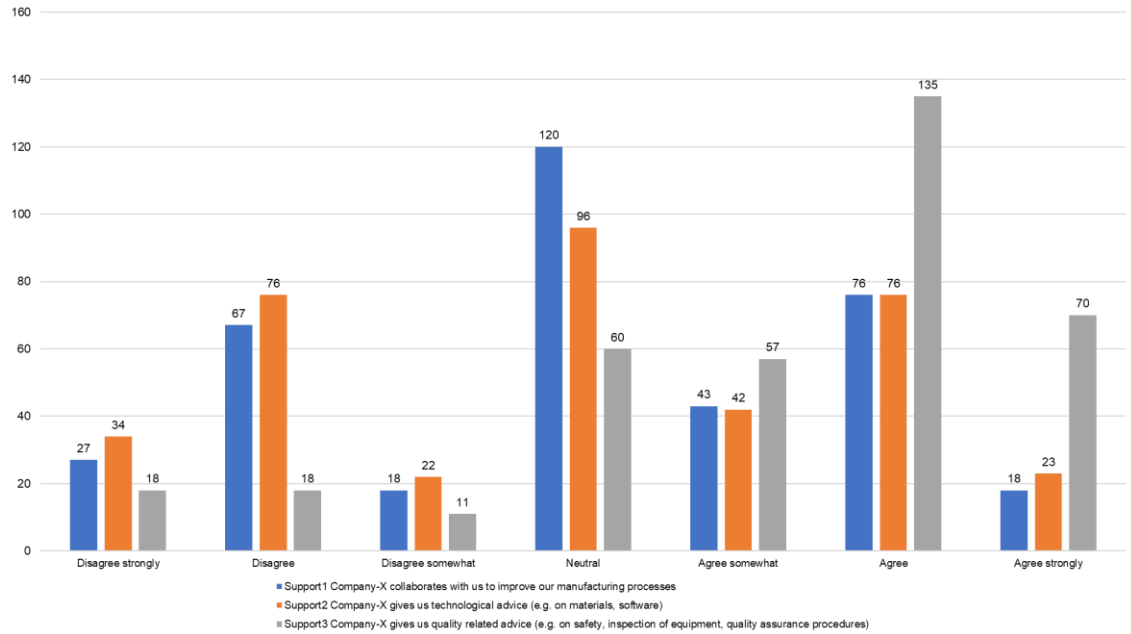

Figure 15. Support of suppliers

Table 60. Summary of responses for supplier involvement

Supplier involvement	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
SuppInv1 Kumba involves us to participate in its product design and development	33	92	19	78	43	83	21	369
	8,9%	24,9%	5,1%	21,1%	11,7%	22,5%	5,7%	100,0%
SuppInv2 We are involved early in the new product development process of Kumba	29	65	22	117	40	81	15	369
	7,9%	17,6%	6,0%	31,7%	10,8%	22,0%	4,1%	100,0%
SuppInv3 We are very active in the new product development process of Kumba	32	66	18	98	63	68	24	369
	8,7%	17,9%	4,9%	26,6%	17,1%	18,4%	6,5%	100,0%
SuppInv4 Communication between Kumba and firm is close and effective	23	30	23	32	65	151	45	369
	6,2%	8,1%	6,2%	8,7%	17,6%	40,9%	12,2%	100,0%

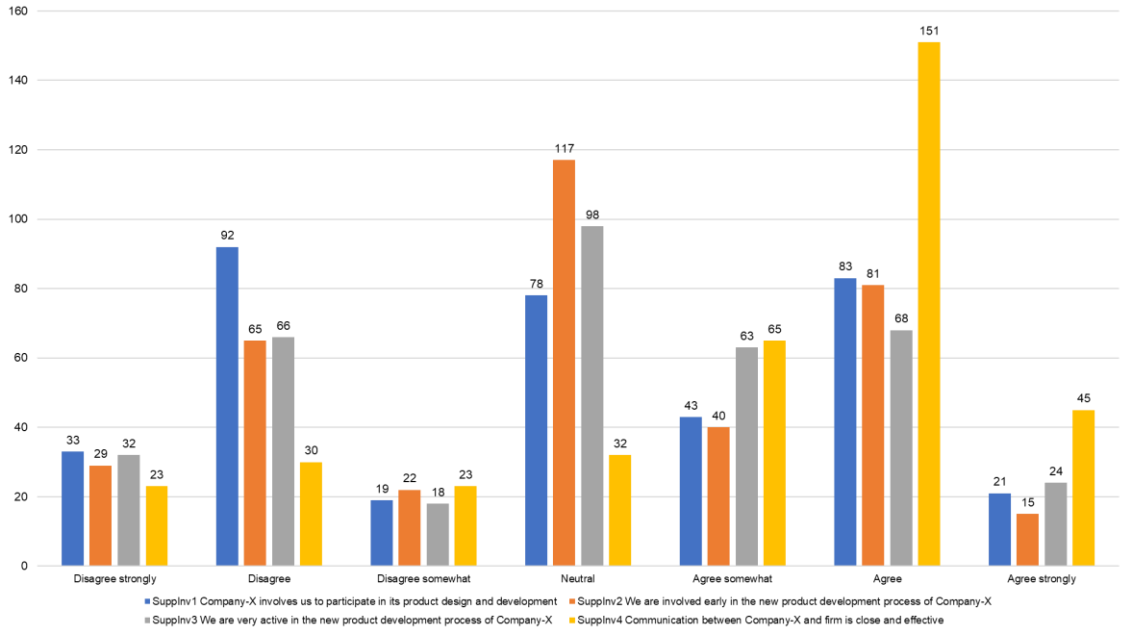

Figure 16. Supplier involvement

Table 61. Summary of responses for contact accessibility

Contact accessibility	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
ContAcc1 There is a contact person within Kumba who coordinates the relevant relationship activities	18	34	20	52	47	162	36	369
	4,9%	9,2%	5,4%	14,1%	12,7%	43,9%	9,8%	100,0%
ContAcc2 There is a contact person within Kumba who is the one to contact in regard to partner-specific questions	15	28	16	69	44	157	40	369
	4,1%	7,6%	4,3%	18,7%	11,9%	42,5%	10,8%	100,0%
ContAcc3 There is a contact person within Kumba who informs employees within Kumba about the needs of our company	26	62	21	95	48	96	21	369
	7,0%	16,8%	5,7%	25,7%	13,0%	26,0%	5,7%	100,0%

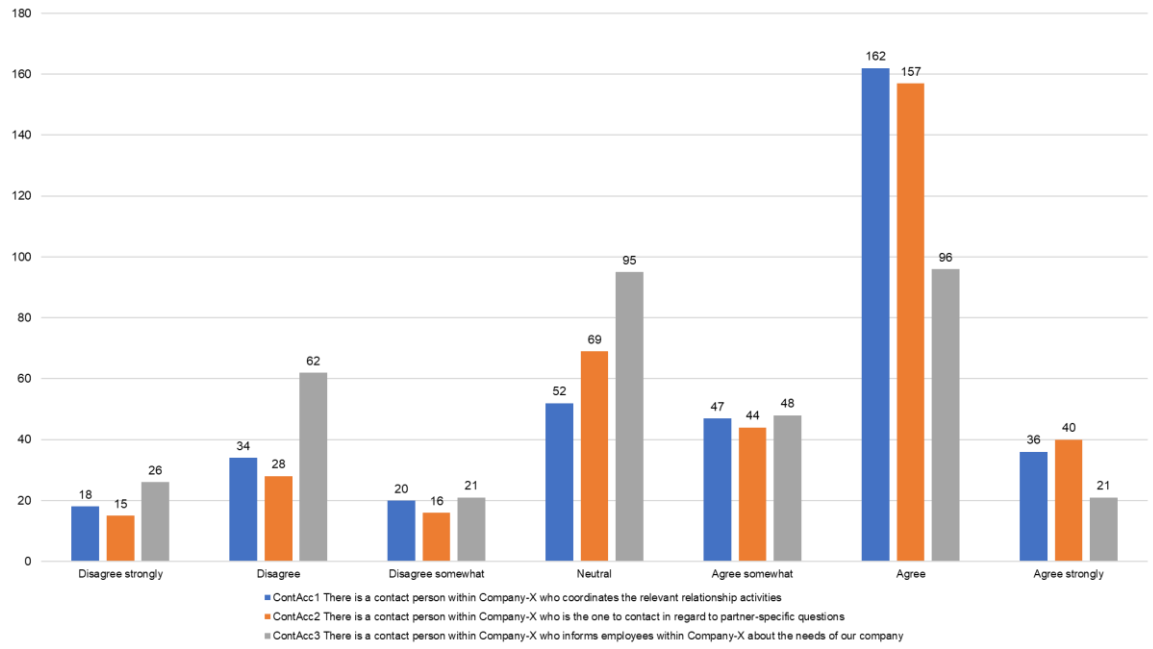

Figure 17. Contact accessibility

Table 62. Summary of responses for relational behaviour

Relational behaviour	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
RelBe1 Problems that arise in the course of the relationship are treated by Kumba as joint rather than individual responsibilities	21	28	11	85	49	141	34	369
	5,7%	7,6%	3,0%	23,0%	13,3%	38,2%	9,2%	100,0%
RelBe2 Kumba is committed to improvements that may benefit our relationship as a whole and not only themselves	17	21	15	74	61	136	45	369
	4,6%	5,7%	4,1%	20,1%	16,5%	36,9%	12,2%	100,0%
RelBe3 Our relationship with Kumba is mutually beneficial	12	23	10	37	51	177	59	369
	3,3%	6,2%	2,7%	10,0%	13,8%	48,0%	16,0%	100,0%
RelBe4 Our firm usually gets at least a fair share of the rewards and cost savings from our relationship with Kumba	30	59	25	111	48	80	16	369
	8,1%	16,0%	6,8%	30,1%	13,0%	21,7%	4,3%	100,0%
RelBe5 Kumba would willingly help us out if special problems/needs arise	24	40	29	85	53	108	30	369
	6,5%	10,8%	7,9%	23,0%	14,4%	29,3%	8,1%	100,0%
RelBe6 Kumba is flexible when dealing with us	21	34	29	56	83	111	35	369
	5,7%	9,2%	7,9%	15,2%	22,5%	30,1%	9,5%	100,0%

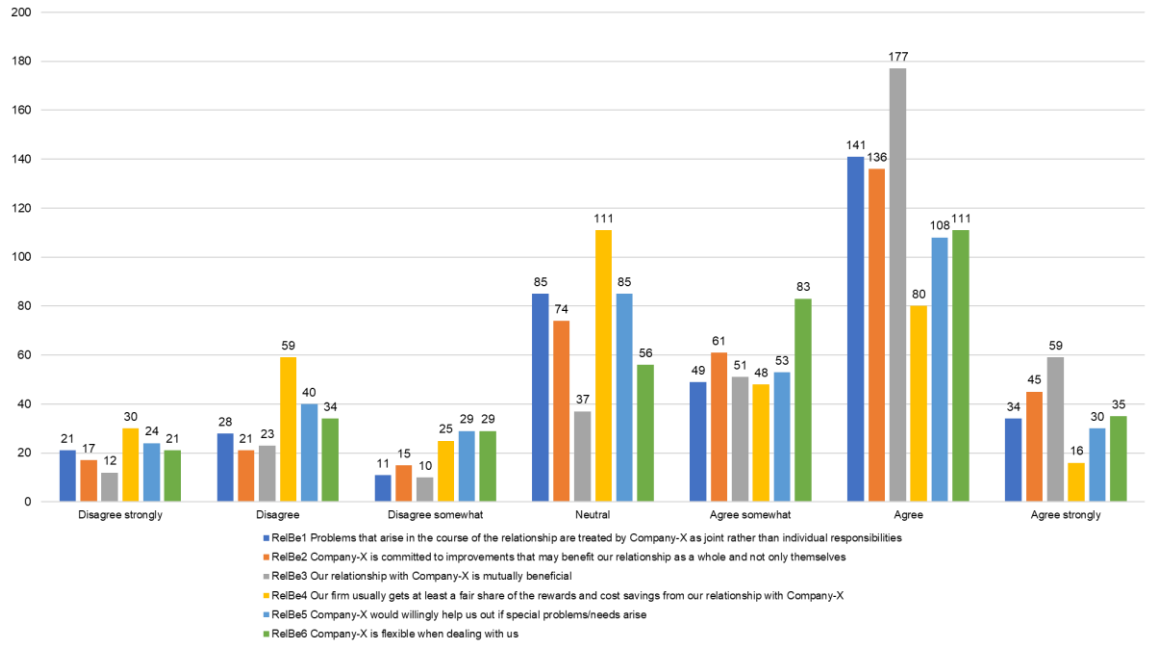

Figure 18. Relational behaviour

Table 63. Summary of responses for profitability

Profitability	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
Profit1 Our relationship with Kumba is profitable	15	17	17	31	75	171	43	369
	4,1%	4,6%	4,6%	8,4%	20,3%	46,3%	11,7%	100,0%
Profit2 Our relationship with Kumba is sustainable	15	18	12	46	58	160	60	369
	4,1%	4,9%	3,3%	12,5%	15,7%	43,4%	16,3%	100,0%
Profit3 Compared to other customers we offer Kumba favourable pricing	5	14	3	25	40	174	108	369
	1,4%	3,8%	0,8%	6,8%	10,8%	47,2%	29,3%	100,0%

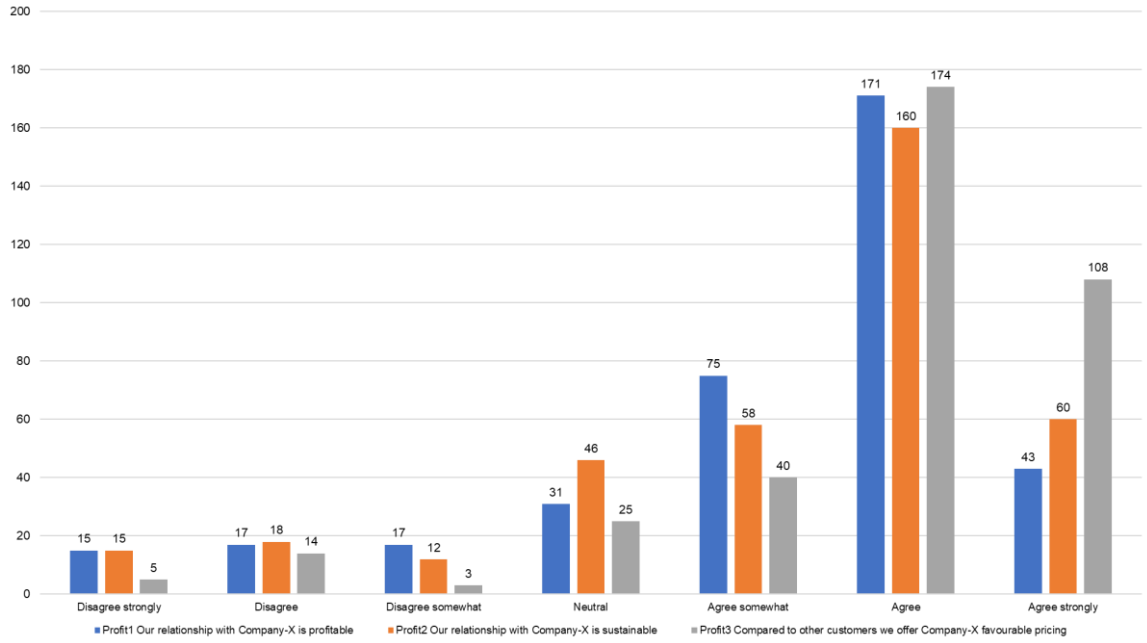

Figure 19. Profitability

Table 64. Summary of responses for BBBEE

BBBEE	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly	Total
BEE1 Our relationship with Kumba has improved because of our BBBEE status	27	35	18	63	53	73	43	312
	8,7%	11,2%	5,8%	20,2%	17,0%	23,4%	13,8%	100,0%
BEE2 Kumba has helped to g our turnover because of our BBBEE status	33	49	19	63	47	69	32	312
	10,6%	15,7%	6,1%	20,2%	15,1%	22,1%	10,3%	100,0%
BEE3 We receive enough financial support from Kumba	59	59	30	57	33	54	20	312
	18,9%	18,9%	9,6%	18,3%	10,6%	17,3%	6,4%	100,0%

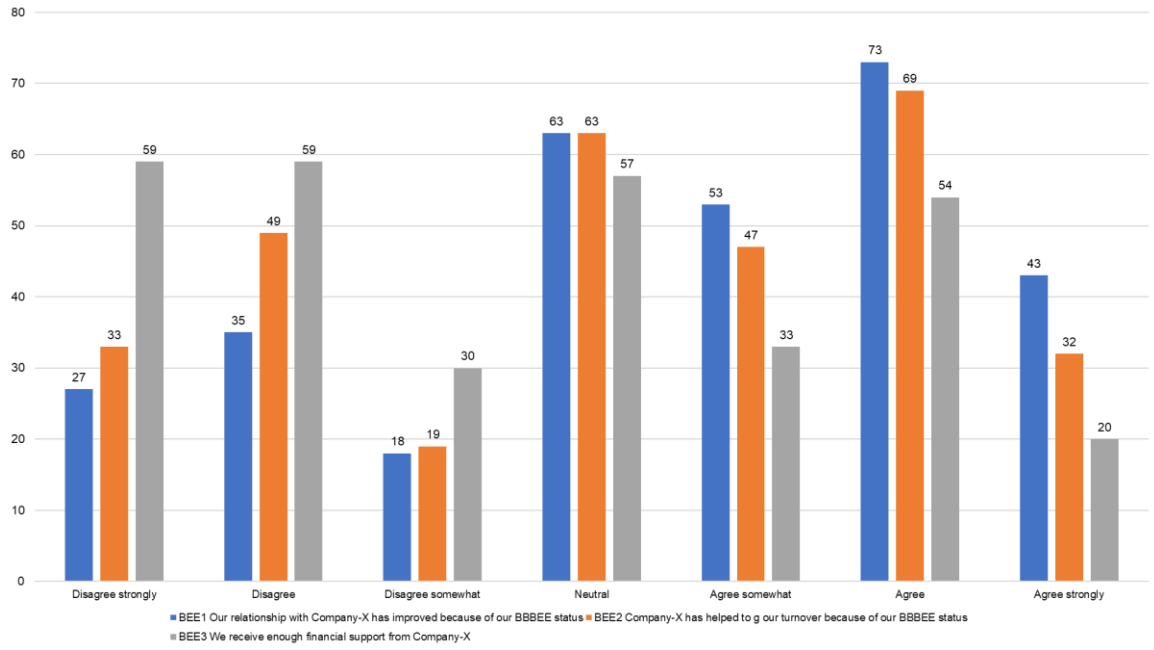

Figure 20. Broad Based Black Economic Empowerment

Appendix B3: Correlation matrices

Table 65. Correlation matrix for supplier satisfaction

	SuppSat1	SuppSat2	SuppSat3	SuppSat4
SuppSat1	1,000	0,666	0,633	0,600
SuppSat2	0,666	1,000	0,798	0,714
SuppSat3	0,633	0,798	1,000	0,829
SuppSat4	0,600	0,714	0,829	1,000

Table 66. Correlation matrix for preferred customer status

	PrefCust1	PrefCust2	PrefCust3	PrefCust4	PrefCust5
PrefCust1	1,000	0,769	0,603	0,549	0,758
PrefCust2	0,769	1,000	0,770	0,697	0,795
PrefCust3	0,603	0,770	1,000	0,766	0,768
PrefCust4	0,549	0,697	0,766	1,000	0,726
PrefCust5	0,758	0,795	0,768	0,726	1,000

Table 67. Correlation matrix for the antecedents of supplier satisfaction

	GrowthOpp1	GrowthOpp2	GrowthOpp3	InnovPot1	InnovPot2	InnovPot3	OpExcel1	OpExcel2	OpExcel3	OpExcel4
GrowthOpp1	1,000	0,446	0,576	0,571	0,658	0,575	0,532	0,548	0,454	0,432
GrowthOpp2	0,446	1,000	0,405	0,433	0,445	0,369	0,442	0,370	0,421	0,331
GrowthOpp3	0,576	0,405	1,000	0,597	0,552	0,584	0,504	0,563	0,514	0,480
InnovPot1	0,571	0,433	0,597	1,000	0,698	0,627	0,505	0,489	0,456	0,459
InnovPot2	0,658	0,445	0,552	0,698	1,000	0,584	0,554	0,567	0,463	0,413
InnovPot3	0,575	0,369	0,584	0,627	0,584	1,000	0,569	0,532	0,485	0,590
OpExcel1	0,532	0,442	0,504	0,505	0,554	0,569	1,000	0,656	0,601	0,557
OpExcel2	0,548	0,370	0,563	0,489	0,567	0,532	0,656	1,000	0,588	0,476
OpExcel3	0,454	0,421	0,514	0,456	0,463	0,485	0,601	0,588	1,000	0,560
OpExcel4	0,432	0,331	0,480	0,459	0,413	0,590	0,557	0,476	0,560	1,000
Rely1	0,361	0,473	0,408	0,384	0,373	0,426	0,565	0,446	0,648	0,486
Rely2	0,425	0,520	0,434	0,421	0,513	0,428	0,533	0,457	0,615	0,432
Rely3	0,346	0,483	0,317	0,306	0,266	0,347	0,413	0,309	0,480	0,386
Rely4	0,205	0,289	0,264	0,231	0,155	0,274	0,382	0,248	0,426	0,350
Support1	0,576	0,413	0,539	0,527	0,617	0,514	0,524	0,647	0,473	0,414
Support2	0,608	0,328	0,568	0,533	0,603	0,583	0,515	0,682	0,455	0,436
Support3	0,513	0,501	0,464	0,421	0,550	0,453	0,586	0,534	0,404	0,355
SuppInv1	0,529	0,317	0,554	0,644	0,574	0,621	0,544	0,621	0,479	0,505
SuppInv2	0,490	0,322	0,527	0,576	0,508	0,604	0,560	0,572	0,440	0,511
SuppInv3	0,582	0,405	0,514	0,573	0,644	0,560	0,602	0,590	0,443	0,441
SuppInv4	0,491	0,477	0,537	0,434	0,474	0,480	0,632	0,599	0,690	0,526
ContAcc1	0,452	0,413	0,503	0,386	0,436	0,362	0,500	0,547	0,479	0,419
ContAcc2	0,395	0,309	0,499	0,343	0,400	0,329	0,431	0,430	0,410	0,343
ContAcc3	0,554	0,304	0,522	0,429	0,480	0,431	0,519	0,553	0,503	0,418
RelBe1	0,436	0,456	0,459	0,441	0,404	0,480	0,530	0,534	0,645	0,471
RelBe2	0,559	0,468	0,545	0,491	0,612	0,563	0,650	0,545	0,632	0,536
RelBe3	0,409	0,544	0,511	0,434	0,421	0,417	0,510	0,398	0,606	0,496
RelBe4	0,589	0,398	0,618	0,548	0,526	0,547	0,539	0,568	0,558	0,574
RelBe5	0,533	0,398	0,561	0,466	0,452	0,485	0,472	0,459	0,550	0,456
RelBe6	0,497	0,452	0,514	0,413	0,490	0,489	0,510	0,525	0,656	0,531
Profit1	0,502	0,542	0,405	0,415	0,493	0,470	0,497	0,399	0,537	0,395
Profit2	0,517	0,438	0,422	0,410	0,516	0,446	0,600	0,484	0,554	0,418
BEE1	0,486	0,312	0,459	0,383	0,477	0,453	0,444	0,432	0,386	0,308
BEE2	0,519	0,386	0,524	0,481	0,510	0,480	0,479	0,466	0,422	0,370
BEE3	0,522	0,310	0,534	0,495	0,467	0,432	0,424	0,440	0,449	0,344

	Rely1	Rely2	Rely3	Rely4	Support1	Support2	Support3	SuppInv1	SuppInv2	SuppInv3	SuppInv4
GrowthOpp1	0,361	0,425	0,346	0,205	0,576	0,608	0,513	0,529	0,490	0,582	0,491
GrowthOpp2	0,473	0,520	0,483	0,289	0,413	0,328	0,501	0,317	0,322	0,405	0,477
GrowthOpp3	0,408	0,434	0,317	0,264	0,539	0,568	0,464	0,554	0,527	0,514	0,537
InnovPot1	0,384	0,421	0,306	0,231	0,527	0,533	0,421	0,644	0,576	0,573	0,434
InnovPot2	0,373	0,513	0,266	0,155	0,617	0,603	0,550	0,574	0,508	0,644	0,474
InnovPot3	0,426	0,428	0,347	0,274	0,514	0,583	0,453	0,621	0,604	0,560	0,480
OpExcel1	0,565	0,533	0,413	0,382	0,524	0,515	0,586	0,544	0,560	0,602	0,632
OpExcel2	0,446	0,457	0,309	0,248	0,647	0,682	0,534	0,621	0,572	0,590	0,599
OpExcel3	0,648	0,615	0,480	0,426	0,473	0,455	0,404	0,479	0,440	0,443	0,690
OpExcel4	0,486	0,432	0,386	0,350	0,414	0,436	0,355	0,505	0,511	0,441	0,526
Rely1	1,000	0,681	0,569	0,513	0,422	0,338	0,399	0,344	0,408	0,348	0,672
Rely2	0,681	1,000	0,539	0,385	0,485	0,390	0,418	0,385	0,431	0,425	0,614
Rely3	0,569	0,539	1,000	0,538	0,309	0,225	0,316	0,248	0,267	0,243	0,462
Rely4	0,513	0,385	0,538	1,000	0,260	0,198	0,236	0,203	0,278	0,194	0,441
Support1	0,422	0,485	0,309	0,260	1,000	0,656	0,492	0,604	0,598	0,574	0,526
Support2	0,338	0,390	0,225	0,198	0,656	1,000	0,497	0,593	0,525	0,572	0,495
Support3	0,399	0,418	0,316	0,236	0,492	0,497	1,000	0,448	0,391	0,509	0,505
SuppInv1	0,344	0,385	0,248	0,203	0,604	0,593	0,448	1,000	0,699	0,643	0,426
SuppInv2	0,408	0,431	0,267	0,278	0,598	0,525	0,391	0,699	1,000	0,649	0,413
SuppInv3	0,348	0,425	0,243	0,194	0,574	0,572	0,509	0,643	0,649	1,000	0,437
SuppInv4	0,672	0,614	0,462	0,441	0,526	0,495	0,505	0,426	0,413	0,437	1,000
ContAcc1	0,438	0,458	0,314	0,295	0,479	0,403	0,402	0,400	0,453	0,434	0,623
ContAcc2	0,395	0,356	0,239	0,264	0,355	0,316	0,376	0,384	0,420	0,415	0,496
ContAcc3	0,372	0,479	0,336	0,268	0,607	0,462	0,417	0,524	0,556	0,510	0,478
RelBe1	0,609	0,598	0,456	0,417	0,508	0,426	0,414	0,444	0,458	0,416	0,638
RelBe2	0,627	0,672	0,441	0,374	0,531	0,512	0,545	0,478	0,494	0,552	0,685
RelBe3	0,662	0,626	0,551	0,470	0,407	0,333	0,368	0,347	0,439	0,389	0,643
RelBe4	0,542	0,518	0,397	0,336	0,607	0,538	0,455	0,539	0,554	0,529	0,589
RelBe5	0,469	0,484	0,399	0,379	0,466	0,465	0,434	0,484	0,483	0,422	0,550
RelBe6	0,589	0,659	0,411	0,335	0,589	0,495	0,483	0,467	0,476	0,415	0,648
Profit1	0,569	0,561	0,443	0,400	0,461	0,316	0,468	0,388	0,384	0,418	0,619
Profit2	0,570	0,611	0,383	0,399	0,489	0,407	0,491	0,403	0,472	0,525	0,621
BEE1	0,344	0,364	0,246	0,270	0,390	0,439	0,447	0,330	0,359	0,424	0,390
BEE2	0,370	0,404	0,276	0,218	0,430	0,464	0,467	0,387	0,346	0,439	0,449
BEE3	0,378	0,410	0,262	0,316	0,463	0,451	0,381	0,455	0,429	0,395	0,431

	ContAcc1	ContAcc2	ContAcc3	RelBe1	RelBe2	RelBe3	RelBe4	RelBe5	RelBe6
GrowthOpp1	0,452	0,395	0,554	0,436	0,559	0,409	0,589	0,533	0,497
GrowthOpp2	0,413	0,309	0,304	0,456	0,468	0,544	0,398	0,398	0,452
GrowthOpp3	0,503	0,499	0,522	0,459	0,545	0,511	0,618	0,561	0,514
InnovPot1	0,386	0,343	0,429	0,441	0,491	0,434	0,548	0,466	0,413
InnovPot2	0,436	0,400	0,480	0,404	0,612	0,421	0,526	0,452	0,490
InnovPot3	0,362	0,329	0,431	0,480	0,563	0,417	0,547	0,485	0,489
OpExcel1	0,500	0,431	0,519	0,530	0,650	0,510	0,539	0,472	0,510
OpExcel2	0,547	0,430	0,553	0,534	0,545	0,398	0,568	0,459	0,525
OpExcel3	0,479	0,410	0,503	0,645	0,632	0,606	0,558	0,550	0,656
OpExcel4	0,419	0,343	0,418	0,471	0,536	0,496	0,574	0,456	0,531
Rely1	0,438	0,395	0,372	0,609	0,627	0,662	0,542	0,469	0,589
Rely2	0,458	0,356	0,479	0,598	0,672	0,626	0,518	0,484	0,659
Rely3	0,314	0,239	0,336	0,456	0,441	0,551	0,397	0,399	0,411
Rely4	0,295	0,264	0,268	0,417	0,374	0,470	0,336	0,379	0,335
Support1	0,479	0,355	0,607	0,508	0,531	0,407	0,607	0,466	0,589
Support2	0,403	0,316	0,462	0,426	0,512	0,333	0,538	0,465	0,495
Support3	0,402	0,376	0,417	0,414	0,545	0,368	0,455	0,434	0,483
SuppInv1	0,400	0,384	0,524	0,444	0,478	0,347	0,539	0,484	0,467
SuppInv2	0,453	0,420	0,556	0,458	0,494	0,439	0,554	0,483	0,476
SuppInv3	0,434	0,415	0,510	0,416	0,552	0,389	0,529	0,422	0,415
SuppInv4	0,623	0,496	0,478	0,638	0,685	0,643	0,589	0,550	0,648
ContAcc1	1,000	0,708	0,580	0,560	0,495	0,474	0,430	0,496	0,468
ContAcc2	0,708	1,000	0,491	0,460	0,472	0,496	0,403	0,449	0,370
ContAcc3	0,580	0,491	1,000	0,471	0,522	0,446	0,568	0,493	0,544
RelBe1	0,560	0,460	0,471	1,000	0,563	0,568	0,531	0,496	0,620
RelBe2	0,495	0,472	0,522	0,563	1,000	0,686	0,610	0,566	0,671
RelBe3	0,474	0,496	0,446	0,568	0,686	1,000	0,534	0,520	0,585
RelBe4	0,430	0,403	0,568	0,531	0,610	0,534	1,000	0,589	0,590
RelBe5	0,496	0,449	0,493	0,496	0,566	0,520	0,589	1,000	0,545
RelBe6	0,468	0,370	0,544	0,620	0,671	0,585	0,590	0,545	1,000
Profit1	0,393	0,415	0,424	0,522	0,662	0,664	0,562	0,500	0,593
Profit2	0,469	0,478	0,450	0,492	0,759	0,604	0,512	0,501	0,551
BEE1	0,359	0,349	0,298	0,356	0,536	0,390	0,450	0,444	0,432
BEE2	0,416	0,364	0,370	0,390	0,570	0,430	0,531	0,465	0,437
BEE3	0,382	0,340	0,423	0,344	0,507	0,421	0,524	0,558	0,470

	Profit1	Profit2	BEE1	BEE2	BEE3
GrowthOpp1	0,502	0,517	0,486	0,519	0,522
GrowthOpp2	0,542	0,438	0,312	0,386	0,310
GrowthOpp3	0,405	0,422	0,459	0,524	0,534
InnovPot1	0,415	0,410	0,383	0,481	0,495
InnovPot2	0,493	0,516	0,477	0,510	0,467
InnovPot3	0,470	0,446	0,453	0,480	0,432
OpExcel1	0,497	0,600	0,444	0,479	0,424
OpExcel2	0,399	0,484	0,432	0,466	0,440
OpExcel3	0,537	0,554	0,386	0,422	0,449
OpExcel4	0,395	0,418	0,308	0,370	0,344
Rely1	0,569	0,570	0,344	0,370	0,378
Rely2	0,561	0,611	0,364	0,404	0,410
Rely3	0,443	0,383	0,246	0,276	0,262
Rely4	0,400	0,399	0,270	0,218	0,316
Support1	0,461	0,489	0,390	0,430	0,463
Support2	0,316	0,407	0,439	0,464	0,451
Support3	0,468	0,491	0,447	0,467	0,381
SuppInv1	0,388	0,403	0,330	0,387	0,455
SuppInv2	0,384	0,472	0,359	0,346	0,429
SuppInv3	0,418	0,525	0,424	0,439	0,395
SuppInv4	0,619	0,621	0,390	0,449	0,431
ContAcc1	0,393	0,469	0,359	0,416	0,382
ContAcc2	0,415	0,478	0,349	0,364	0,340
ContAcc3	0,424	0,450	0,298	0,370	0,423
RelBe1	0,522	0,492	0,356	0,390	0,344
RelBe2	0,662	0,759	0,536	0,570	0,507
RelBe3	0,664	0,604	0,390	0,430	0,421
RelBe4	0,562	0,512	0,450	0,531	0,524
RelBe5	0,500	0,501	0,444	0,465	0,558
RelBe6	0,593	0,551	0,432	0,437	0,470
Profit1	1,000	0,731	0,447	0,467	0,430
Profit2	0,731	1,000	0,470	0,475	0,463
BEE1	0,447	0,470	1,000	0,821	0,474
BEE2	0,467	0,475	0,821	1,000	0,517
BEE3	0,430	0,463	0,474	0,517	1,000

Appendix B4: Summary of anti-image correlation coefficients

Table 68. Summary of anti-image correlation MSA coefficients

Item code	MSA
SuppSat1	0.899a
SuppSat2	0.828a
SuppSat3	0.750a
SuppSat4	0.804a
PrefCust1	0.826a
PrefCust2	0.863a
PrefCust3	0.858a
PrefCust4	0.884a
PrefCust5	0.871a
GrowthOpp1	0.972a
GrowthOpp2	0.945a
GrowthOpp3	0.977a
InnovPot1	0.953a
InnovPot2	0.951a
InnovPot3	0.966a
OpExcel1	0.976a
OpExcel2	0.970a
OpExcel3	0.973a
OpExcel4	0.960a
Rely1	0.972a
Rely2	0.964a
Rely3	0.945a
Rely4	0.931a
Support1	0.968a
Support2	0.965a
Support3	0.968a
SuppInv1	0.964a
SuppInv2	0.954a
SuppInv3	0.976a
SuppInv4	0.969a
ContAcc1	0.926a
ContAcc2	0.932a
ContAcc3	0.954a
RelBe1	0.975a
RelBe2	0.972a
RelBe3	0.960a
RelBe4	0.969a
RelBe5	0.983a
RelBe6	0.967a
Profit1	0.939a
Profit2	0.949a
BEE1	0.898a
BEE2	0.915a
BEE3	0.972a
a. Measures of Sampling Adequacy (MSA)	

Appendix B5: Communalities tables

Table 69. Communalities

Supplier satisfaction	Initial	Extraction
SuppSat1	0,481	0,512
SuppSat2	0,684	0,754
SuppSat3	0,776	0,861
SuppSat4	0,700	0,731
Extraction Method: Principal Axis Factoring.		

Preferred customer status	Initial	Extraction
PrefCust1	0,660	0,601
PrefCust2	0,758	0,819
PrefCust3	0,719	0,736
PrefCust4	0,641	0,632
PrefCust5	0,759	0,831
Extraction Method: Principal Axis Factoring.		

Antecedents	Initial	*Extraction	Initial	**Extraction
GrowthOpp1	0,642	0,634	0,637	0,599
GrowthOpp2	0,540	0,511	0,533	0,422
GrowthOpp3	0,625	0,614	0,622	0,603
InnovPot1	0,668	0,628	0,668	0,578
InnovPot2	0,714	0,705	0,714	0,704
InnovPot3	0,642	0,619	0,642	0,617
OpExcel1	0,667	0,618	0,667	0,595
OpExcel2	0,690	0,699	0,689	0,622
OpExcel3	0,671	0,670	0,671	0,640
OpExcel4	0,556	0,507	0,556	0,506
Rely1	0,677	0,708	0,675	0,699
Rely2	0,673	0,637	0,673	0,637
Rely3	0,530	0,525	0,527	0,476
Rely4	0,452	0,397	0,451	0,395
Support1	0,666	0,610	0,664	0,603
Support2	0,653	0,619	0,651	0,598
Support3	0,532	0,493	0,532	0,482
SuppInv1	0,677	0,690	0,677	0,692
SuppInv2	0,675	0,605	0,673	0,606
SuppInv3	0,638	0,627	0,638	0,636
SuppInv4	0,733	0,720	0,733	0,694
ContAcc1	0,692	0,789	0,692	0,799
ContAcc2	0,606	0,630	0,604	0,596
ContAcc3	0,617	0,545	0,614	0,540
RelBe1	0,612	0,585	0,611	0,582
RelBe2	0,769	0,745	0,768	0,738
RelBe3	0,705	0,693	0,704	0,670
RelBe4	0,662	0,618	0,662	0,618
RelBe5	0,551	0,547	0,551	0,532
RelBe6	0,684	0,614	0,683	0,594
Profit1	0,716	0,651	0,716	0,650
Profit2	0,728	0,650	0,727	0,662
Profit3	0,148	0,100		N/A
BEE1	0,730	0,760	0,730	0,727
BEE2	0,751	0,794	0,751	0,806
BEE3	0,500	0,457	0,499	0,451
Extraction Method: Principal Axis Factoring.				
* Extraction including Profit3				
** Extraction excluding Profit3				

Appendix B6: Scatterplots

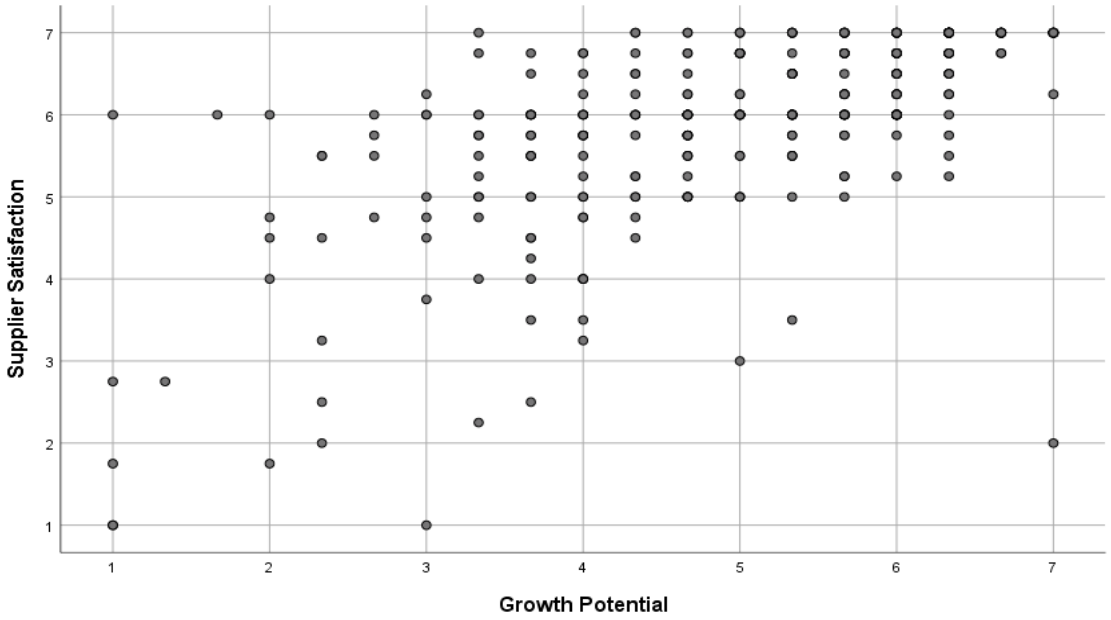

Figure 21. Supplier satisfaction vs. Growth opportunity/ potential

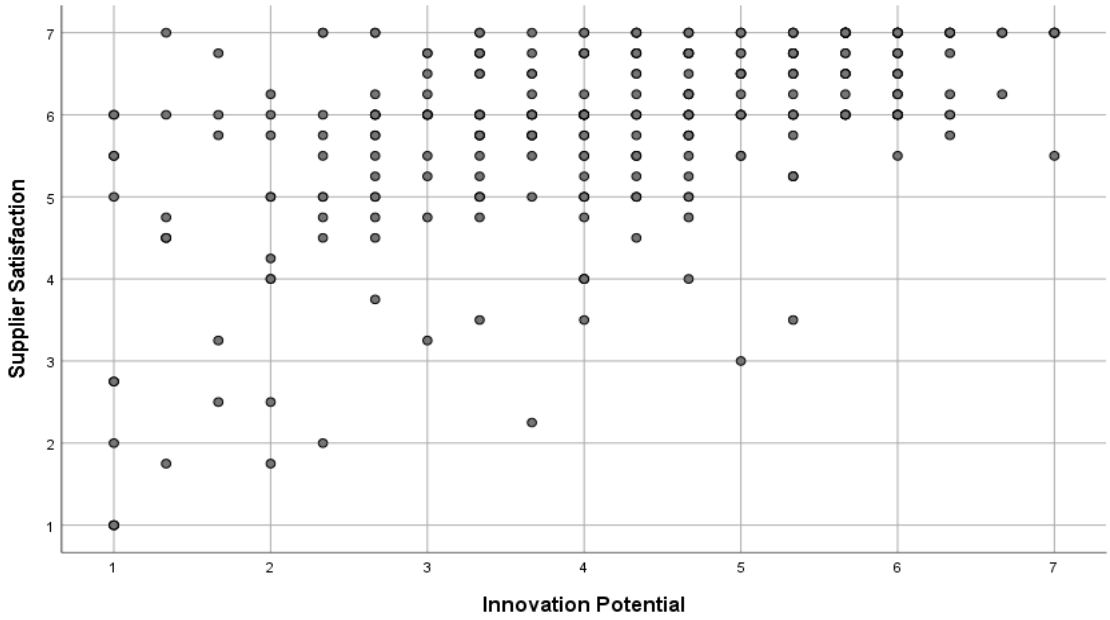

Figure 22. Supplier satisfaction vs. Innovation potential

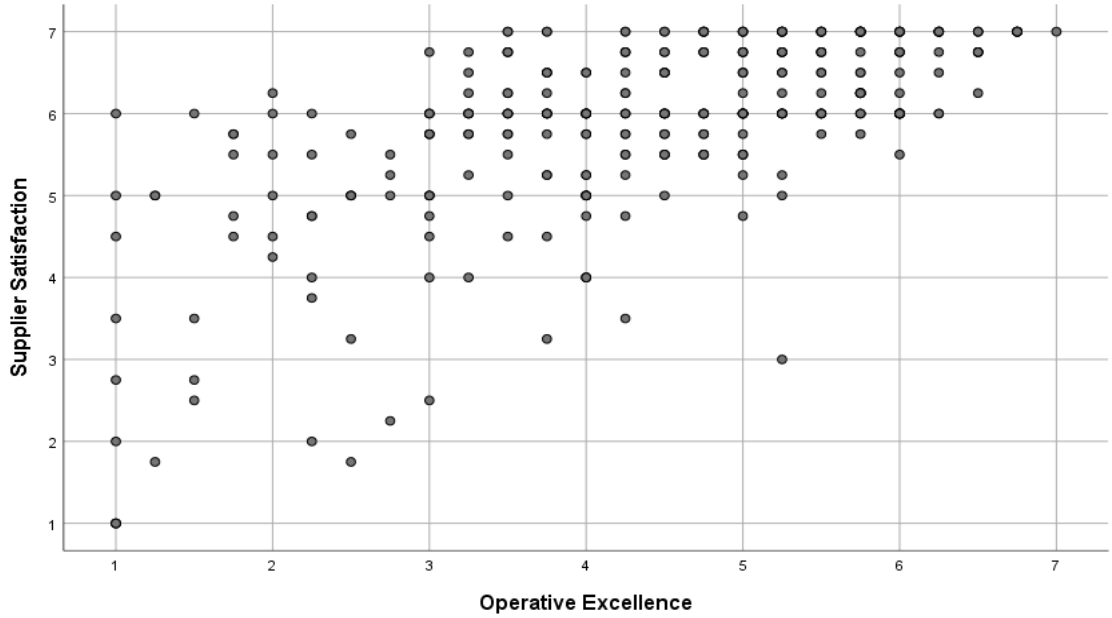

Figure 23. Supplier satisfaction vs. Operative excellence

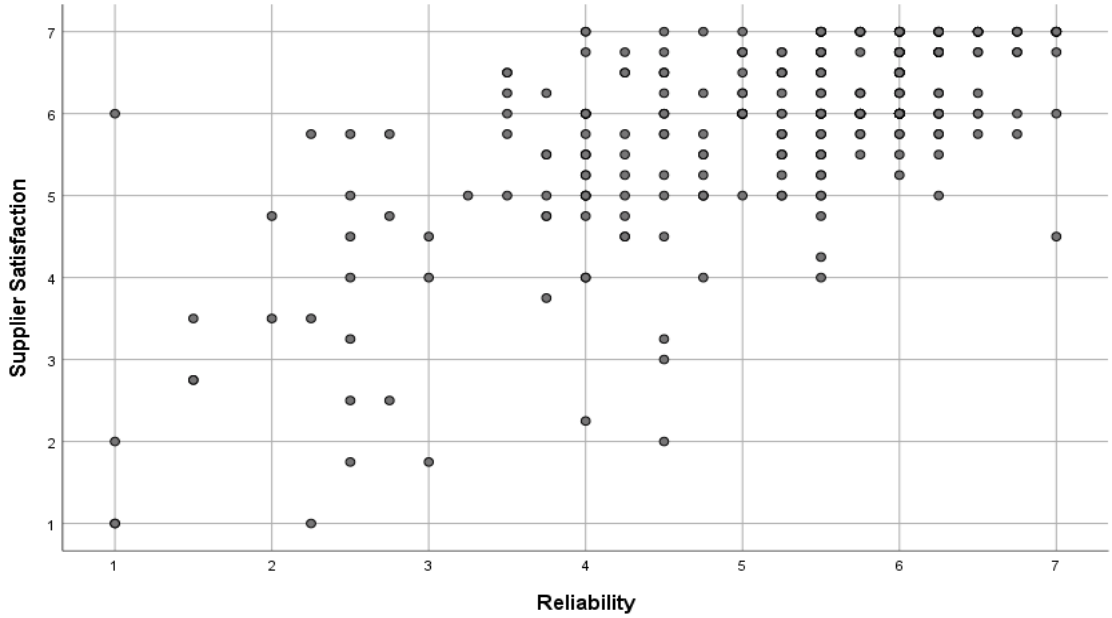

Figure 24. Supplier satisfaction vs. Reliability

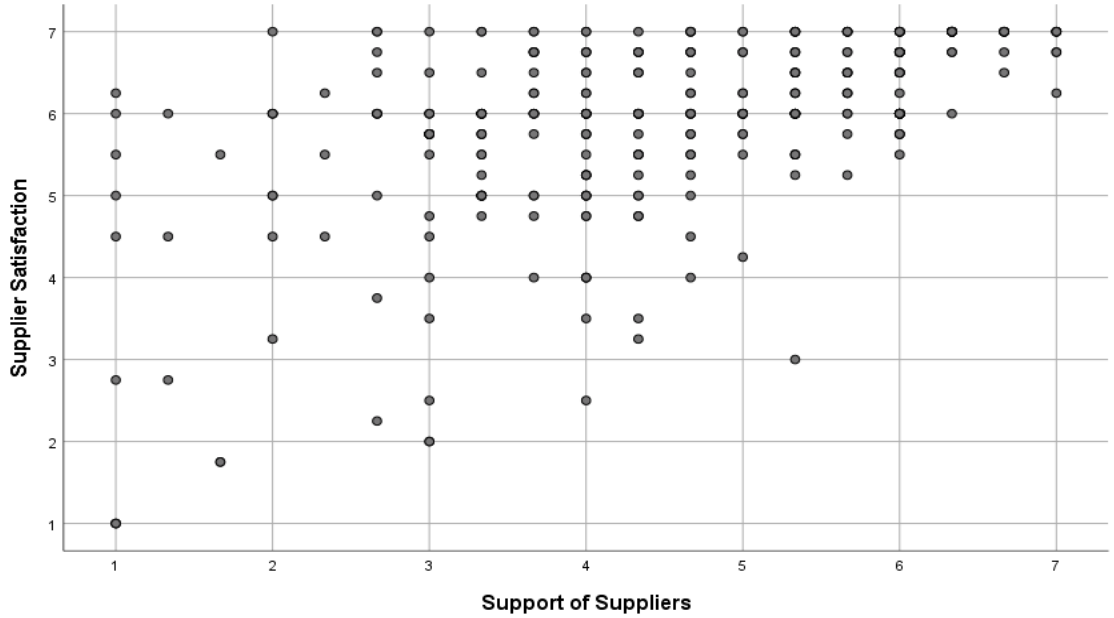

Figure 25. Supplier satisfaction vs. Support of suppliers

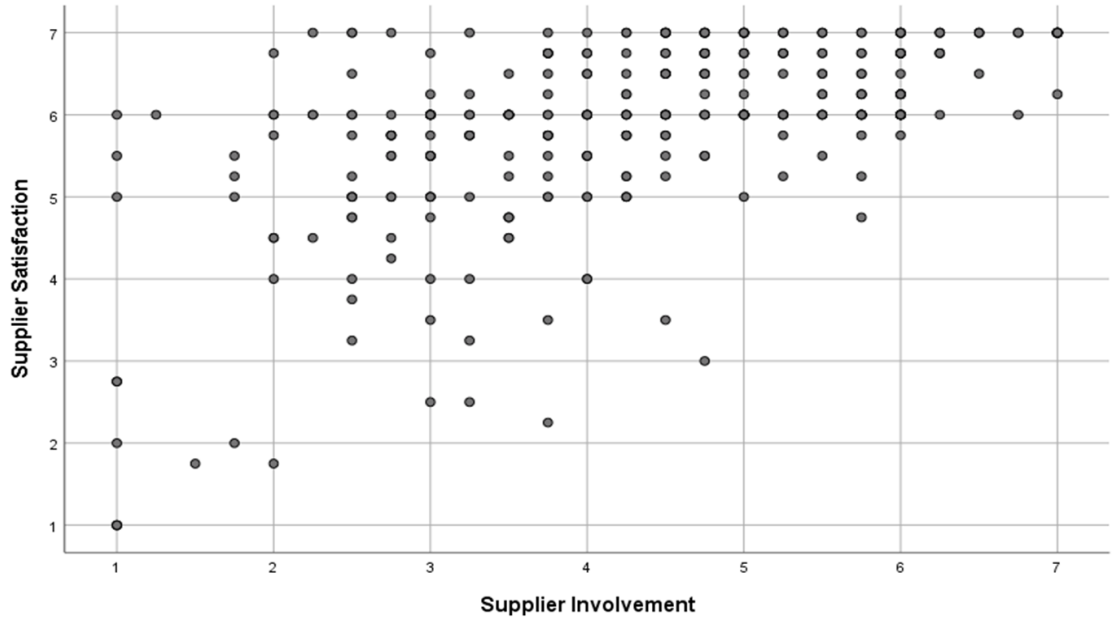

Figure 26. Supplier satisfaction vs. Supplier involvement

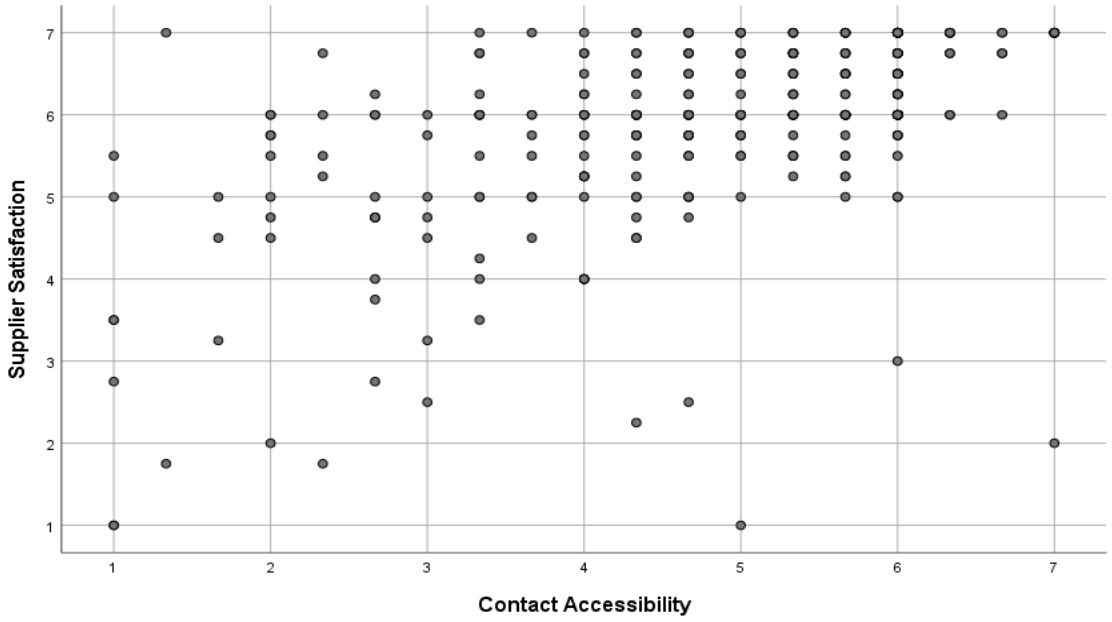

Figure 27. Supplier satisfaction vs. Contact accessibility

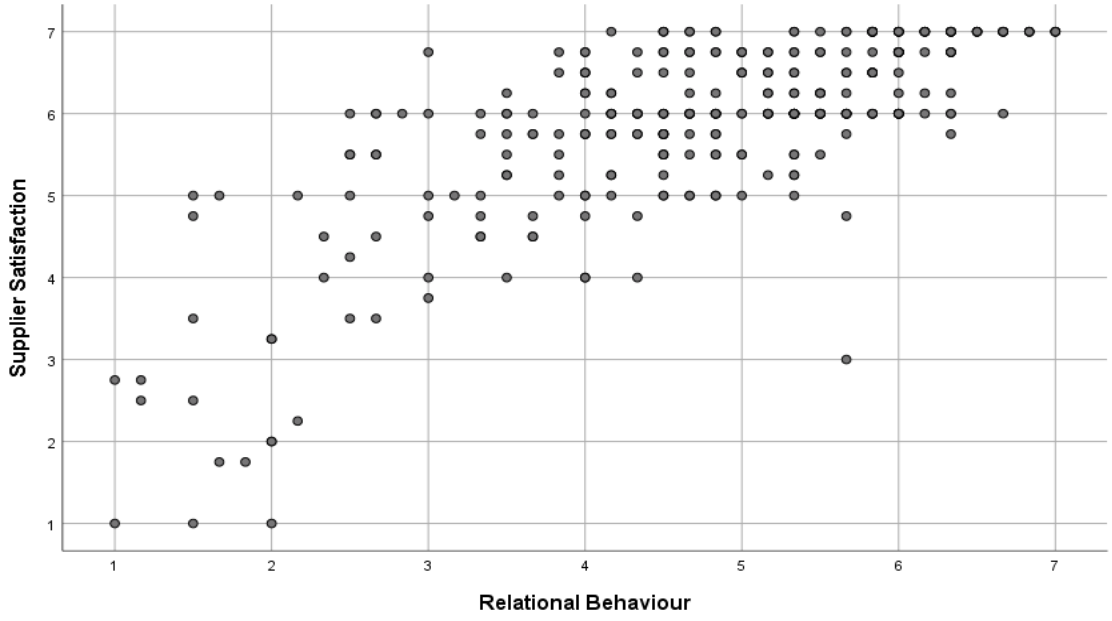

Figure 28. Supplier satisfaction vs. Relational behaviour

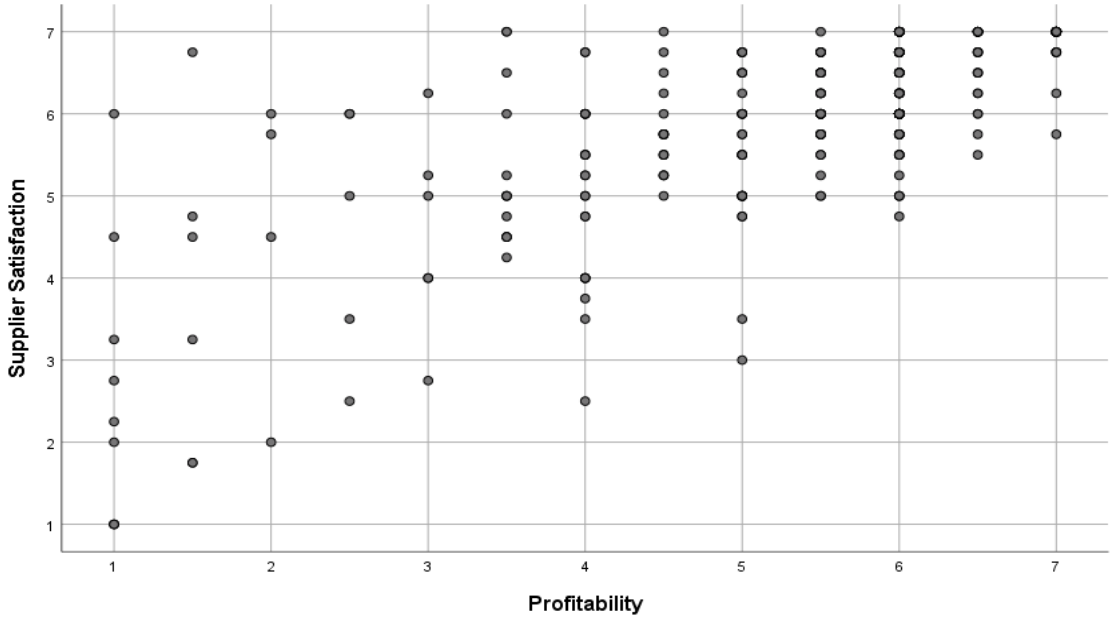

Figure 29. Supplier satisfaction vs. Profitability

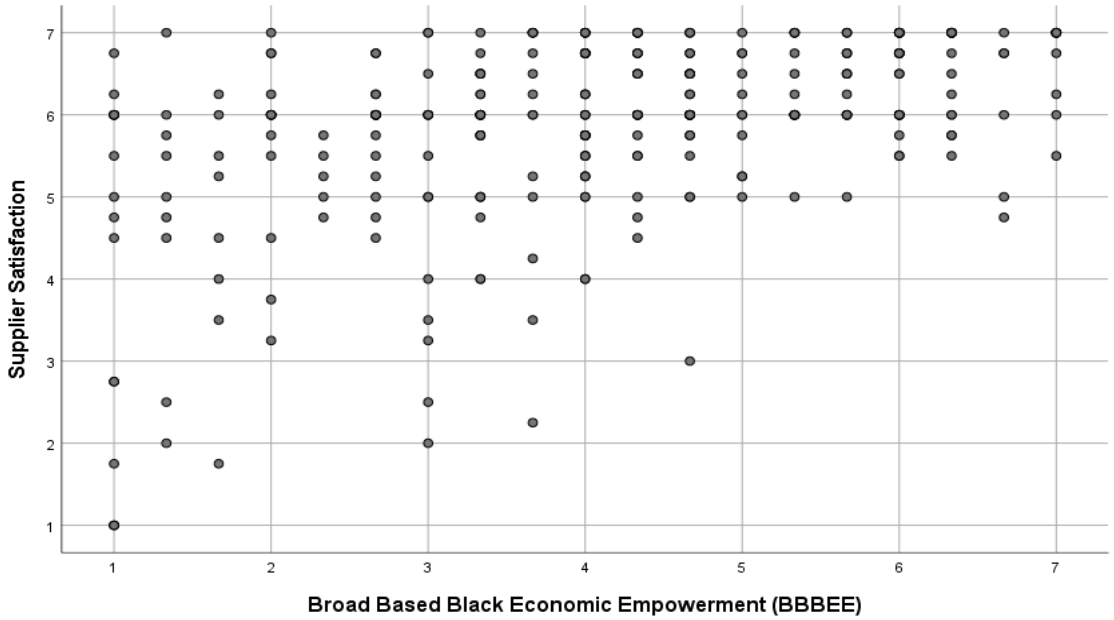

Figure 30. Supplier satisfaction vs. Broad Based Black Economic Empowerment

Appendix B7: Preferred customer status and supplier satisfaction

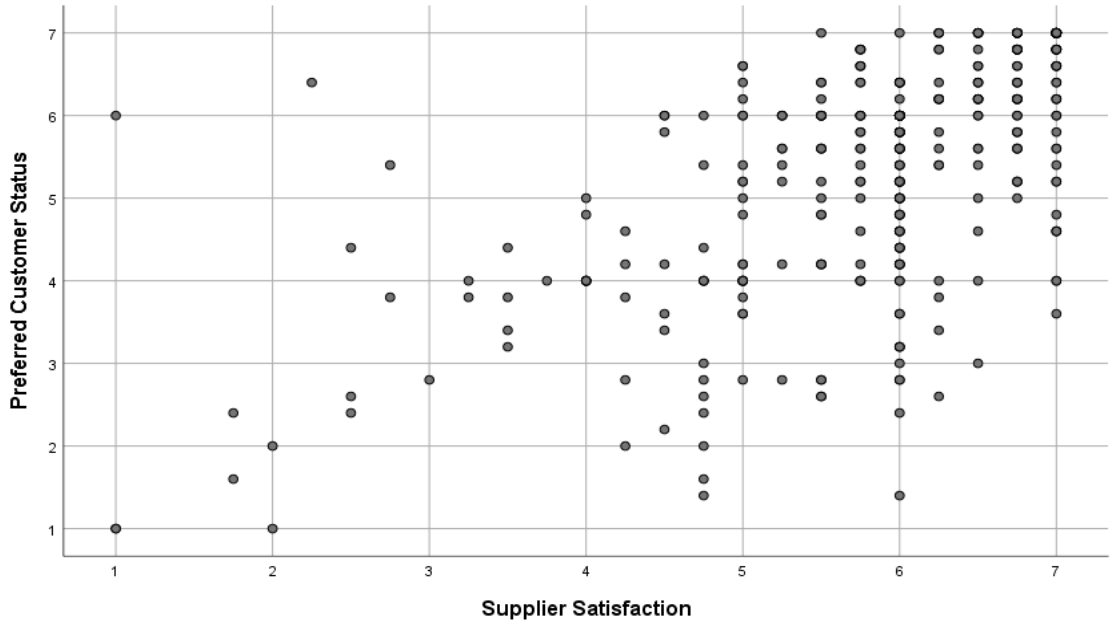

Figure 31. Preferred customer status vs. Supplier satisfaction

Appendix B8: Descriptives for BBBEE and non-BBBEE suppliers

Table 70. Supplier satisfaction based on BBBEE and non-BBBEE status

	CV4			Statistic	Std. Error
SuppSat	Yes	Mean		5,851	0,155
		95% Confidence Interval for Mean	Lower Bound	5,540	
			Upper Bound	6,161	
		5% Trimmed Mean		5,989	
		Median		6,000	
		Variance		1,370	
		Std. Deviation		1,171	
		Minimum		1,000	
		Maximum		7,000	
		Range		6,000	
		Interquartile Range		1,375	
		Skewness		-1,831	0,316
		Kurtosis		4,897	0,623
	No	Mean		5,671	0,132
		95% Confidence Interval for Mean	Lower Bound	5,407	
			Upper Bound	5,936	
		5% Trimmed Mean		5,729	
		Median		6,000	
		Variance		0,994	
		Std. Deviation		0,997	
		Minimum		2,500	
		Maximum		7,000	
		Range		4,500	
		Interquartile Range		1,625	
		Skewness		-0,750	0,316
		Kurtosis		0,563	0,623

Appendix B9: Histograms of supplier satisfaction scores

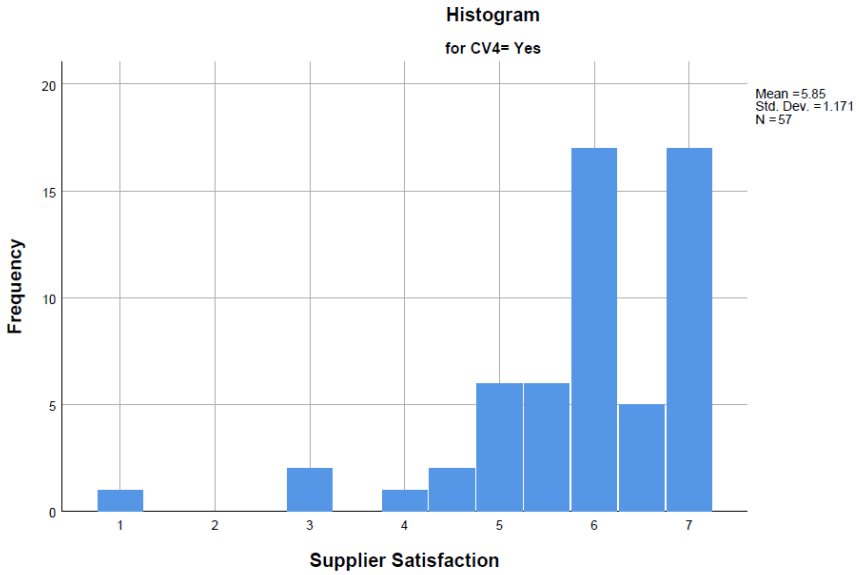

Figure 32. Histogram of supplier satisfaction scores for BBBEE suppliers

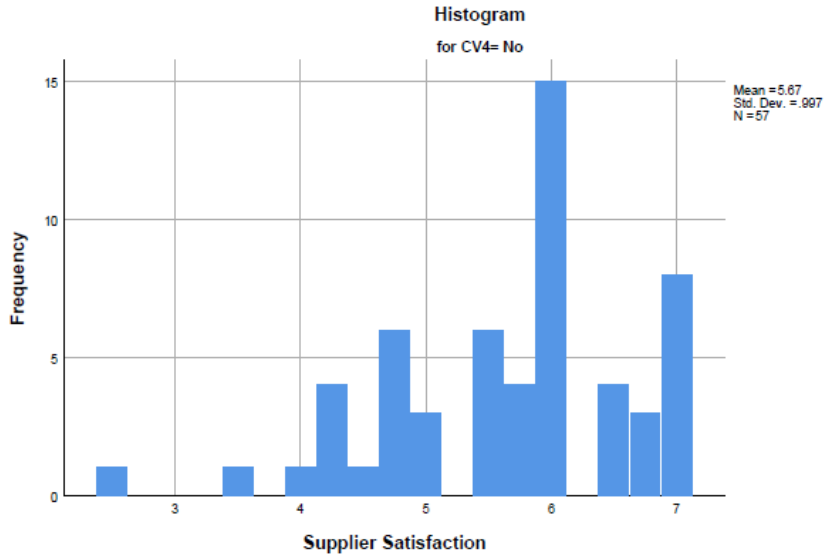

Figure 33. Histogram of supplier satisfaction scores for non-BEE suppliers

Appendix B10: Descriptives for length of commercial relationship

Table 71. Supplier satisfaction based on length of commercial relationship

rCV6				Statistic	Std. Error
SuppSat	5 years or less	Mean		5,864	0,089
		95% Confidence Interval for Mean	Lower Bound	5,688	
			Upper Bound	6,039	
		5% Trimmed Mean		6,019	
		Median		6,000	
		Variance		1,553	
		Std. Deviation		1,246	
		Minimum		1,000	
		Maximum		7,000	
		Range		6,000	
		Interquartile Range		1,250	
		Skewness		-1,828	0,174
		Kurtosis		3,570	0,346
	More than 5 years	Mean		5,802	0,074
		95% Confidence Interval for Mean	Lower Bound	5,657	
			Upper Bound	5,947	
		5% Trimmed Mean		5,882	
		Median		6,000	
		Variance		0,937	
		Std. Deviation		0,968	
		Minimum		1,000	
		Maximum		7,000	
		Range		6,000	
		Interquartile Range		1,000	
		Skewness		-1,447	0,185
		Kurtosis		3,641	0,367

Appendix B11: Histograms of supplier satisfaction scores

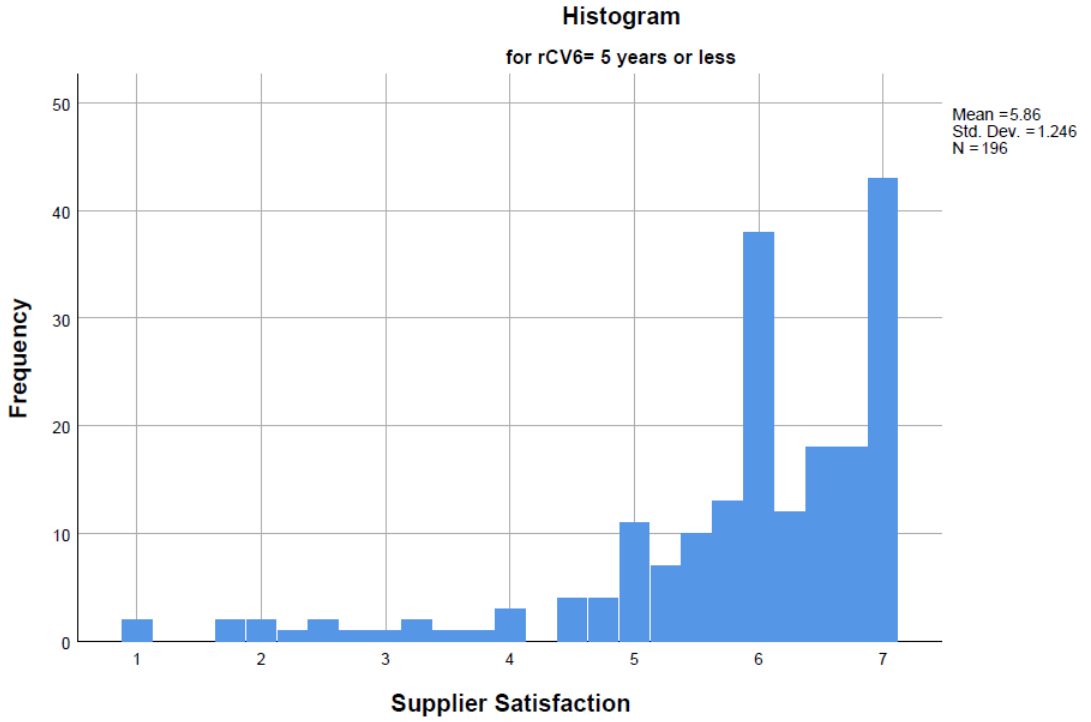

Figure 34. Histogram of supplier satisfaction scores < 5-year commercial relationship

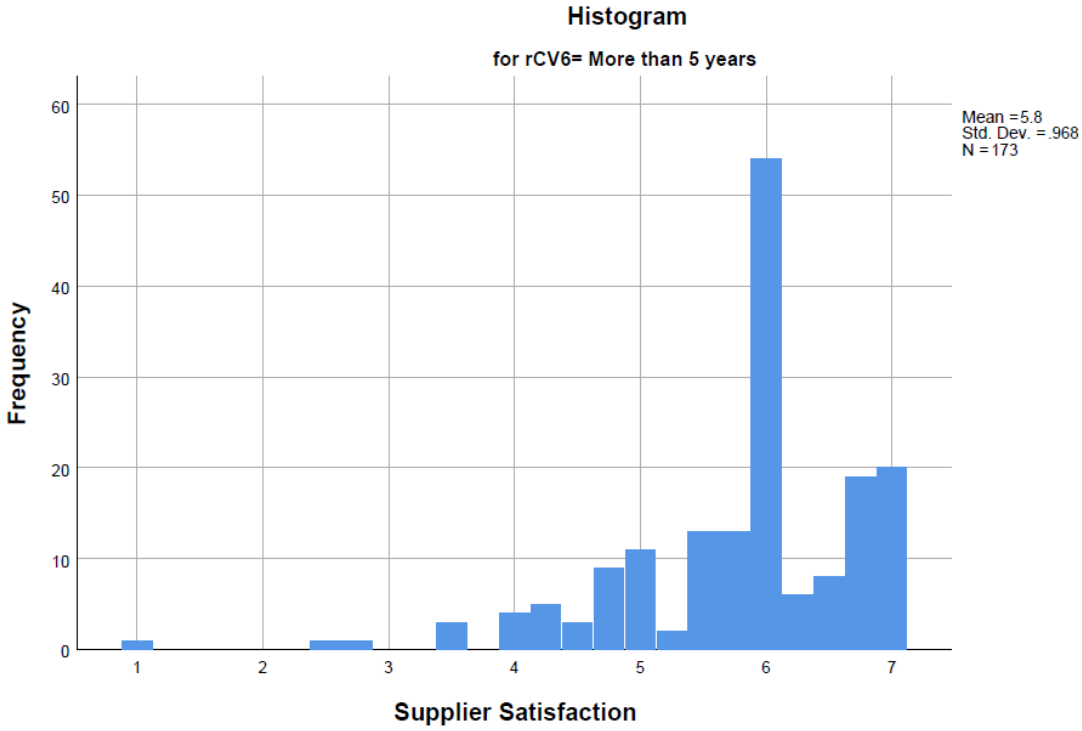

Figure 35. Histogram of supplier satisfaction scores > 5-year commercial relationship

Appendix C: Letter of authorisation from Kumba Iron Ore Ltd

EXTERNAL

AngloAmerican

IRON ORE
KUMBA IRON ORE
Sishen Iron Ore Company (Pty) Ltd
CORPORATE OFFICE

LETTER OF CONSENT

To	The Research Ethics Committee - Gordon Institute of Business Science
From	Vusi Maseko – General Manager: Supply Chain Management
Date	20 July 2019
Enquiries	Vusi.Maseko@angloamerican.com
Subject	**Authorisation for Neelesh Amaidas to proceed with a supplier satisfaction survey and research**

On behalf of Kumba Iron Ore Ltd, I am writing to formally indicate that we are aware of the research being proposed by Neelesh Amaidas, a student in the 2019 MBA program at the Gordon Institute of Business Science, in the field of supplier satisfaction. We are also aware that Neelesh intends to conduct his research by administering an electronic survey to Kumba suppliers only and we look forward to the outcome of his research on an aggregated basis that is free of supplier identifiers.

As the General Manager for Supply Chain Management, I grant Neelesh permission to proceed with his research at Kumba Iron Ore Ltd only on the basis described above.

If you have any questions or concerns, please feel free to contact my office at +27126792180

APPROVED/ ~~NOT APPROVED~~

20/07/19

VUSI MASEKO **DATE**
GENERAL MANAGER
SUPPLY CHAIN MANAGEMENT

Appendix D: Consent statement

Dear Supplier

Kumba Iron Ore Ltd supplier satisfaction survey

I am currently a student at the University of Pretoria's Gordon Institute of Business Science completing my research in partial fulfilment of an MBA. I am conducting research to understand the quality of the relationship between Kumba Iron Ore (Kumba) and its suppliers as an example of an industrial buyer-supplier relationship. The research aims to gain insight into how the relationship between a buying firm and its suppliers can be improved. For this reason, the research requires an assessment of your level of satisfaction with Kumba.

As a supplier to Kumba, you are invited to participate in an online survey which should take no more than 20 minutes of your time. Your participation in this survey is strictly anonymous and confidential. You are not requested to provide any information that will reveal your identity. All outputs from the survey will be reported on an aggregated basis free of identifiers. Your participation is completely voluntary, and you may withdraw at any stage without penalty. Kindly click on this Survey Monkey link to commence the survey:

https://www.surveymonkey.com/r/Kumba_supplier_satisfaction_survey

If you have any concerns or questions, please do not hesitate to contact my supervisor or myself. Our details are provided below.

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Researcher

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Research Supervisor