

# Evaluating value differentiation in the South African polymer market

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## **ABSTRACT**

**Title:** Evaluating value differentiation in the South African Polymer market

The purpose of this study was to evaluate the value differentiation in the polymer industry in South Africa by rating the polymer customers' experience in this regard. This study is important in the light of increasing polymer competition worldwide. No records of similar studies in this industry in South Africa have been found. As such this study could make a contribution that could spur polymer manufacturers and suppliers in improving their competitive advantage by offering value-added services to enhance the customer experience and, as a result increase customer satisfaction levels.

The type of research conducted was a descriptive research applying the quantitative research methodology. The non-probability quota sampling method was employed. The study population consisted of a select group of customers from a South African polymer manufacturer and supplier. A questionnaire was e-mailed to the select group of polymer customers, many of whom purchase polymer locally and abroad. A response rate of 74% was obtained from a sample of 68 customers approached.

The survey results show statistically that a positive satisfaction level was attained, but also highlighted some areas where certain value drivers such as company image, supply and distribution, and information lack attention. Polymer suppliers could gain the competitive advantage by focusing on the drivers that many customers value to ensure that customer satisfaction levels are sustained or improved on. More importantly, polymer suppliers should focus on the low scoring satisfaction levels recorded from the survey, from which they could build by enhancing the total value proposition.

Limitations of the study were identified. Recommendations for future research were made.

**Key terms:** Value Differentiation, Customer Perceived Value, Customer Satisfaction and Loyalty, Customer Value Proposition, Customer Experience.

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## **Remarks**

Please be advised that the editorial and referencing style of this mini-dissertation is done in accordance with the North West University Referencing guide 2012, which uses the Harvard Style, and which is within the policy guidelines of the MBA Programme of the Potchefstroom Business School.

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## **Chapter 1: INTRODUCTION TO THE RESEARCH PROBLEM**

*All truths are easy to understand once they are discovered.  
The point is to discover them.*

- Galileo Galilei  
Italian astronomer & physicist (1564 - 1642)

### **1.1. Introduction**

The aim of this study is to evaluate value differentiation in the South African (SA) polymer market.

The background and problem statement is provided in this chapter, leading to the primary and secondary objectives of this study. The research methodology, to achieve the objectives, is provided, followed by the limitations of this study. This chapter concludes by providing an overview of the structure of the study by means of a brief description of the contents of each chapter.

### **1.2. Background**

Plastics play a role in most aspects of human life. Plastic is a derived demand and most consumer purchases will contain some or other form of plastic. Plastic is used in the form of food packaging, commercial and industrial pipes, containers and drums, flexible packaging film, bottles, ropes and shade netting, crates, pallets, toys and many other applications. According to Goldwyer (2007) the SA polymer converter industry (comprising roughly 1 200 converters) produce 1.37 million tons of plastic a year.

Polymer is the raw material used in the manufacture of a variety of plastic products. Polymers can be categorised as commodity and speciality products. Commodity plastics are commonly produced, are freely available and are sold in high volumes. These commodity polymers are mostly used in a variety of applications sold directly or indirectly to a wide consumer base. Speciality polymers are specially engineered plastics that contain higher performance characteristics, specially made to meet customer needs (Rosato *et al.* 2000:235) – these are not freely available, and therefore manufacturers can command a higher price for such speciality products.

This research will deal with the polymer industry of commodity plastics in SA – polymers which are widely used and have common characteristics. Since the international gates to trade have been opened, the manufacturers and suppliers of polymers in SA face the concern of losing long-term customers who can source the commodity polymer globally at competitive prices (Goldwyer, 2007; Singh, 2013). Local polymer manufacturers and suppliers need to retain their customer base and loyalty through providing a value differentiation to justify its price premium over imported prices.

### **1.3. Problem statement**

Increased competition and globalisation have given the customer more power and choice. Local markets and industry are prone to competitive attacks from foreign competition (Kotler & Armstrong, 2012:577). To survive these attacks of heightened competition, organisations need to reinvigorate customer loyalty through value differentiation and customer experience to enhance customer perceived value.

Over the past number of decades much emphasis has been placed on providing the customer with a quality product and service at a price the customer perceives as the value attached to that product and service (Kotler & Armstrong, 2012:561). Many organisations have embraced various quality and business re-engineering processes to fulfil this initiative but, as competition catches up, a supplier's competitive advantage is eroded by the commoditisation of products and services. A further aggravation to a local supplier's competitive advantage is the fact that imported polymers are normally cheaper than the locally manufactured polymers (Singh, 2013). Various factors contribute to the cheaper imports, such as foreign organisations receiving state subsidies, relaxed labour laws versus South Africa's rather rigid labour regime, supplemented by the relaxation of import duties on the influx of polymer into SA.

The price premium attached to the price of a product needs to reflect the actual value of the product or service delivered (Porter 2008:139), as well as how the buying organisation perceives this value. Kotler and Pfoertsch (2006:4) define a brand as something which “is emotional, has personality and captures the hearts and

minds of its customers”, and it is this experience that organisations can use to overcome competition.

This is the case of this study in the polymer industry in SA. Local manufacturers and suppliers of polymer products face the threat of subsidised and cheaper imports (Goldwyer, 2007; Singh, 2013) and, in the light of recessionary pressures the emphasis on polymer customers is price sensitivity. To counter this trend, local manufacturers and suppliers need to differentiate in ways that convince their customers, and in ways that surpasses the price premium tagged to their product.

This leads to the question if there are value driver elements that are deemed important to the SA polymer customer, and if the expectations of customers regarding these elements are being met.

#### **1.4. Objectives of the study**

##### **1.4.1. Primary objective**

The primary objective of the study is to evaluate the importance of value differentiation in the minds of the SA polymer customer as a perceived value. This will be achieved by measuring the actual customer experience to the value differentiation elements offered by suppliers. Through this research certain suggestions will be proposed on how SA polymer manufacturers and suppliers can improve their value differentiation to justify its premium on price offered.

##### **1.4.2. Secondary objectives**

In support of the primary objective, the secondary objectives are to

- identify and define the elements that constitutes the term “value differentiation” and its association with “customer perceived value”;
- conduct a literature review to gain insight on value differentiation and how its attributes contribute to higher price acceptance;
- assess the accuracy and reliability of the questionnaire used, through statistical analysis, to validate the various elements identified to measure the customer experience; and

- suggest practical recommendations to polymer manufacturers and suppliers on how to enhance value differentiation as a means to motivate its higher price over cheaper imported price threats.

### **1.5. Scope of the study**

The study was done within the marketing discipline by focusing on a certain sector of the polymer market and on the customer base of one of the polymer manufacturers.

### **1.6. Research methodology**

The empirical research took the form of a descriptive research by following the quantitative research design. The research was conducted through the use of a structured questionnaire. Due to the nature of competition and sensitivities in this market, an attempt was made to investigate the importance of value differentiation, and to assess the current customer experience level through a questionnaire that has been pre-tested. The questionnaire was distributed to a pre-selected sample of converters of one of the main polymer manufacturers in SA.

With reference to the specific objectives, this research consisted of two phases namely a literature review and an empirical study. A review of the research design and research instrument, together with the data collection and issues pertaining to this study, will be provided in chapter 3.

#### **1.6.1. Phase 1: Literature review**

A literature review was conducted with regard to value differentiation, customer experience and customer perceived value. Preliminary research and various authors have revealed a link between customer perceptions on value-to-price-determination. The literature review will focus on the factors that affect customer perceptions on value differentiation and its various elements which have an influence on customer experience.

Sources of literature review will consist of

- published books by experts in their field;
- various published journals;
- credible internet sites, and

- previous dissertations on the subject matter or similar.

The literature review will be included in the following chapters:

- Chapter 2

Various elements of value differentiation pertaining to customer experience were defined and explained by the subject matter experts, as well as its impact on price and customer perception.

- Chapter 3

A review of the research design and research instrument, together with the data collection and issues pertaining to this study, is provided in this chapter.

### **1.6.2. Phase 2: Empirical study**

The empirical study consisted of the research and questionnaire design, the study population, data gathering and statistical analysis.

#### **1.6.2.1. Research design**

A marketer wishing to study or understand a customer's buying habits would use descriptive research – such research, according to Wilson (2010:104), describes an “existing or current phenomena”.

Descriptive research focuses on a problem being studied rather than finding the reasons (cause and effect) that affect such problems. It rather focuses on describing the variables and its relationships that exists in a given situation (Johnson & Christensen, 2012:366). This follows Nargundkar's (2003:24) view, who states that most marketing research is done using the descriptive method which can be classified as longitudinal (research over period of time) or cross-sectional (research done at a point in time of a specific population sample of interest).

Wiid and Diggines (2010:55) explain that descriptive research can provide the answers to “the opportunities or threats” of the uncertainty or the unknown which exists in a particular industry. They describe a cross-sectional study as one which collects information from a given sample of the population, with the sample being representative of the target population.

To obtain a better understanding of customer behaviour, and the relationships between the variables leading to such behaviour, Neelankavil (2007:134) states that descriptive research can best achieve this through the collection of data via either one of the three approaches – through observation, through surveys, or through longitudinal studies.

According to Malhotra (2007:143) quantitative research seeks to quantify data, as opposed to qualitative research, which is seen as subjective, exploratory in nature and unstructured. Kolb (2008:32-33) stipulate that, although qualitative research can best provide the in-depth information on attitude and beliefs of customers, quantitative research provides the proof scientifically.

For the purposes of this study a survey, by means of a questionnaire, was used to obtain the numerical data required. This study took the form of a cross-sectional quantitative descriptive research by conducting a survey through a questionnaire issued to the respondents. Survey questions were numbered and scored using numerical data to explain the phenomena under investigation. This type of research is relevant in obtaining the necessary answers to address the problem statement of this dissertation.

#### **1.6.2.2. Designing the questionnaire**

The questionnaire was the measuring instrument of the data gathered. The purpose of a questionnaire design is "...to illuminate the subject under investigation...and to give insight into the market place" (Azzara 2010:355). Such data needs to be valid, and obtained by qualified respondents (Azzara 2010:18).

Kumar (2010:177-178) comments that data validity of a research questionnaire is intended to measure "that which it is designed to measure". He further states that to measure less tangible items, such as attitude and satisfaction levels, several questions will need to be asked to cover the concepts being investigated, and that these questions actually measure that what it is designed to measure.

The questionnaire used was adopted from the research of Ulaga and Eggert (2006), Vandenbosch and Dawar (2002), and Hill *et al.* (2012), but modified to incorporate

the value propositions and attributes polymer customers would most probably see as value differentiators. The questionnaire was scored using the 5-point Likert-scale interval. Participants were asked to measure their rating of satisfaction, where

- 1 = Very dissatisfied;
- 2 = Somewhat satisfied;
- 3 = Neither satisfied nor dissatisfied;
- 4 = Somewhat satisfied; and
- 5 = Very satisfied.

### **1.6.2.3. Study population**

The non-probability quota sampling method was employed. Quota sampling allows for participants that can be conveniently found to be representative of the population which have similar characteristics (Jackson 2011, 102-103; Cummings & Worley, 2008:129).

### **1.6.2.4. Study participants**

Permission was granted by one of SA's polymer manufacturers and suppliers to approach the participants, who consisted of a select group of customers. Most of these customers also purchase polymer products (similar and other types) locally and/or via imports, i.e. they are common customers to local and overseas competitors.

Participants consisted of commercial buyers and senior personnel who have authority on the buying decision of the buying organisation. This select group are large players in the plastics manufacturing industry. Due to the sensitivity of the industry and its customer base, anonymity and confidentiality was guaranteed.

### **1.6.2.5. Gathering of data**

Being a main polymer manufacturer and supplier in SA, permission was obtained from the executive team to conduct the research on a select group of customers. A covering letter (Appendix A) detailing confidentiality was sent with the questionnaire, which was e-mailed to the participants.

The questionnaires (Appendix B & C) and covering letter were e-mailed to the select group of customers, who were asked to complete the questionnaire and return by reply e-mail to sender. To ensure a positive response rate, periodic reminders (via e-mail and telephone calls) was necessary to alert the participants of the required deadline.

#### **1.6.2.6. Data Analysis**

The North West University Statistical Consultation Services department was approached for assistance in the analysis of the data collected. The data collected was analysed using the IBM SPSS Statistics Version 21, Release 21.0.0, Copyright© (SPSS Inc., 2013).

#### **1.6.2.7. Validity, reliability and Cronbach alpha**

Researchers need to use measuring instruments to accurately establish the answers to the problem under investigation in a given situation. The measuring instrument needs to be reliable and valid. The measuring instrument needs “to measure that which it is intended to measure”, as explained by *Welman et al.* (2010:142). This is known as construct validity, and the scores from these measurements indicate the “degree to which it measures the intended construct”, or the measurement error.

Factor analysis was used to measure the construct validity, whilst Cronbach alpha coefficient was used to evaluate the reliability (consistency) of the constructs used in the survey. *Field* (2007:666) regards scores of 0.7 and higher as sufficient.

#### **1.6.3. Limitations of the study**

The polymer manufacturing industry in SA consists of an oligopoly of four main players. Because of the sensitivities and nature of competition of the polymer industry, this research was confined to a select group of participating customers. The results of the study may not be relevant to the total SA polymer market. However, some of the participants are market leaders in the converting industry, and their inputs can be seen as an accurate reflection of the industry at large.

The use of questionnaires in itself presents a limitation in that no causality could be established to the customer’s satisfaction level. The questionnaire was designed by

identifying the elements upon which customer satisfaction experience could be measured, as opposed as to finding the reasons impacting the customer's satisfaction level.

This study did not address the conceptualisation of what polymer customers perceive as value; it rather focused on measuring their satisfaction level on existing value attributes that make up the value proposition.

Another limitation was that the study did not assess whether customers would in fact pay differentiated prices for differential value propositions offered. Further research in this regard is recommended.

A further limitation of this research is where the participants' scoring was based on an overall level of satisfaction in cases where they have more than one supplier. No distinction was made to measure any specific supplier, thus making it difficult to assess which supplier could improve from the results of this study. The purpose was not to evaluate the individual suppliers separately (due to the sensitivities and competition in this industry), but to evaluate the overall customer experience of the polymer suppliers with whom customers had dealings with.

Another limitation to this study is that no distinction was made between local and import agent supply dealings with customers, to assess which provide the better customer experience.

#### **1.6.4. Ethical considerations of the research**

Ethical consideration is given by following the moral principles guiding research, such as:

- Consent – consent was obtained from both the North West University's Potchefstroom Business School to conduct the research, as well as from the polymer manufacturer and supplier to approach some of the participants of their customer base.
- Confidentiality and Anonymity – participants were ensured confidentiality and anonymity in the covering letter (Appendix A), in that no reference or questions regarding their name would be made.

- Voluntary participation by participant was emphasized in the covering letter (Appendix A).
- Transparency - access to final research findings were offered in the covering letter (Appendix A).

### **1.7. Layout of study**

This mini-dissertation comprises four chapters summarised below:

#### **Chapter 1 – Introduction and problem statement**

This chapter deals with the introduction and problem statement, and concludes with the research approach, methodology, target population and summary.

#### **Chapter 2 – Literature review**

This chapter contains the relevant literature review to the concept of value differentiation from a marketing perspective.

#### **Chapter 3 – Research methodology, empirical study and results**

The research methodology used in the empirical study is explained, detailing the type of questionnaire used, the sample design, analysis and evaluation of the data gathered.

#### **Chapter 4 – Conclusion, limitations of study and recommendations**

In this final chapter conclusions are made from the results obtained. The results of the data are evaluated with reference to the literature review made. Recommendations based on the literature review and empirical research is proposed. Opportunities for further research in this area are made as a concluding remark.

### **1.8. Chapter Summary**

Chapter 1 provided the introduction and motivation to the problem statement, defined the primary and secondary objectives of this study, highlighted the research methodology that will be used, and identified the limitations associated with this study.

The literature review pertaining to the problem statement and the objectives is dealt with in Chapter 2.

## **Chapter 2: LITERATURE REVIEW**

*The purpose of staying afloat in business is to create something people will pay for.*

– Thomas Edison (1847-1931)

### **2.1. Introduction**

Competing in the global market is becoming an increasing problem from a competitive and price point of view. In order to sustain its competitive advantage, organisations need to focus stronger on their customers through customer relationship and the monitoring of customer experience (Gentile *et al.*, 2007: 395).

With price and product nowadays being seen as less important differentiators (Ulaga and Eggert, 2006:119), it is becoming ever more important for suppliers to differentiate themselves through interactions with customers that provide value-adding benefits, such as ease of doing business, effective supply chain, customer relationship and information sharing.

### **2.2. Customer Value Proposition**

Price, quality and service are generally accepted attributes of what customers see as value. These attributes need to be interdependent, and not mutually exclusive, if they are to create that customer experience (Baker, 2010:145). This customer experience results in the customer making a trade-off (sacrifice) in acquiring the product or service. It goes without saying that not one of the elements of price, quality or service can function on its own to create the experience the customer seeks.

A customer seeks a healthy mix of the elements that creates a positive experience. Through the fusion of these elements, Baker (2010:146) suggests that organisations need to focus their attention on utilising activities that contribute positively to the customer experience. These activities, among others, take the form of technical services, latest technology, trust and commitment, good reputation, and trade name. Baker (2010:146) cites a survey by Holden Advisors which found that 65% of businesses prefer value to low price. Organisations that can transform the customer by taking them “from where they are to where they want to be” will be those judged

and perceived as value-creating; it is this value creating ability that commands the price a customer is prepared to pay (Baker, 2010:156).

In marketing terms the collective differences organisations offer with their products and services are referred to as “value propositions” (Anderson *et al.*, 2006:91). These differences, among many others, include customer relationships and interactions, accurate order fulfilment, effective supply chain utilisation, product packaging, appearance, product quality, technical support and know-how, product innovation, brand, and company image.

Kotler and Armstrong (2012:561) propose that organisations can deliver superior customer value through the application of operational excellence, customer intimacy and product leadership. It can be deduced that the application of these respective disciplines will result in organisations

- being leaders in their field through lean management principles by supplying top quality and effectively priced products which customers want;
- that, through careful marketing segmentation and understanding the customer base, organisations are able to accurately satisfy customer needs by means of its close relationship and knowledge of the customer; and
- through continuous product development, innovation and technical assistance, organisations are able to provide superior value and solutions to customers who seek first-mover, or first-to-market, advantages.

The value adding activities that result in higher customer satisfaction will command a price premium, termed value-adding price (Kotler *et al.*, 2012:317).

Economic pressures and heightened competition have shifted the customer focus to better and cheaper pricing on offer in the market place. This is especially true in a commoditised market. Kotler *et al.* (2012:44) reveals from previous studies that customers will shop around, even if inconvenient, purely for lower prices. A way to counter this defection is through increased customer relationship management and value proposition. It is imperative that organisations strive to provide the best

experience that will result in a satisfied customer, thereby enhancing customer loyalty and continued purchases.

Ferrell and Hartline (2011:245) postulate that product differentiation is a means to ensuring customer brand loyalty through their perceived value of the product being better than that of a competing product or substitute. This suggests that the demand for the product remains inelastic, and that customers will not be price sensitive.

Porter (2008:120) states that an organisation differentiates itself from its competitors in the way they offer “something of unique value” and, as a result, command a higher price and/or greater customer loyalty. Differentiation occurs through the value chain, which is a set of activities an organisation performs that will affect the customer. Any unique value offered by the organisation, such as inbound and outbound logistics, on-time delivery, quality product development and manufacture and technical services supplied will all be seen to be adding value for the customer.

### **2.3. Value differentiation and the value chain**

Most products or services on offer are commodities (similar products readily available and produced in high volumes). To obtain, retain or grow market share, many organisations need to offer its commoditised product in a different way to that of its competitors. Dodds (2003:171) acknowledges that, in today’s highly competitive environment, organisations need to differentiate themselves from competitors in ways that are meaningful to customers. Dodds (2003:171) quotes George Day as stating the organisations must “...set themselves apart from its competitors... It must identify itself... as the best provider of attributes that are important to customers”.

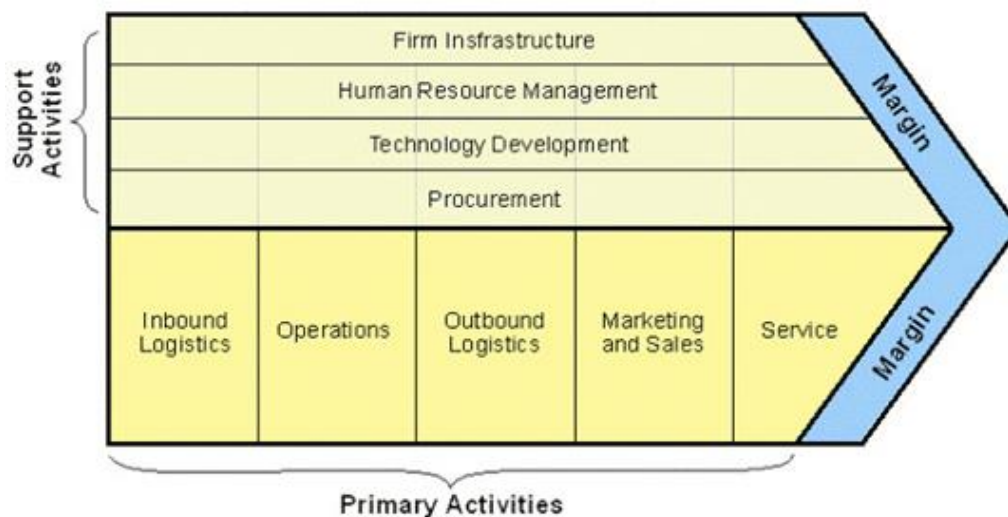
It can be argued that what constitutes “value” will differ from customer to customer.

Porter (2008:119) states that an organisation which offers its customer something that is “unique and different” from its competitors create value for its customers. Many organisations may believe that they offer something “unique and different” from its competitors, but ultimately judgement remains in the hands of the customers; of what they regard as value. Some customers may view the unique and

different offering differently from others. Not all the differentiating characteristics may reflect equal value to all customers. Porter (2008:120) warns that the cost of providing the differentiating factor must be less than the price premium achieved. This suggests that organisations must manage such costs in a manner that will not exceed the price premium asked.

Porter (2008:120), in explaining that differentiation “grows from an organisation’s value chain”, based his Value Chain Model on the pioneering works of Lancaster. The model highlights how different functions of an organisation should work in tandem to create value (something “unique”), and how each function can be a resourceful value-adding activity. Figure 2-1 depicts Porter’s Value Chain Model:

**FIGURE 2-1: Porter's Value Chain Model**



Source: mynitb.wordpress.com

One can formulate from the above how various activities can contribute to the objective goal of best servicing the customer. These activities are described as

Primary Activities:

- Inbound logistics – on time storage and delivery of quality raw materials/ services on to operations;
- Operations – applying lean manufacturing principles, including 6 Sigma and Total Quality Control;
- Outbound logistics – warehousing and distribution, lead times, ensuring product delivery to customers when ordered;

- Marketing and Sales – servicing the targeted customer segment through the marketing mix principles of Price, Product, Place, Promotion, People, Process and physical environment; and
- Services – support services to customer, after-sales-service, technical and research and development.

Support Activities:

- Procurement – sourcing quality raw material and services at best price and terms.
- Technology development – employing latest technologies for the added advantages.
- Human resource management – recruit, train and develop the right calibre of people to serve the organisation and its stakeholders.
- Organisational infrastructure – efficient and durable infrastructure such as finance, legal, management, ethics and good governance to ensure sustainability.

Organisations that are successful in differentiating their products and activities offer something that the customer sees as value at a price premium that exceeds that of the cost of providing that differentiation (Porter, 2008:130-134). For businesses to understand what customers value, organisations need to understand and be part of, the customer's value chain. To achieve this, an organisation which applies the value chain for its operational effectiveness, should consolidate or link to that of the customer's value chain, e.g. inbound logistics and procurement function. This suggests that organisations will add value to the customer if it is able to provide the correct quality product and service at the right price at the right time by simplifying the customer's ordering and stockholding process, e.g. by replenishing stocks automatically once certain levels are reached. The greater impact the links or connections can exert on the customer's value chain, the greater the level of differentiation it is able to have on the customer (Porter, 2008:130-134). This culmination of value-adding benefits provides what Porter defines as the "upper limit" of the price premium an organisation can command, relative to its competitors.

It can be concluded from the above that, although the threat of cheaper imported products exists, organisations will be able to overcome this threat by creating value-adding benefits that customers will accept as the premium paid over cheaper imported goods.

#### **2.4. Customer Satisfaction = Loyalty = Willingness to pay**

Customer loyalty is created through a customer relationship. It is generally accepted that a “happy customer” will remain loyal to the brand. Kotler *et al.* (2012:44) refers to studies that measure the customer satisfaction correlation to customer loyalty. Studies revealed a drop in sales due to decreased levels of satisfaction. The reshaping of value propositions should be an ongoing initiative by organisations in their continued effort to retain customers through the improvement of their satisfaction levels.

In a recent study by Yee and Xian (2012:49-66) it was found that loyal customers are less price sensitive. In their research to create greater customer loyalty organisations need to satisfy their customers. This view is supported by various authors and researchers (Herrmann *et al.*, 2001; Homburg *et al.*, 2005; Duke *et al.*, 2006) who affirm that satisfied customers affect price sensitivity positively, resulting in customers’ willingness to pay.

To satisfy customers, organisations need to ensure that the product, service and customer expectations are met (Blackwell *et al.*, 2006). Organisations not meeting customer expectations stand the risk of losing an unsatisfied customer.

#### **2.5. Customers’ value perception**

It is widely accepted that customers see value as the price paid for a quality product or service. A change in the characteristic of one of these elements will have an impact of the customer’s perception of its value. This perception leads to the customer’s willingness to buy, and this becomes the marketer’s objective when setting a price that should be consistent to the customer’s perception of value (Dodds, 2003:171; Verma, 2007; Saxena, 2009:143-156).

Customers focus mainly on the total benefits of a marketing offer (i.e. product, quality, service and experience). Their judgement on the marketing offer is not adjudicated objectively but subjectively – this leads to the customer’s “perceived value” which eventually determines the price the customer is willing to pay (Kotler *et al.* 2012:36-37).

Vandenbosch and Dewar (2002: 35-42) in their research found that customers would turn to dimensions beyond price and quality. This was due to the fact that product parity (on price, quality and service) was easily achieved in open markets, through competition and commoditisation. It was found in their research that customers would value customer interaction as valuable, or more so than the product they actually purchase. Customers valued certain elements as main drivers in their choice from whom they purchased – drivers such as convenience; ease of doing business; product support, trust, confidence and strength of relationships are those that customers value. Robinson *et al.* (2002:149-166) echo this view in their argument that organisations cannot only “manipulate product attributes” to gain the competitive advantage, but that they need to differentiate themselves through service such as: regular contact with customers; order handling procedures; emergency responses to accident and prevention, technical information and assistance, credit terms and Just-in-Time delivery procedures.

Porter (2008:138) highlights the difficulties customers have in identifying the value that an organisation and its product may have on its value chain or performance prior to and after a purchase. He states that many customers understand the direct impact an organisation’s product and price have in its value chain (what he terms “use of value” criteria) from a cost and performance perspective.

However, many customers fail to comprehend the indirect impact of the value adding services that the organisation provides. These “hidden” benefits include services such as transportation, technical assistance and setting up costs, which an organisation provides to the customer over and above the normal product delivery and price (Porter, 2008:138). By implication this suggests that the customer may not recognize or understand the organisation’s true differentiating value offering, and that their procurement decision will be based more on price and product factors

alone. This lack of customer understanding can be overcome through the adoption of a strategy to educate the customer of the organisation's value offering, or value proposition, so that the customer can appreciate the value offering.

Where customers lack the full understanding of the value offering (i.e. unable to identify the hidden benefits), they perceive value of an organisation's offering through an organisation's reputation, professionalism, appearance, advertising, market standing, word-of-mouth, employee and seller personality, employee satisfaction, information presented and attractiveness of facilities (Porter, 2008:139) relative to that of its competitors. Porter terms this as "signals of value" criteria. This suggests that organisations will be seen to provide a differentiation over its competitors in the way it presents itself, and in the manner it is recognisable or seen in the business environment. To provide these "signal of use or values" organisations need to incur ongoing expenditure (such as advertising, marketing campaigns, facility upgrades) to create or imprint the customer perception of a superior service/reputation over that of its competitors.

Perceptions change constantly, and to keep this imprinted in the customer's mind will involve continuous affirmation through ongoing improvements, involvement and presence of an organisation's image and services.

Verma (2007:65-66) identifies the following basis which customers view as values:

- Value as a low price – this especially applies to price sensitive customers, who need to manage their input costs in order to remain competitive.
- Value as benefits – customers look at the benefits associated with the value proposition, e.g. rendering technical assistance and product development initiatives.
- Value as quality – customers factor both price and benefit versus the trade-off in terms of price they are prepared to pay.
- Value as perception – "what is given and received". Customers perceive the total offering (i.e. product, quality, benefits and services) that has been received in exchange for the price paid.

Verma (2007:64) supports the approach that a market-related price to be charged should be based on the customer's perceived value. Various elements make up the perceived value customers have, namely product and service characteristics; image portrayed by the organisation through marketing and advertising, customer care services, as well as aspects such as reputation, market presence and employee personality, which follows Porter's "use and signals of value" criteria. Verma (2007:64) proposes that organisations understand what it is that act as value drivers to customers who willingly will pay/sacrifice their worth in the marketing exchange.

An organisation is able to command a higher price in the way that it creates value (through the use criteria), as well as in the way a customer perceives value. This price premium is thus seen as a "uniqueness" in both "use and signal" criteria. However, Porter (2008:142-144) warns that an organisation should distinguish between "use of value" and "signal of value". An organisation must fully understand that the "true source" of customer value is the impact an organisation's total product offering has on a customer's value chain; in the way it creates value (cost and performance). This, as Porter re-affirms, is what determines the "appropriate" price premium. As explained, "signals of value" is a perception created, especially more so on customers who may not fully understand the true value of the product and services offered by an organisation (i.e. understanding the direct and indirect impact on a customer's value chain).

From Porter's theory comes the assumption that customers will only pay for value which they perceive as being different and superior to that of a competitor, albeit it at a higher price.

Ritter and Walter (2012:136-144) found that a customer's perceived source of value is in the way an organisation differentiates itself in its relationship with the customer. They propose that organisations use the eight relationship functions listed below to contribute to the customer's value creation process:

- Payment – refers to price and cost of procurement process.
- Innovativeness – refers to ideas to new products/development of existing product characteristics.

- Volume – ability to supply complete needs to customer.
- Quality – realisation of product requirement and functionality.
- Safeguard – lessen dependence on other suppliers and making available variable volume procurement options.
- Information – knowledge of competitors and market conditions.
- Accessibility – ability of suppliers accessing customers to other suppliers, customers, partners.
- Motivation – ability to influence customer positively, e.g. innovativeness, social responsibility and company success.

It is evident from the above that organisations need to do more than just provide a quality product and/or service. Organisations need to infuse an emotional relationship with customers that will be seen as one that is meaningful and of value-adding; and something which customers would expect in a relationship that will be of mutual benefit.

## **2.6. Customer Experience (CE)**

Traditionally customer interaction and involvement related to the functional product features (quality, characteristics) and transactions (i.e. order placement, invoicing, account settlement). This old approach in today's volatile and competitive environment is insufficient to secure customer loyalty on future business. Organisations need to step out of this zone, and differentiate themselves to offer that "something else" or "uniqueness" (Porter, 2008; Baker, 2010) that will add value and experience to the customer.

Schmitt (2010:17) best defines customer experience as something which adds value to the customer's decision making, purchasing and product usage. Schmitt (2010:17) proposes that organisations should provide customers with products and services that "consistently delight" customers. Schmitt's research suggests that the key to an organisation's growth and profitability is embedded in the customer experience, and that organisations should develop and implement an "experience-focused" deliverable that will add value to the customer. Schmitt (2010:30) proposes a five step CE strategy:

- Analysing the experiential world of the customer (by shifting from an internal focus and involve the customer in developing new products).
- Building the experiential platform.
- Design the brand experience.
- Structure the customer interface (customer visits, interaction).
- Engage in continuous innovation (internally, and externally).

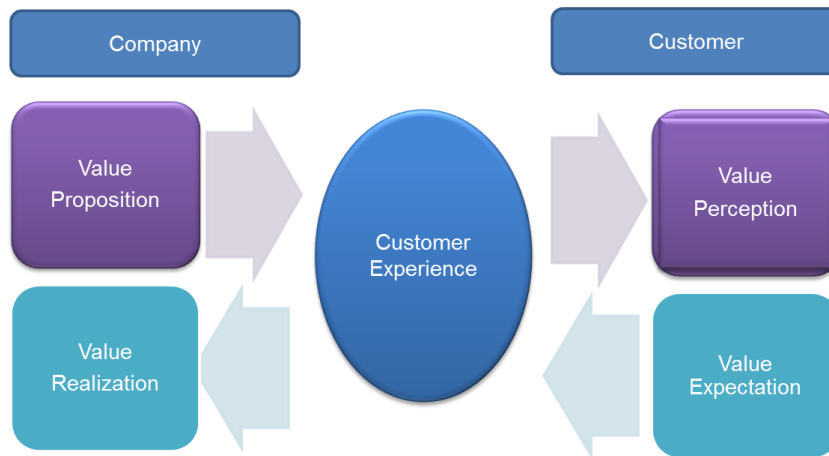
Whereas the traditional marketing strategy focuses on the four P's (price, product, promotion and place), Schmitt (2010:30) stresses that the CE strategy is customer-focused and not product-focused. This implies that organisations should offer more than just marketing and selling. They should focus, interact and get to know the customer more intimately to best be able to understand their business and needs, and to simultaneously partner and collaborate towards a rewarding relationship.

Klaus and Maklan (2013:228) define the customer experience as the “direct and indirect encounters” that a customer has with the organisation. In their research they proved that the customer experience has a positive contribution to customer satisfaction, loyalty and word-of-mouth. This suggests that the customer experience is a true measure of what a customer perceives as value through his/her total experience of acquiring that value. This can be achieved through a direct encounter (known as touch points, such as sales service and advertising), as well as indirect encounter (searching and ease of making contact with the organisation) towards making customers loyal (suggesting repurchase intentions).

Howard (2009) explains that “measuring” the customer experience extends beyond merely evaluating customer satisfaction; it also involves the identification of the touch points and customer encounters along the relationship. Howard (2009) defines a touch point as any interaction or encounter that may influence a customer's perception of an organisation's product, service or brand which extends beyond the point of sale. Organisations should assess all forms of interactions and encounters a customer has, and measure these to evaluate the customer experience level.

Gentile *et al.* (2007:395-410) found that customers want to “live a positive consumption experience”. In their research they tested the customer’s behaviour against the realisation of the value proposition offered by organisations. To increase a customer’s loyalty to the brand, an “emotional tie” should be created by the organisation (Gentile *et al.*, 2007:395-410).

**FIGURE 2-2: Customer experience model**



Source: Gentile, Spiller & Noci (2007:395-410).

Figure 2-2 depicts the framework developed by Gentile, Spiller and Noci. It can be deduced from their findings that an organisation needs to interact positively with the customer to produce a customer experience through the realisation of an organisation’s value proposition. An organisation creates a customer perception of the value proposition (the flow from left to right as depicted in Figure 2-2). The customer, in turn, expects the realisation of this proposition (the flow from right to left as depicted in Figure 2-2). This realisation culminates in a positive customer experience, enhancing customer satisfaction and loyalty.

Mascarenhas *et al.* (2006:397-405) emphasise the importance of delivering customer experience to sustain customer loyalty so as to curb the pressures of globalisation and commoditisation of products. To be able to achieve this, they propose that creating a positive customer experience will lead to improved customer satisfaction levels and loyalty.

Varma (2012:73) claim that mutual success and benefits will be achieved if organisations can match their product and service offering to customer expectations. Meeting the customer expectations creates the customer experience positively. Varma (2012:75) refers to a study which showed that 85% of the business leaders believed that differentiation by price, product and service in itself was no longer a sustainable business strategy, and that 71% believed that the customer experience was the “new battleground” (Varma, 2012:76). In order to be able to gain customer experience organisations need to interact with customers on an emotional level through relationship building. Such customers will be willing to pay premium prices and stay loyal (Varma, 2012:76).

## 2.7. Customer value drivers

Global and local competition put extreme pressure on manufacturers and suppliers to maintain their customer base and market share. Customers have become more price sensitive due to increased competition. The recent recessions and economic downturns forced manufacturers to employ austerity measures to reduce costs and fight the price wars presenting themselves in the market place. For manufacturers to sustain supplier status, Ulaga and Eggert (2006:122) found in their research that respondents focused on three value drivers as presented in the Table 2-1, and explained below:

**TABLE 2-1: Customer value drivers**

<u>Relationship Value Dimension</u>		
<u>Sources of Value</u>	<u>Benefits</u>	<u>Costs</u>
<u>Creation</u>		
<b>Core Offering</b>	Product quality Delivery performance	Direct
<b>Sourcing processes</b>	Service support Personal interaction	Acquisition
<b>Customer Operations</b>	Supplier know-how Time to market	Operation

Source: Ulaga and Eggert (2006:122)

The core offering entails product quality and delivery performance, the objective of which is for the product to meet the customer's specifications and delivery accuracy (when scheduled/needed).

The sourcing processes reveal what customers will value from supplier initiatives through interaction; supply chain services that will save on costs (e.g. offer them consignment stock, quality inspections on site and order handling).

Customer operations refer to operational assistance in providing product know-how, innovation, development and industry changes/demands.

Matthyssens and Vandembemt (2008:316-328) indicate that many organisations who offer commoditised products are shifting to "service-based" marketing. Three value propositions are identified by Matthyssens and Vandembemt (2008:316-328) which will lead to an organisation's competitive differentiation, namely on

- product leadership through superior product innovation and qualities;
- customer linking based on customer bonding and service innovation; and
- cost leadership through the effectiveness and excellence of value chain activities.

Organisations should therefore provide services in addition to product delivery to gain that competitive advantage, or differentiate them from the "commoditised" label. This view is supported by Robinson *et al.* (2002:149-166) who proposes moving away from product- to solution-selling.

Ulaga and Eggert (2006) are of the opinion that price and quality no longer serve as differentiators, but that service support, customer interaction and product technical know-how are factors that set organisations apart in their offering. This view is supported by Auguste *et al.* (2006:41-51), who state that organisations' source of "competitive advantage and strategic intent" is measured by the service delivery offered. They conclude to say that "services will become the differentiator of value creation in coming years". It is clear that the growing tendency is for organisations to customize their offering in ways that will meet and satisfy customer needs through a customer experience that will create customer loyalty.

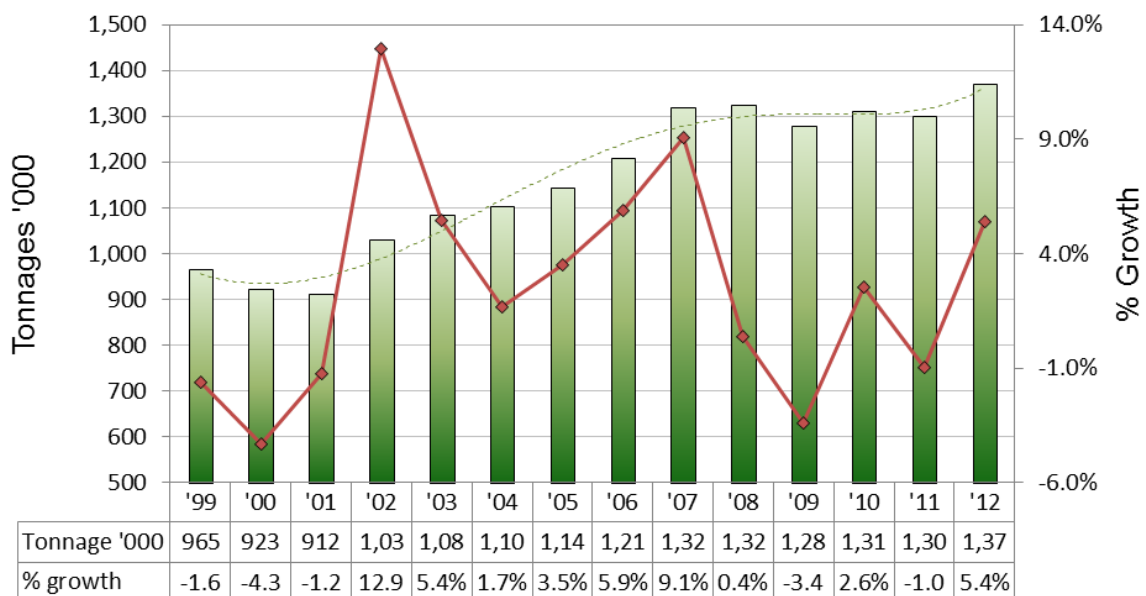
Gebauer and Friedli (2005:70-76) found that managers recognise the economic potential of services as a value-adding benefit, and that managers should be prepared to invest in changes to organisational structure and processes to “build new capacity in the service area”. For organisations to differentiate themselves and gain that competitive advantage, they should invest in creating services that will be adding value to the customer experience.

## 2.8. The South African polymer market

The plastics industry in SA is defined by the conversion of chemicals into various polymers and plastic resins (Singh, 2013). These chemicals (feedstocks) are mainly derived from the coal-to-liquid and gas-to-liquid technologies process, and are characterised by fluctuations in price. Prices are based on global pricing trends.

It is estimated (Plastics SA, 2013) that in 2012 SA consumed around 1.37 million tons (Figure 2-3) of polymers for enhancement into various plastic applications.

**FIGURE 2-3: Estimated annual consumption of virgin plastics**



*Legend: Red line = % growth Bar graph = Volumes*

Source: Plastics SA (2013)

SA has four main manufacturers of certain polymers (Goldwyer 2007) and therefore the sector can be regarded as oligopolistic competition (few players dominating the








market – Lamb *et al.* 2008:101). The high volume polymer manufactured in SA are PVC, LDPE, LLDPE, HDPE and PP (raw material obtained from the coal or gas-to-liquid process), whilst other polymers (such as PET) is produced locally from imported raw materials.

Heightened global competition and free trade have resulted in local manufacturers having to compete fiercely for market share. It is widely accepted that governments impose import duties to either generate additional revenue for its fiscus or to protect some sectors of an industry. An import duty results in a higher price for the imported goods, thus giving the advantage and protection to the local producer from the threat of cheaper imports. Previously the SA polymer industry enjoyed the protection of the state through the imposition of an import duty levy of between 8% and 10%. This levy was reduced systematically from 2008 and completely abolished in 2011 (Customs and Excise Tariff). As a result importers flood the market and put extreme pricing pressures local polymer manufacturers and their customers (converters).

SA represents a small fraction in the global arena (Singh, 2013) and hence has no influence in the global prices of polymer products. Imports of polymer are cheaper than the local manufactured polymer; mainly due to subsidies granted by the country of origin (Singh, 2013), as opposed to stringent laws and regulations governing SA manufacturers (of which none applies to the imported products). As a result the imported polymers are not only of a lower quality in the absence of the stringent laws, but its production cost is also lower due to the subsidies granted (Singh, 2013). Polymer is sold to a market of around 1 200 converters (Goldwyer, 2007) that transform the polymer into plastic products as outlined in Figure 2-4. The polymer conversion is dominated by the packaging sector (54.5%), followed by the building and construction sector with 15.3% for the 2012 year (Plastics SA, 2013).

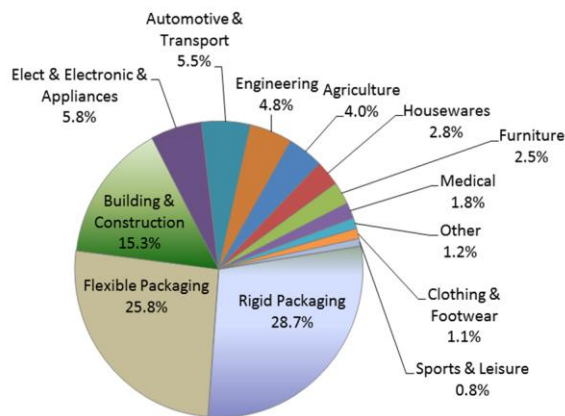
Different types of polymers (Table 2-2) are used in the manufacture of various plastic applications (Plastics SA, 2013).

**TABLE 2-2: Plastic types and applications**

Symbol	Type of Plastic	Properties	Common Uses	Recycled into
 <p>PET</p>	<p><b>PET</b> Polyethylene Terephthalate</p>	<p>Clear, tough, solvent resistant, barrier to gas and moisture, softens at 80</p>	<p>Soft drink and water bottles, salad domes, biscuit trays, salad dressing and containers</p>	<p>Pillow and sleeping bag filling, clothing, soft drink bottles, carpeting, building insulation</p>
 <p>HDPE</p>	<p><b>HDPE</b> High Density Polyethylene</p>	<p>Hard to semi-flexible, resistant to chemicals and moisture, waxy surface, opaque, softens at 75°C, easily coloured, processed and formed</p>	<p>Shopping bags, freezer bags, milk bottles, ice cream containers, juice bottles, shampoo, chemical and detergent bottles, buckets, rigid agricultural pipe, crates</p>	<p>Recycling bins, compost bins, buckets, detergent containers, posts, fencing, pipes, plastic timber</p>
 <p>PVC</p>	<p><b>PVC</b> Unplasticised Polyvinyl Chloride PVC-U Plasticised Polyvinyl Chloride PVC-P</p>	<p>Strong, tough, can be clear, can be solvent welded, softens at 80°C Flexible, clear, elastic, can be solvent welded</p>	<p>Cosmetic containers, electrical conduit, plumbing pipes and fittings, blister packs, wall cladding, roof sheeting, bottles garden hose, shoe soles, cable sheathing, blood bags and tubing</p>	<p>Flooring, film and sheets, cables, speed bumps, packaging, binders, mud flaps and mats, new gumboots and shoes</p>
 <p>LDPE</p>	<p><b>LDPE</b> Low density Polyethylene</p>	<p>Soft, flexible, waxy surface, translucent, softens at 70°C, scratches easily</p>	<p>Cling wrap, garbage bags, squeeze bottles, irrigation tubing, mulch film, refuse bags</p>	<p>Bin liners, pallet sheets</p>
 <p>PP</p>	<p><b>PP</b> Polypropylene</p>	<p>Hard but still flexible, waxy surface, softens at 140°C, translucent, withstands solvents, versatile</p>	<p>Bottles and ice cream tubs, potato chip bags, straws, microwave dishes, kettles, garden furniture, lunch boxes, packaging tape</p>	<p>Pegs, bins, pipes, pallet sheets, oil funnels, car battery cases, trays</p>
 <p>PS &amp; PS-E</p>	<p><b>PS</b> Polystyrene <b>PS-E</b> Expanded polystyrene</p>	<p>Clear, glassy, rigid, opaque, semi-tough, softens at 95°C. Affected by fat, acids and solvents, but resistant to alkalis, salt solutions. Low water absorption, when not pigmented is clear, is odour and taste free. Special types of PS are available for special applications</p>	<p>CD cases, plastic cutlery, imitation glassware, low cost brittle toys, video cases Foamed polystyrene cups, takeaway clamshells, foamed meat trays, protective packaging and building and food insulation</p>	<p>Coat hangers, coasters, white ware components, stationery trays and accessories, picture frames, seed trays, building products</p>
 <p>Other packaging</p>	<p><b>OTHER PACKAGING</b> In packaging, it could be multi-layer materials e.g. PE+PP.</p>	<p>Includes all resins and multimaterials (e.g. laminates). Properties dependent on plastic or combination of plastics.</p>	<p>Automotive and appliance components, computers, electronics, cooler bottles, packaging</p>	<p>Plastic timber, sleepers – looks like wood, used for beach walkways, benches.</p>

Source: Plastics SA (2013).

**FIGURE 2-4: Application of polymer and plastic resins for 2012**



Source: Plastics SA (2013).

From Figure 2.4 it is clear that the plastics industry in SA is extremely diverse with products being supplied to almost every sector in SA.

One of the threats facing the local polymer industry is import parity pricing (Marais, 2012). Import parity means that the locally produced good is priced the same as the (and often cheaper) imported good. Local polymer manufacturers and suppliers need to differentiate themselves on areas that will ensure continued customer commitment and loyalty. To achieve this, customer satisfaction and experience levels need to be maintained through a superior value offering that is perceived of greater value than the commoditised product's price.

## 2.9. Chapter summary

This chapter provided a literature review of the various value differentiating elements that affect customer experience, which ultimately have an impact on the customer satisfaction level – a factor influencing customer loyalty.

The chapter began by discussing the customer value proposition. Various authors reveal that the traditional value proposition of product and quality elements is no longer sufficient to capture the customer's loyalty and repurchase intentions, but that a move to providing a service-based offering is what is setting competition apart.

The concept of customer's perception of value and the value drivers affecting the customer experience, was discussed. The literature shows that, through the value

differentiation elements, customer loyalty and satisfaction levels could be attained and increased, which will secure their willingness to pay a premium. The importance of highlighting the value drivers into the mind of the customer, in order to enhance their perception of value, was mentioned.

Because customer perceptions and experiences change, and because competitors are quick to react to the changing needs, the need to continuously adapt and remain service-focused was highlighted. Because “services will become the differentiator of value creation in coming years”, organisations will need to invest in new capacities to fight off the threat of not only the commoditised product, but also that of the increasing trend of commoditised services.

The chapter concludes by providing a brief synopsis of the current SA polymer market.

Chapter 3 presents the literature review of the empirical research methodology employed, as well as the results of the empirical research.

## **Chapter 3: EMPIRICAL RESEARCH METHODOLOGY AND RESULTS**

*“Science can only ascertain what is, but not what should be, and outside of its domain value, judgements of all kinds remain necessary.”*

- Albert Einstein, *Out of My Later Years*, 1936  
US (German-born) physicist (1879 - 1955)

### **3.1. Introduction**

Chapter 2 provided an overview of the various components that form part of the value differentiation which customers want. For the purpose of achieving the desired objectives of this research, this chapter discusses the research methodology, which includes the questionnaire design, data collection and examination of the source data, as well as the statistical analysis and its results. The data and results will be discussed and presented in tables and figures. All statistical analyses were performed by the North West University’s Statistical Consultation Service, using the software package SPSS 2013.

### **3.2. Research approach**

Welman *et al.*, (2010:6) identifies two approaches to research – the quantitative method and the qualitative method.

The quantitative method (known as the positivist approach) deals with the objective study and measurement of human behaviour for the purpose of formulating laws that applies to populations in order to validate a universal behaviour, e.g. studying the polymer customer to draw on phenomena and explanations for their behaviour. The quantitative approach focuses on scientific and valid measurement phenomena such as randomised and quasi-experiments, standardised tests, multivariate statistical analysis and sample surveys (Welman *et al.*, 2010:135) from the gathered data. Qualitative research is seen as unstructured, subjective and exploratory in nature, as opposed to quantitative research which seeks to quantify data (Malhotra, 2007:143).

Although qualitative research can best explain and provide in-depth information on customer beliefs and attitudes, quantitative research scientifically provides the proof (Kolb, 2008:32-33).

The qualitative method (anti-positivist or phenomenologist) opposes the positivist approach by arguing that the social behaviour is subjective, based on the perception and measurement process of the researcher, rather than the scientific measurement as in the case of a quantitative study (Welman *et al.*, (2010:6).

A positivist approach will be adopted in this research. Quantitative data will be needed to measure the customer satisfaction and experience of the value differentiation elements. This research process involved the issue of a questionnaire that included a rating scale as a measurement tool.

### **3.3. Research design**

Descriptive research focuses on a problem being studied. It describes the variables and its relationships that exist in a given situation (Johnson & Christensen, 2012:366), as opposed to finding the reasons (cause and effect) that affect such problems.

To be able to study or understand a customer's buying habits, descriptive research methodology was used. Such research, according to Wilson (2010:104), describes an "existing or current phenomena". This follows Nargundkar's (2003:24) view, who stated that most marketing research be done by using the descriptive method. Nargundkar's (2003:24) classified such research as longitudinal (research over period of time) or cross-sectional (research done at a point in time of a specific population sample).

To best provide the answers to "the opportunities or threats" of the uncertainty, or of the unknown which exists in a particular industry, descriptive research should be conducted. A cross-sectional study collects information from a given sample of the population and this sample should be representative of the target population (Wiid & Diggines, 2010:55).

Descriptive research can best provide a better understanding of customer behaviour and the relationships between the variables leading to such behaviour (Neelankavil, 2007:134) – this is best achieved through the collection of data in either one of the three approaches of observation; use of surveys; or through longitudinal studies.

This study was in the form of a cross-sectional quantitative descriptive research method by conducting a survey through a questionnaire issued to the participants. The questionnaire was the measuring instrument of the data gathered. The purpose of a questionnaire design is "...to illuminate the subject under investigation...and to give insight into the market place" (Azzara 2010:355). Such data needs to be valid, and obtained by qualified respondents (Azzara 2010:18).

The questionnaires used in the research of Ulaga and Eggert (2006), Vandenbosch and Dawar (2002), and Hill *et al.*, (2012), was adopted and modified to incorporate the value propositions and attributes most probably regarded as value differentiators by polymer customers. The 5-point Likert-scale scoring method was used to in the questionnaire. Participants measured their rating of satisfaction in the following scoring intervals, where:

- 1 = very dissatisfied;
- 2 = somewhat dissatisfied;
- 3 = neither satisfied nor dissatisfied;
- 4 = somewhat satisfied; and
- 5 = very satisfied.

The advantages of using a 5-point Likert-scale system, as stated by Baker *et al.* (2011:42), is the simplicity, flexibility and ease of its use to obtain data which can be summated into a value of score. The concern raised with such a 5-point scale is the central tendency where participants are likely to choose a score of 3 if undecided on a specific question.

A questionnaire (refer Appendix B & C) was designed to obtain the numerical data required. Survey questions were numbered and scored using numerical data to explain the phenomena under investigation. This type of research is relevant in obtaining the necessary answers to address the problem statement of this dissertation.

### **3.4. Study Population**

The sampling method employed was the non-probability quota method. Participants that can be conveniently found, to be representative of the population which have similar characteristics (Jackson, 2011, 102-103; Cummings & Worley, 2008:129) is best obtained from the quota sampling method.

The participants were made up from a select group of customers of one of South Africa's polymer manufacturers and suppliers. They consisted of senior personnel and commercial buyers who have buying decision-making authority of the buying organisation. These participants comprise of a group of large players in the plastics manufacturing industry in SA. For the purposes of this research the buyers of polymer products in the SA polymer market were seen as having the same characteristics, and being representative of the polymer population.

### **3.5. The issue of the questionnaire**

A covering letter was sent to all participants (Appendix A) explaining the purpose of the request for their participation in the research.

The target population consisted of a select group of customers of one of the polymer manufacturers and suppliers in South Africa, most of who consisted of commercial buyers and senior personnel who have authority on the buying decision of the buying organisation. These customers (who are large players in the plastics manufacturing industry in SA) also purchase polymer products (similar and different types) locally and/or abroad via imports; i.e., these customers are common customers to local and overseas competitors. Due to the sensitivity of the industry and its customer base, anonymity and confidentiality was guaranteed.

### **3.6. Data collection and feedback**

To ensure a positive response rate, periodic reminders (via e-mail and telephone calls) were necessary to remind participants of the required deadline.

Completed research questionnaires were returned via e-mail. The data was collated onto a Microsoft Excel spread sheet to facilitate the statistical analysis. The results of the research will be provided to the participants, who showed a keen interest in the aim of this research.

### **3.7. Validity, reliability and Cronbach alpha**

Researchers have to make use of measurement instruments to establish the answers to the problem under investigation accurately in a given situation. As explained by Welman *et al.*, (2010:142), such a measurement instrument needs “to measure that which it is intended to measure”, known as construct validity. The scores from these measurements indicate the “degree to which it measures the intended construct”, or the measurement error.

Data validity of a research questionnaire is intended to measure “that which it is designed to measure”, as stated by Kumar (2010:177-178). Several questions will need to be asked in order to measure less tangible items such as attitude and satisfaction levels (Kumar, 2010:177-178). To cover the concepts being investigated these questions asked should actually measure that what it is designed to measure.

Reliability, as explained by Welman *et al.*, (2010:145), determines whether the research results are credible and if they could be tested upon “close scrutiny”, or if the scores/results would be similar from a repeated research. Such reliability needs to be consistent (i.e., from a repeated research effort). In other words, the research tool and measurement should reveal the same result (Zikmund & Babin, 2012: 257) if the research is replicated.

Cronbach's coefficient alpha estimates 1) the reliability of the measuring scale by determining the internal consistency of the test; or 2) the average correlation of items within the test.

Kline (1999) (as cited by Field, 2009:675) noted that, for ability tests, the cut-off point of 0.7 is more suitable as opposed to the generally accepted value of 0.8, which is more appropriate for cognitive tests (such as intelligence tests). When dealing with psychological constructs, values below even 0.7 can, realistically, be expected because of the diversity of the constructs being measured (Field 2009:675).

In essence, Cronbach's alpha represents the correlation between answered items in the questionnaire. When there is a close correlation, Cronbach alpha will reveal a high score. This view is supported by Andrew *et al.*, (2011:202), who further states that a score above 0.9 would reveal either an incorrect scale being used, or one which is too narrow.

Cronbach alpha coefficient was used to evaluate the reliability (consistency) of the constructs used in the survey, whilst factor analysis was used to measure the construct validity. Field (2007:666) regards scores of 0.7 and higher as being sufficient.

### **3.8. Statistical analysis**

The Statistics Consultation Services department of the North West University was approached to assist with the statistical analysis. The analysis was done using the IBM SPSS Statistics Version 21, Release 21.0.0, Copyright© (SPSS Inc., 2013).

#### **3.8.1. Descriptive statistics**

Descriptive statistics (Welman, 2010:231-232; Tullis & Albert, 2010:24-28) describe the data "without saying anything about the population". Descriptive statistics explain the mean (average of the data scores), the variability (range or scatter around the mean or average), and standard deviation (measure of variability, or spread, or dispersion of data between minimum and maximum points) of the data analysed.

#### **3.8.2. Exploratory factor analysis**

Factor analysis is one of the methods that can demonstrate construct validity, through a series of statistical procedures used to establish the relationship between each other, particularly between a large number of variables (Bryman & Cramer: 2011:320).

Exploratory factor analysis (EFA) (Bryman & Cramer, 2011:319) is one method of examining the relationships between various variables. Factor analysis rearranges the variables into clusters closely associated with each other to reduce the numbers (Nargundkar, 2008:326-334), which aims at establishing the interrelationships (correlations) of the variables in determining their underlying communalities. It looks

at the number of variables to establish the factors that are in common based on the correlation between the variables. Therefore, factor analysis is useful to researchers who wish to reduce the large number of observed items into a smaller number of factors (Begalle, 2008:55). EFA is used to narrow the number of survey items in each measuring scale to establish underlying factors. EFA therefore reduces the dimensions of data which appear to be measuring the same underlying dimension.

An EFA was conducted on the results obtained of the various latent dimensions of customer satisfaction/experience to validate that the questions asked effectively “measure that which it is intended to measure”.

The Principal Axis Factoring extraction method, with direct oblimin rotation, was employed when conducting the factor analysis. Mooi and Sarstedt (2011:202) postulate that, in order to establish communalities that the variables share, Principle Axis Factoring is the best factor analytic procedure to use.

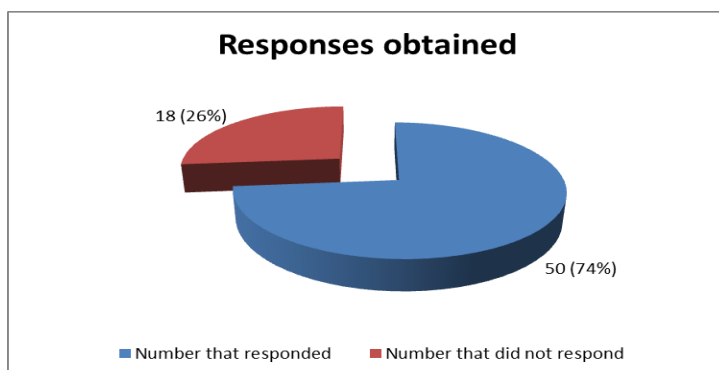
### 3.9. Empirical results and discussion

The results of the study follow the questionnaire as well as the statistical analysis sequence.

#### 3.9.1. Demographic results

From Figure 3-1 it can be observed that, from a total of 68 questionnaires distributed, 50 replies were received. This represents a 74% response rate.

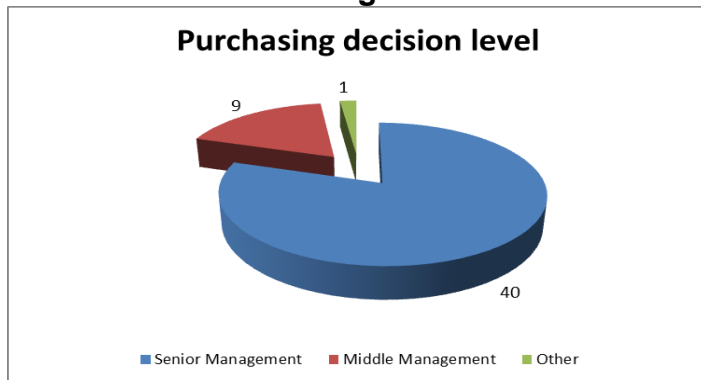
**FIGURE 3-1: Study population**



It was necessary to send out regular reminders (via e-mail and telephone calls) to entice a favourable response rate, such as the 74% achieved.

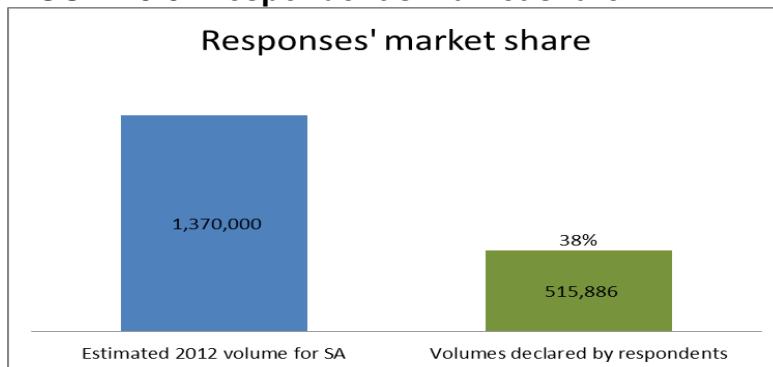
Of the 50 responses received 40 (80%) were from persons on senior management level, 9 (18%) from persons in middle management level, and 1 (2%) in other employment levels, as reflected in Figure 3-2, all of whom have purchase decision making powers.

**FIGURE 3-2: Purchasing decision level**



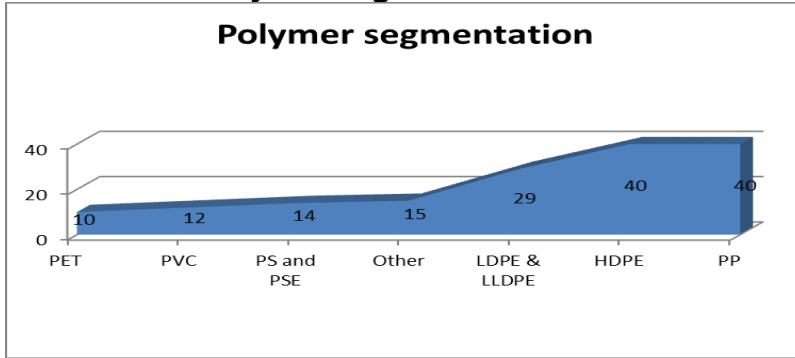
Participants were asked to indicate their annual polymer purchases. This amounted to 515 886 tons, which represents 38% of the 2012 estimated volume polymer consumption (as per Plastics SA, 2013), as depicted in Figure 3-3.

**FIGURE 3-3: Respondent's market share**



The types of polymers purchased are revealed in Figure 3-4 e.g. 40 of the participants buy PP and HDPE, 29 LDPE and LLDPE. The results above show that a fair representation of the customer polymer market by polymer type has been achieved.

**FIGURE 3-4: Polymer segmentation**



It is clear from the responses received that participants' supplier base varies (Figure 3-5) with many participants having multiple polymer suppliers. Respondents surveyed indicated they not only use one supplier, but buy from both local and overseas suppliers; some through agents. By implication this suggests that local polymer customers access both local and overseas markets when sourcing their polymer.

**FIGURE 3-5: Participants' supplier base**



**FIGURE 3-6: Polymer application**

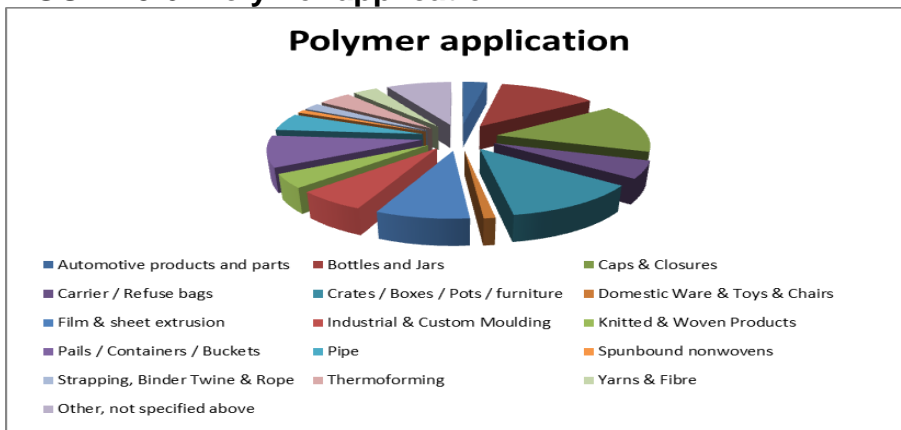


Figure 3-6 shows the various applications resulting from the customers' polymer transformation processes. These results reveal the wide spectrum of supplier base and polymer applications which reflects the diversity in the SA polymer market.

### **3.9.2. Descriptive statistics results**

Descriptive statistics, which show the minimum and maximum scores and the mean and standard deviation, were used to summarise and describe the main features of the data. From Table 3-1 the mean of the customer satisfaction dimensions ranged between 2.96 and 4.60, according to the 5-point Likert scale of measurement used.

Two lowest-scored variables were on "product is competitively priced" (mean of 2.96), and "product development and innovation" (mean of 3.50), as highlighted in red blocks. The top five mean scores, as highlighted in green blocks below, were:

- B1: Supplier accessibility when placing orders (mean of 4.60);
- B6: Product quality (mean of 4.56);
- B2: Supplier order processing efficiency (mean of 4.50);
- B9: Product consistency (mean of 4.44); and
- B23: Professionalism of representative (mean of 4.22).

It can be concluded from Table 3-1 that the mean values of 3.6 to 4.6 indicate that almost all of the respondents showed a strong tendency to being "somewhat to very satisfied" of the current supplier relationship.

The standard deviation reveals the variation (or spread) of scores achieved, based on the Likert-scale measurement used. A standard deviation of 1, or close to 1, from the mean reveals the spread of 1 score either side of the rating scale used, e.g. a mean of 3 (neutral) with a standard deviation of 1 indicates that some would have given a score of 1 below 3, whilst others would give a score of 1 above 3, on average.

All other items showed a standard deviation of 0.8 (rounded and above), which measures a wide spread of scores rated either side of the score attained.

**TABLE 3-1: Descriptive Statistics of customer satisfaction dimensions**

		N	Minimum	Maximum	Mean	Std. Deviation
<b>B1</b>	Supplier accessibility when placing orders	50	3	5	4.60	0.606
<b>B2</b>	Supplier order processing efficiency	50	2	5	4.50	0.707
<b>B3</b>	Supplier order confirmation and feedback	50	2	5	4.06	0.867
<b>B4</b>	Supplier order changes flexibility	50	2	5	3.82	1.004
<b>B5</b>	Product range offered	50	2	5	4.02	0.714
<b>B6</b>	Product quality	50	3	5	4.56	0.577
<b>B7</b>	Product availability	50	2	5	3.90	0.931
<b>B8</b>	Product packaging	50	1	5	4.14	0.990
<b>B9</b>	Product consistency	50	3	5	4.44	0.644
<b>B10</b>	Product is competitively priced	50	1	5	2.96	0.947
<b>B11</b>	Delivery within timeline given	50	2	5	4.14	0.783
<b>B12</b>	Reliability of supply	50	2	5	4.08	0.778
<b>B13</b>	Continuity of supply	50	2	5	4.00	0.926
<b>B14</b>	Supply flexibility	50	1	5	3.80	0.926
<b>B15</b>	Reaction time for rush orders	50	1	5	3.82	1.044
<b>B16</b>	At least 30 day notification of price movements	50	1	5	4.00	1.050
<b>B17</b>	Notification of forecast tonnage allocation	50	1	5	3.84	1.017
<b>B18</b>	Professional and user-friendly correspondence	50	2	5	4.16	0.866
<b>B19</b>	Credit application process	50	2	5	3.98	0.795
<b>B20</b>	Submission of documentation	50	2	5	4.20	0.833
<b>B21</b>	Supply issue reporting and follow up	50	2	5	3.98	0.869
<b>B22</b>	Regularity of customer	50	1	5	3.90	1.015
<b>B23</b>	Professionalism of Representative	50	2	5	4.22	0.887
<b>B24</b>	Helpfulness of Representative	50	2	5	4.18	0.873
<b>B25</b>	Ease of contacting Customer Service	50	2	5	4.04	0.880
<b>B26</b>	Promptness of response to customer queries	50	2	5	4.10	0.909
<b>B27</b>	Technical support offered	50	1	5	4.02	0.979
<b>B28</b>	Information sharing and transparency	50	1	5	3.68	0.935
<b>B29</b>	Resolution to customer complaints	50	2	5	3.98	0.820
<b>B30</b>	Quality of services offered	50	1	5	4.02	0.845
<b>B31</b>	Availability of online information	50	2	5	3.64	0.875
<b>B32</b>	Knowledgeable staff and technical know-how	50	2	5	4.06	0.793
<b>B33</b>	Product development and innovation	50	1	5	3.50	0.995
<b>B34</b>	Accessibility to management and decision makers	50	2	5	3.80	0.904
<b>B35</b>	Brand equity	50	2	5	3.92	0.804
<b>B36</b>	Brand image	50	2	5	3.94	0.843
<b>B37</b>	Company reputation	50	2	5	4.00	0.881
<b>B38</b>	Company financial health	50	2	5	3.94	0.818
<b>B39</b>	Company social responsibility	50	2	5	3.60	0.833
<b>B40</b>	Company leadership structure	50	2	5	3.66	0.823

The lowest variation or deviation related to:

- B6: Product quality (standard deviation: 0.577);
- B1: Supplier accessibility when placing orders (standard deviation: 0.606);
- B9: Product consistency (standard deviation: 0.644);
- B2: Supplier order processing efficiency (standard deviation: 0.707); and
- B5: Product range offered (standard deviation: 0.714).

It can be concluded that the respondents in general scored closely on the above items, and that their satisfaction levels were leaning strongly towards “very satisfied”.

### **3.9.3. Factor analysis results**

Exploratory factor analysis (EFA) (Bryman & Cramer, 2011:319) is one method of examining the relationships between various variables. Factor analysis rearranges the variables into clusters closely associated with each other to reduce the numbers (Nargundkar, 2008:326-334), which aims at establishing the inter-relationships (correlations) of the variables in determining their underlying communalities.

#### **3.9.3.1. Sample Size – KMO**

To establish the appropriateness of the factor analysis, the Kaiser-Meyer-Olkin (KMO) measurement (which is a measure of sampling adequacy) is required. The KMO statistics indicate the ratio of squared correlations between the variables (Field, 2009:647) being measured.

According to Kaiser (cited by Verma, 2012:365) KMO values between 0.5 and 1.0 are seen to indicate that the factor analysis is adequate, whereas values below 0.5 imply that factor analysis may not be appropriate. Although KMO values of 0.5 and above are regarded as adequate, Kaiser’s evaluation thresholds of KMO values (Leimeister, 2010:104) is shown in degree of common variance in Table 3-2 below, which reveal that the higher the score, the more desirable the analysis is.

After conducting the factor analysis on the study results, a KMO score of 0.561, as seen in Table 3-3, was obtained. This score indicates that the sample size of the survey (n=50 respondents) is deemed to be adequate, and that the factor analysis is appropriate.

**TABLE 3-2: Kaiser's evaluation thresholds**

KMO Value	Degree of Common Variance
0.90 to 1.00	Marvellous
0.80 to 0.89	Meritorious
0.70 to 0.79	Middling
0.60 to 0.69	Mediocre
0.50 to 0.59	Miserable
0.00 to 0.49	Don't factor

Despite the “miserable” classification by Kaiser (Table 3-2) on the study’s KMO score of 0.561, a further test was needed, known as Bartlett’s test of sphericity to establish the adequacy of data.

**TABLE 3-3: KMO & Bartlett'**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.561
Bartlett's Test of Sphericity	Approx. Chi-Square	2154.724
	Df	780
	Sig. (p-value)	.000

**3.9.3.2. Data adequacy – Bartlett’s Test of Sphericity**

A further test to see if the factor analysis was appropriate is the Bartlett test of sphericity. Bartlett’s test of sphericity is a statistical measure for the purpose of validating the existence of correlations among the variables by testing if an identity matrix (homogeneity) exists in the population sample. This test is conducted using the Chi Square (Bhakar & Mehta, 2011; Leimeister, 2010:103; Singh, 2007:102). It tests the null hypotheses to see if an identity matrix exists.

The *p-value* (which is a statistic to accept or reject the null hypotheses) determines the probability of the test being true, or false. A *p-value* greater than 0.05 (depending on researcher’s level of significance) will accept the null hypothesis. The factor analysis on the study results revealed a *p-value* of less than 0.0001, which rejects the fact that an identity matrix (homogeneity) exists.

Therefore, the data, based on the sample size surveyed, is deemed as being adequate for this research.

### 3.9.3.3. Total variance of data explained – Eigenvalue

Hinton (2013:306) refers to the eigenvalue as a statistical measure that explains the variance of the items between all underlying factors. The variance of an item, based on a mean of zero and a standard deviation of one, is one. Therefore, in the 40 items surveyed, the total variance would score 40. Hinton (2013:307) explains that only factors whose eigenvalues of greater than 1 should be selected. By doing so, one can establish the degree of variance between the total items within the underlying factors.

The eight factors extracted in the factor analysis (with eigenvalues greater than one) by using the direct oblimin rotation, explained the 77.763% of the total variance (i.e. it explains that 77.763% of the total variance of the data is retained in the eight factors extracted). Table 3.4 which show the eigenvalues.

**TABLE 3-4: Factor Variance**

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	18.618	46.544	46.544
2	2.887	7.216	53.760
3	2.150	5.375	59.136
4	1.865	4.662	63.798
5	1.798	4.494	68.292
6	1.412	3.530	71.822
7	1.228	3.071	74.893
8	1.148	2.870	77.763

What is clear from Table 3-4 is that factor 1 explains 46.54% of the variance of the original variables; factor 2 explains 7.216%; factor 3 explains 5.375%; factor 4 explains 4.662%; factor 5 explains 4.494%; factor 6 explains 3.53%; factor 7 explains 3.071% and factor 8 explains 2.870%. In total all factors cumulatively explaining 77.763% of the total variance.

Lehman *et al.* (2013:498) suggests that researchers should use the cumulative percentage greater than 70%, otherwise alternate regroupings of components may be necessary.

For the purpose of this research the 77.763% cumulative variance score is seen to reflect a good measure.

#### **3.9.3.4. Factor grouping according to the factor loadings**

From the factor analysis, both the KMO and Bartlett's test of sphericity scores reveal that the items are closely correlated, and therefore the factor analysis should result in reliable factors.

Gorsuch (1983) (as cited by Jacobs-Beye, 2008:57) proposes that, in order to conduct an analysis, factor loadings of scores  $\leq -0.4$  and  $\geq 0.4$  (based on a sample size of 100) would be sufficient for the interpretability of the correlations among the factor items.

Hair (1995), as cited by Sobh (2008:234), suggests that scores of  $\pm 0.3$  are considered as "significant value", with scores of  $\pm 0.4$  as of "more significance". The greater the number of either side of the  $\pm$  sign, the higher the significance factor.

Table 3-5 show the 40 variables extracted which were grouped into factors to show the items having the most unique correlations. The factor loadings for each factor have been highlighted for ease of reference. All 40 items loaded are seen as significant with scores greater than  $\pm 0.3$ .

From the factor analysis grouping, the two lowest scores are -0.293 (i.e. rounded to 0.3, factor 8, item B29), and 0.332 (factor 4, item B34). Therefore these two factor loadings would be regarded as significant. The remaining 38 (out of 40) factor loadings are greater than  $\pm 0.4$ , thus categorised to be of more to high significance.

It is noted that some items in Table 3.5 have been loaded into more than one factor, for example item B19 was both loaded on factor one (score 0.635) and factor 4 (score 0.346).

**TABLE 3-5: Factor Pattern Matrix**

	1	2	3	4	5	6	7	8
<b>B20</b> Submission of documentation	.773							
<b>B19</b> Credit application process	.635					.346		
<b>B7</b> Product availability	.617							
<b>B3</b> Supplier order confirmation and feedback	.572							
<b>B2</b> Supplier order processing efficiency	.551							.363
<b>B21</b> Supply issue reporting and follow up	.489						-.351	
<b>B12</b> Reliability of supply	.450			.323				
<b>B30</b> Quality of services offered	.435							
<b>B18</b> Professional and user-friendly correspondence	.372				-.314	.308		
<b>B38</b> Company's financial health		.812						
<b>B40</b> Company's leadership structure		.680						
<b>B33</b> Product development and innovation		.675						
<b>B39</b> Company's social responsibility		.591						
<b>B35</b> Brand equity		.508			-.362	.295	.299	
<b>B36</b> Brand image	.321	.472			-.454			
<b>B6</b> Product quality			.864					
<b>B9</b> Product consistency			.798					
<b>B11</b> Delivery within timeline given				.906				
<b>B15</b> Reaction time for rush orders				.719				
<b>B10</b> Product is competitively priced				.561				
<b>B13</b> Continuity of supply	.372			.453				
<b>B14</b> Supply flexibility				.429			-.420	
<b>B4</b> Supplier order changes flexibility	.319			.355				
<b>B34</b> Accessibility to management		.319		.332				
<b>B25</b> Ease of contacting customer service					-.693			
<b>B24</b> Helpfulness of representative					-.612		-.334	
<b>B26</b> Promptness of response to customer queries					-.569		-.297	
<b>B23</b> Professionalism of representative					-.568	.291		
<b>B22</b> Regularity of customer		.300			-.490			
<b>B37</b> Company reputation		.388			-.474	.306		
<b>B8</b> Product packaging					.399			
<b>B16</b> At least 30 day notification of price movements						.624		
<b>B5</b> Product range offered				.292		.524		
<b>B17</b> Notification of forecast tonnage allocation	.396					.484		
<b>B27</b> Technical support offered							-.767	
<b>B32</b> Knowledgeable staff and technical know-how							-.522	
<b>B31</b> Availability of online information								-.733
<b>B1</b> Supplier accessibility when placing orders				.412	-.327			.424
<b>B28</b> Information sharing and transparency		.321						-.378
<b>B29</b> Resolution to customer complaints								-.293

Where items were loaded onto more than one factor, consideration was given to assess where the item best fits the factor (dimension) grouping. Therefore, where an item had been loaded onto more than one factor, the item with the highest loading was selected.

The factor analysis dealt with the items from the questionnaire section B (Appendix C). The items in the questionnaire were initially grouped into the dimensions of:

- “Order placement and execution” (B1 to B4).
- “Product offering” (B5 to B10).
- “Supply and distribution” (B11 to B15).
- “Administration” (B16 to B21).
- “Customer relationship and inter-activeness” (B22 to B34).
- “Company image” (B35 to B40).

For the purpose of further explanations the questionnaire dimensions will be regarded as latent dimensions and replaced by the eight dimensions as extracted from the factor analysis.

### **3.9.3.5. Factor Analysis classification and descriptive statistics**

The positive Cronbach alpha score (Table 3-14) revealed that the measuring instrument is sufficient and reliable, following the prescribed threshold of Cronbach alpha score above 0.7 as being sufficient (Field, 2007:666).

Furthermore, the factor loadings indicated somewhat significance in the items reflected in the respective eight factors. Therefore, from the eight factors (Table 3-5) that were grouped in the factor analysis, each factor was identified and labelled according to the items reflecting the strongest correlation, and are explained below.

#### **3.9.3.5.1. Factor 1: Administration**

Factor 1 was labelled ADMINISTRATION and included the nine items as stated in Table 3-6. This factor mainly related to administration or administrative items.

**TABLE 3-6: Descriptive Statistics – Administration**

Administration	Description	Mean	Std. Deviation
B20	Submission of documentation	4.20	.833
B19	Credit application process	3.98	.795
B7	Product availability	3.90	.931
B3	Supplier order confirmation and feedback	4.06	.867
B2	Supplier order processing efficiency	4.50	.707
B21	Supply issue reporting and follow-up	3.98	.869
B12	Reliability of supply	4.08	.778
B30	Quality of services offered	4.02	.845
B18	Professional, user-friendly correspondence	4.16	.866

From the latent dimensions used in the questionnaire, items B2 and B3 related to “order placement and execution”; item B7 to “product offering”; B12 to “supply and distribution” and B30 to “customer relationship and inter-activeness”. The respondents regarded these items falling into factor 1 dimension of Administration due to the close correlation attained. The remaining items (B18, B19, B20 and B21) related to “administration” as expected.

The ADMINISTRATION variables’ means ranged from 3.90 (lowest) to 4.50 (highest), which indicate an overall moderate satisfaction level among the respondents. Product availability (B7) elicited the widest variation of response ratings as shown by the highest standard deviation score of 0.931. There is general consensus that the majority of respondents were “somewhat” to “very satisfied” with B2 “Supplier order process efficiency”, as is reflected in the mean of 4.5 with the lowest deviation of 0.707.

### **3.9.3.5.2. Factor 2: Company image**

Factor 2 was labelled COMPANY IMAGE and included the six items as stated in Table 3-7. This factor mainly related to areas linked to the company’s good standing and presence. All items, with the exception of B33, related to the dimension of “company image” as expected. The respondents regarded B33, which related to the latent dimension of “customer relationship and inter-activeness”, as being related to factor 2 dimension of “company image”.

**TABLE 3-7: Descriptive Statistics - Company Image**

Company Image	Description	Mean	Std. Deviation
B38	Company's financial health	3.94	.818
B40	Company's leadership structure	3.66	.823
B33	Product development and innovation	3.50	.995
B39	Company's social responsibility	3.60	.833
B35	Brand equity	3.92	.804
B36	Brand image	3.94	.843

The lowest mean score of 3.50 (which has the highest standard deviation of 0.995) relates to the item “Product development and innovation”; this mean score is midway between a neutral to a somewhat satisfied rating, but it showed the widest variation of responses. Most respondents showed a strong tendency to being almost “somewhat satisfied” with the company’s financial health, brand equity and image.

**3.9.3.5.3. Factor 3: Product Quality**

Factor 3 was labelled PRODUCT QUALITY and included the two items as stated in Table 3-8. This factor mainly related to product quality and consistency of performance.

**TABLE 3-8: Descriptive statistics - Product Quality**

Product Quality	Description	Mean	Std. Deviation
B6	Product quality	4.56	.577
B9	Product consistency	4.44	.644

Both items related to the latent dimension of “product offering” and respondents regarded these two items being related to factor 3 dimension of “product quality”.

The mean scores of 4.44 and 4.56 showed little variation (standard deviation); this shows that there is unanimity of high satisfaction levels by the respondents on product quality offered.

**3.9.3.5.4. Factor 4: Supply and Distribution**

Factor 4 was labelled SUPPLY & DISTRIBUTION – it included the six items as stated in Table 3-9 and related to the supply and delivery components of the value proposition.

**TABLE 3-9: Descriptive statistics - Supply & Distribution**

Supply & Distribution	Description	Mean	Std. Deviation
B11	Delivery within timeline given	4.14	.783
B15	Reaction time for rush orders	3.82	1.044
B10	Product is competitively priced	2.96	.947
B13	Continuity of supply	4.00	.926
B14	Supply flexibility	3.80	.926
B4	Supplier order changes flexibility	3.82	1.004

Item B4 related to the latent dimension “order placement and execution”; B10 related to the latent dimension “product offering” and these items (together with items B11, B13, B14 and B15) were grouped into factor 4 dimension of “supply and distribution”, which respondents regarded as being closely related.

The lowest mean score is 2.96 (B10) and relates to the price of the product, indicating that the respondents’ satisfaction level overall is relatively neutral.

The results show a wide variation in responses in all categories (with the exception of B11 “Delivery within timeline given”), where the standard deviation is between 0.926 and 1.044.

With a standard deviation close to one, an equal number of respondents on both sides of the neutral position were either “somewhat dissatisfied” or “somewhat satisfied”.

#### **3.9.3.5.5. Factor 5: Customer Relationship**

Factor 5 was labelled CUSTOMER RELATIONSHIP and included the seven items as stated in Table 3-10. This factor related mainly to interactions and customer touch points.

Respondents regard item B18 (from latent dimension “order placement and execution”) and B37 (from latent dimension “company image”) to items B22 to B26, all which fall into factor 5 dimension of “customer relationship”, as expected.

**TABLE 3-10: Descriptive statistics - Customer Relationship**

Customer Relationship	Description	Mean	Std. Deviation
<b>B25</b>	Ease of contacting Customer Service	4.04	.880
<b>B24</b>	Helpfulness of representative	4.18	.873
<b>B26</b>	Promptness of response to customer queries	4.10	.909
<b>B23</b>	Professionalism of representative	4.22	.887
<b>B22</b>	Regularity of customer visits	3.90	1.015
<b>B37</b>	Company reputation	4.00	.881
<b>B8</b>	Product packaging	4.14	.990

The mean scores range between 3.90 (B22, “regularity of customer visits”), which also has the largest standard deviation of 1.015, and 4.18 (B24, “helpfulness of representative”).

Except for the “regularity of customer visits” the respondents show a somewhat satisfied level in the customer relationship attributes outlined in factor 5.

### 3.9.3.5.6. Factor 6: Communication

Factor 6 was labelled COMMUNICATION and included the three items as stated in Table 3-11. The items B16 and B17 (from latent dimension of “administration”), and B5 (from latent dimension of “order placement and execution”), are regarded by respondents as being related to factor 6 dimension of “communication”.

**Table 3-11: Descriptive statistics – Communication**

Communication	Description	Mean	Std. Deviation
<b>B16</b>	At least 30 day notification of price movements	4.00	1.050
<b>B5</b>	Product range offered	4.02	.714
<b>B17</b>	Notification of forecast tonnage allocation	3.84	1.017

The lowest mean score of 3.84 refers to B17 (“Notification of forecast tonnage allocation”), closely followed by B16 (“At least 30 day notification of price movements”), both of which yielded the largest standard deviations of answers obtained. The results show that, in general, respondents are just bordering on the “somewhat satisfied” level.

### 3.9.3.5.7. Factor 7: Technical Support

Factor 7 was labelled TECHNICAL SUPPORT and referred to factors including technical support and technical know-how offered by suppliers, as is shown in Table 3-12.

**TABLE 3-12: Descriptive statistics – Technical Support**

Technical Support	Description	Mean	Std. Deviation
B27	Technical support offered	4.02	.979
B32	Knowledgeable staff and technical know-how	4.06	.793

The two items (B27 & B32) originate from latent dimension of “customer relationship and inter-activeness”, regarded by respondents to relate more appropriately to factor 7 dimension of “technical support”.

Results show that the mean scores attained were just over 4, in the “somewhat satisfied” category, with technical support (B27) having the largest variation of answers as is reflected in the standard deviation of 0.979.

### 3.9.3.5.8. Factor 8: Information

Factor 8 was labelled INFORMATION and included the four items as stated in Table 3-13. This factor related mainly to information exchanges and availability.

**TABLE 3-13: Descriptive statistics – Information**

Information	Description	Mean	Std. Deviation
B31	Availability of online information	3.64	.875
B1	Supplier accessibility when placing orders	4.60	.606
B28	Information sharing and transparency	3.68	.935
B29	Resolution to customer complaints	3.98	.820

Items B28, B29 and B31 (from latent dimension “customer relationship and inter-activeness”), and item B1 (from latent dimension “order placement and execution”) were regarded by respondents as being related to factor 8 dimension titled “information”.

B1 (“Supplier accessibility when placing orders”) revealed the highest mean score of 4.60 and lowest variation of answers as shown in the standard deviation of 0.606. This indicates a strong feeling by respondents of very high satisfaction levels in supplier accessibility when placing orders.

Other “information” components (B31, B28 & B29) reveal a neutral attitude by respondents showing a tendency to being “somewhat satisfied”, but standard deviations are reasonably on the high level, indicating a wide variety of answers obtained.

### 3.9.3.6. Reliability measurement - Cronbach alpha

Cronbach alpha coefficient was used to evaluate the reliability (consistency) of the constructs used in the survey. While factor analysis measures the construct validity, Cronbach alpha will measure the internal consistency reliability. Field (2007:666) regards scores of 0.7 and higher as sufficient.

Each factor solution (as grouped in Table 3-5) was subsequently identified and labelled, followed by the calculation of the internal consistency (reliability) by means of Cronbach alpha, to reveal the following results as shown in Table 3-14.

Following the threshold of Cronbach alphas score above 0.7 as being sufficient (Field, 2007:666) it can be seen that the scored on Table 3-14 reveal a strong reliability and consistency of the measuring scale used.

**TABLE 3-14: Cronbach alpha coefficient factor**

Factor	Description	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
1	Administration	.936	.936	9
2	Company Image	.891	.894	6
3	Product Quality	.855	.858	2
4	Supply & Distribution	.889	.890	6
5	Customer Relationship	.893	.899	7
6	Communication	.769	.792	3
7	Technical Support	.886	.897	2
8	Information	.656	.636	4

Although the factor labelled “Information” revealed the lowest score of 0.656 (rounded to 0.7), this is still regarded as being sufficient for the analysis, especially for exploratory research (Field, 2007:668), as is the case with this study. All other factors scored moderately high between 0.769 (communication) to 0.936 (administration).

To conclude, all eight factors scored between 0.7 to 0.9, which are deemed to reveal reliability and consistency between the constructs as they were grouped in the factor analysis.

#### **3.9.4. Correlation coefficients**

To measure the relationship between the extracted constructs (factors) of ADMINISTRATION, COMPANY IMAGE, PRODUCT QUALITY, SUPPLY AND DISTRIBUTION, CUSTOMER RELATIONSHIP, COMMUNICATION, TECHNICAL SUPPORT and INFORMATION, the correlation coefficients were computed using Spearman’s rank order method. The correlation coefficients of the eight factors are shown in Table 3.15.

Salkind (2010:1404) explain that using the Spearman’s method provides for a distribution-free measure (or non-parametric) of correlation between two variables, based on the ranking (ordinal level) of the relationships of the variables, as opposed to Pearson’s method which indicate the strength of the linear relationships between variables. The Spearman method is known as a robust measure, especially for data sets which have a considerable range of values (Salkind, 2010:1405), as is the case with the results computed in the factor analysis in this study.

The correlation measurement can be a positive (showing a direct relationship) or negative (showing the inverse relationship). A perfect direct or inverse relationship will yield a score of  $\pm 1$  respectively (Welman *et al.*, 2010:234). A zero correlation indicates that there is no visible relationship.

**Table 3-15: Spearmann’s rho: Correlation coefficients**

Spearmann rho		Adminis- tration	Company Image	Product Quality	Supply Distri- bution	Customer Relations	Communi- - cation	Tech- nical Support	Infor- mation
Adminis- tration	Correlation Coefficient	1.000	.541**	.414**	.771**	.753**	.669**	.612**	.611**
	Sig. (2-tailed)		.000	.003	.000	.000	.000	.000	.000
Company Image	Correlation Coefficient	.541**	1.000	.219*	.481**	.691**	.491**	.553**	.678**
	Sig. (2-tailed)	.000		.127	.000	.000	.000	.000	.000
Product Quality	Correlation Coefficient	.414**	.219*	1.000	.315*	.443**	.333*	.469**	.398**
	Sig. (2-tailed)	.003	.127		.026	.001	.018	.001	.004
Supply Distribution	Correlation Coefficient	.771**	.481**	.315*	1.000	.716**	.658**	.553**	.634**
	Sig. (2-tailed)	.000	.000	.026		.000	.000	.000	.000
Customer Relationship	Correlation Coefficient	.753**	.691**	.443**	.716**	1.000	.642**	.681**	.682**
	Sig. (2-tailed)	.000	.000	.001	.000		.000	.000	.000
Communi- cation	Correlation Coefficient	.669**	.491**	.333*	.658**	.642**	1.000	.470**	.466**
	Sig. (2-tailed)	.000	.000	.018	.000	.000		.001	.001
Technical Support	Correlation Coefficient	.612**	.553**	.469**	.553**	.681**	.470**	1.000	.617**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.001		.000
Information	Correlation Coefficient	.611**	.678**	.398**	.634**	.682**	.466**	.617**	1.000
	Sig. (2-tailed)	.000	.000	.004	.000	.000	.001	.000	

\*\* correlation is significant at the 0.01 level (2-tailed)

\* correlation is significant at the 0.05 level (2-tailed)

The effect size measures the strength of the relationship between the eight constructs, and this measure is regarded as important. Cohen (1969), as cited by Ricketson (2008:47), categorises the effect sizes of correlation as follows:

- small effect size, where  $r = 0.10$
- medium effect size, where  $r = 0.30$
- large effect size, where  $r = 0.50$ .

Based on the correlation coefficient ( $r$ ) in Table 3-15, and the effect size criteria, there is statistical significant correlations between all eight factors, with the exception

of Product Quality and Company Image, both which reflect a small size effect, while the balance reveal a medium to large size effect.

From Table 3-15 a strong positive relationship exists between most of the eight constructs. The closer the number is to 1, the stronger the relationship. The “Company Image” and “Product Quality”, although positive, revealed a weak correlation against each other, as highlighted in red in Table 3-15.

### **3.9.5. Conclusion**

The empirical study and results, together with some literature review on research methodology, were presented in this chapter.

A brief literature review was given to each component of the research methodology used, which included the research design, the sample population, validity and reliability of the questionnaire used, the collection of data, the statistical analysis and factor analysis employed in this study.

The first section of the results explained the polymer customer demographics of the 50 (74%) respondents, which indicated that 49 (98%) of the questionnaires were completed by respondents who occupied middle to senior management level positions and who had purchase decision-making authority. The demographics indicated that the polymer customers surveyed purchased polymer from a wide supplier base, both locally and abroad, directly and or via agencies.

Secondly, the responses revealed a collective estimate of 38% (by volume) of the SA polymer market which took part in the survey – customers who transform the polymer purchased into a wide range of plastic applications sold nationally and exported.

Thirdly, the results show that, in general, customers are above the neutral zone in their satisfaction levels, leaning strongly to levels of “somewhat” to “very satisfied” with the value differentiation factors on offer by current polymer suppliers. This, however, suggests that the polymer industry is quite competitive, and that suppliers in general have essentially commoditised the value services over and above the

product and price derivatives. It was found that the lowest scoring element was on price – customers had low levels of satisfaction in this rating.

Findings revealed that the three lowest scoring dimensions are those of “Company Image”; “Supply and Distribution” and “Information”, all of which scored on average below the “somewhat satisfied” level rating of 4. Suppliers who seek that added competitive advantage should find ways to improve on these key elements within these dimensions.

Recommendations will be provided in Chapter 4, together with suggesting areas of future research.

### **3.9.6. Chapter Summary**

The empirical research methodology and results are reported and discussed in the chapter in terms of the quantitative data.

A self-administered questionnaire, adapted from the previous research of Ulaga and Eggert (2006), Vandenbosch and Dawar (2002) and Hill *et al.* (2012), was e-mailed to 68 participants, of which 50 returned via reply e-mail, representing a response rate of 74%.

The factor analysis computed eight factors, which accounted for 77.763% of the total variance. The eight factors were labelled accordingly to Administration, Company Image, Product Quality, Supply & Distribution, Customer Relationship, Communication, Technical Support and Information.

The KMO and Bartlett’s test of sphericity tested the appropriateness and adequacy of the data and sample size. The Cronbach alpha coefficients revealed strong measures of reliability and consistency of the measuring scale used in the survey.

In Chapter 4 the conclusions are come to from the empirical results obtained, followed by proposed recommendations based on the literature review and the empirical research. Opportunities for future research are suggested after highlighting some limitations pertaining to the study.

## **Chapter 4: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

*You have to learn the rules of the game.  
And then you have to play better than anyone else.*

- Albert Einstein  
US (German-born) physicist (1879 - 1955)

### **4.1 Introduction**

The aim of this chapter is to provide conclusions to the results of the empirical study. The conclusions derived at are based on the literature review together with the results of the descriptive statistical and factor analysis. The recommendations suggested are based on the literature review and conclusions of the empirical research. Lastly, the chapter will also identify the limitations with regard to this research, and opportunities for future research are suggested.

### **4.2 Conclusions derived from the literature review**

The primary objective was to evaluate the importance of value differentiation in the minds of the SA polymer customer as a perceived value by measuring the actual customer experience. The secondary objective was to identify the value differentiation elements as a perceived value by means of conducting a literature review. To have achieved this, the contextualisation of what constitutes value differentiation was identified through reference to past research and literature on this topic.

The harsh competitive environment in which organisations find themselves has forced organisations to extend their value proposition to beyond the mere supply of a product or service, but to include activities that positively influence the customer experience (Baker, 2010:146). Activities such as technical know-how, customer relations, product development (Kotler & Armstrong, 2012:561), among others, can enhance customer loyalty (Ferrell & Hartline, 2011:245) and increase customers' perception of value.

However, as competitors catch up to the trend of what is being offered, value adding services become the norm (or better referred to as being commoditised). Organisations thus need to reinvigorate their service offering by doing something that is unique and different from their competitors (Porter, 2008:120); setting them

apart from the competitors in a way that is meaningful to customers (Dodds, 2003:171). To be able to achieve this, a clear understanding of the organisation's value chain, and that of its customer, will ensure a value differentiation that will benefit both parties, such as in the way products are ordered, delivered and which satisfy the customer's expectations (Porter, 2008:130-134). The more connections that both the supplier and customer value chains have, the higher the value differentiation the supplier exerts on the customer.

But the value chain consolidation between supplier and customer, although regarded as a strong differentiator, is not enough on its own. Organisations need to develop customer relationships that will result in building customer loyalty through improved customer satisfaction levels (Kotler *et al.*, 2012:44; Yee & Xian, 2012:49-66). Satisfied customers tend to be less price-sensitive (Herrmann *et al.*, 2001; Homburg *et al.*, 2005; Duke *et al.*, 2006) which results in their willingness to pay.

To be able to satisfy customers, organisations need to develop or promote the customer's perception of value (Dodds, 2003:171; Verma, 2007; Saxena, 2009:143-156) by promoting the total benefits of the marketing offer. Many customers may understand the impact of the benefits of value chain initiatives, but unless the added benefits such as technical services and customer relationships are clearly understood by the customer, the customer's perception of value will negatively impact on the price paid or valued by the customer (Porter, 2008:139; Verma, 2007:65-66; Ritter & Walter, 2012:136-144). Therefore, customers' perception of value needs to be positively influenced by explaining and detailing the benefits of the host of value adding services being offered in the marketing proposition.

A positive customer experience resulting from the direct and indirect encounters a customer has with the organisation (Klaus & Maklan, 2013:228) promotes the customer's satisfaction levels and loyalty, which ultimately influences a customer's purchase decision (Schmitt, 2010:17). To improve on the customer experience, organisations need to develop, assess and improve on the customer interactions or touch points (Howard, 2009) so that the customer's expectations on the value proposition can be fully met (Gentile *et al.*, 2007:395-410; Mascarenhas *et al.*, 2006:397-406; Varma, 2012:73). It will benefit the organisation if, every time a

customer has contact with the organisation such as on order placement, information sharing, correspondence and customer visit, that this contact or touch point is a pleasant and worthwhile experience for the customer.

No longer is the competitive advantage organisations have based on the quality of a product. Most products are regarded as commodities (readily available for which there are many substitutes) which makes the customer's buying choice easy. The only way organisations can survive the commoditised stigma is by offering services and customer interactions that positively influence the customer experience through the fulfilment of customer expectations, thereby increasing their satisfaction level, loyalty and willingness to pay (Ulaga & Eggert, 2006; Matthyssens & Vandenbempt, 2008:316-328).

It is clear that services will become the value differentiator in the highly competitive environment. Customers will willingly pay a premium for a product that is readily available to a supplier who fulfils a positive customer experience through a value differentiation that outclasses that of its competitors. A customer satisfaction survey is a means to periodically measure the customer experience.

#### **4.3 Conclusions derived from the empirical study and results**

To achieve the main objective of this study, the customer experience of the value differentiation elements offered by suppliers was evaluated. As a secondary objective, an assessment was made through descriptive statistical analysis and factor analysis of the accuracy and reliability of the questionnaire used. The conclusions will follow the structure of the research methodology and the results of the questionnaire answers.

##### **4.3.1 Conclusions regarding the research methodology**

The descriptive research approach was regarded as the best approach to study a specific problem (Johnson & Christensen, 2012:366), or to describe an existing or current phenomena (Wilson, 2010:104) in order to obtain the answers to the unknown (Wiid & Diggines, 2010:55). The research was conducted in the form of a questionnaire which was the measuring instrument (Azzara, 2010:18), using the 5-point Likert scale rating system for the purpose of understanding the subject under

investigation. The descriptive research took the form of a questionnaire issued to customers to measure their satisfaction level on various value identified drivers.

#### **4.3.2 Conclusions regarding the study population and demographics**

The study population consisted of 50 (74%) respondents from a select group of 68 participants approached, who are customers of one of the main polymer manufacturers and suppliers in SA. Most of these customers also purchase a wide variety of polymer from various other suppliers. Forty (40 = 80%) of the respondents occupied senior management positions, nine (9 = 18%) middle management positions and one who occupied another employment level; all of whom have purchase decision making powers.

Although the sample size may seem small, the total polymer purchasing figure declared represented 38% (Figure 3-3) of the 2012 estimated SA polymer volume consumption declared by Plastics SA (2013).

The results also show that the respondents purchase polymer from both local and overseas suppliers for use in a wide variety of plastic applications (Figure 3-5 and Figure 3-6).

#### **4.3.3 Conclusions regarding the validity and reliability of the questionnaire**

To determine whether the results of the questionnaire are credible, a questionnaire needs to be reliable and consistent (Welman *et al.*, 2010:145; Kumar, 2010:177-178), and should reveal similar results if the research is replicated (Zikmund & Babin, 2012:257).

Cronbach alpha estimates the reliability of the measuring scale used by determining the internal consistency of the test, or it estimates the average correlation of the items within the test. A Cronbach alpha score of above 0.7 is regarded as sufficient (Field, 2007:666). The Cronbach alpha scores obtained ranged from 0.7 to a high of 0.936 (Table 3-14). It is therefore concluded that the questionnaire used to measure the customer satisfaction level has acceptable reliability.

After conducting the factor analysis, the sample size and data adequacy was calculated to establish the appropriateness of data, followed by the calculation of a Spearman correlation between the variables.

The sample size was calculated using the KMO measurement (section 3.9.3.1), which revealed a score of 0.561 that validates the sample size as being adequate (Verma, 2012:365). A further test to validate the existence of correlations among the variables, known as the Bartlett's test of sphericity, is to establish if there is an identity matrix (homogeneity) within the population sample. The p-value score of 0.0001 rejects the fact that an identity matrix exists (Bhakar & Mehta, 2011; Leimeister, 2010:103; Singh, 2007:102). It is concluded that both the sample size, and the fact that no homogeneity exists, is adequate for the research conducted.

Salkind (2010:1404) explains that using the Spearman method provides for a distribution-free measure (or non-parametric) of correlation between two variables and is known as a robust measure. The results reveal a positive correlation between the variables (Table 3-15).

#### **4.3.4 Conclusions regarding the factor analysis**

Hair (1995), as cited by Sobh (2008:234), suggests that scores of  $\pm 0.3$  are considered as "significant value" and scores of  $\pm 0.4$  as "more significant". The greater the number on either side of the  $\pm$  sign, the higher the significance factor.

Table 3-5 shows the 40 items extracted (grouped) into factors to show the items having the most unique correlations.

The results from the factor analysis revealed that two items scored -0.293 (i.e. rounded to 0.3, factor 8, item B29), and 0.332 (factor 4, item B34). Therefore these two factor loadings would be regarded as significant. The remaining 38 items (out of 40) factor loadings scored greater than  $\pm 0.4$ , thus categorising them to be more to high significance.

The eight factors identified are classified accordingly to represent the 8 value differentiation dimensions (refer section 3.9.3.5).

#### 4.3.5 Recommendations from the results of the eight dimensions identified

1. Factor 1 was labelled ADMINISTRATION and mainly related to administration or administrative items (Table 3.6, page 46). The means ranged from 3.90 (lowest) to 4.50 (highest), which indicate an overall moderate satisfaction level among the respondents. Product availability (B7) elicited the widest variation of responses' ratings, as is shown by the highest standard deviation score of 0.931. There is general consensus that the majority of respondents were "somewhat" to "very satisfied" with B2: "Supplier order process efficiency", as is reflected in the mean of 4.5 with the lowest deviation of 0.707.

**Recommendation:** The lowest scoring variables in Administration indicate opportunities which organisations can focus on and include the items such as "Product availability", "Credit application process", "Supply issue reporting and follow up" and "Quality of services offered". Organisations must implement order confirmation messages to adequately inform the customer of the product availability after order placement. Furthermore user-friendly documentation and correspondence should be developed – this can be achieved by benchmarking or obtaining the services of a reputable institution. Organisations should also measure order processing efficiencies on a continuous basis and identify areas for improvement.

Organisations seeking to improve the differentiation factor need to create a positive customer perception (Dodds, 2003:171; Verma, 2007:65-66 & Saxena, 2009:143-156) of the administrative functions, such as providing documentation (e.g. invoices and statements) on time; ease of order processing and fulfilment; supply issues feedback and professional and friendly correspondence that will keep customers on track on the fulfilment of their expectations (Blackwell *et al.*, 2006; Gentile *et al.*, 2007:395-410). The administrative service attributes are important to customers (Dodds, 2003:171) and the positive experience created in the buy-supply transaction will be a differentiating advantage to suppliers (Baker, 2010:145; Anderson *et al.*, 2006:91; Kotler & Armstrong, 2012-561; Schmitt, 2010:30).

2. Factor 2 was labelled COMPANY IMAGE and related to areas linked to the company's good standing and presence (Table 3.7, page 47). The lowest mean score of 3.50 (with the highest standard deviation of 0.995) relates to the item "Product development and innovation"; the mean score is midway from a neutral response to being "somewhat satisfied", but showed the widest variation of response. Most respondents had a strong tendency to being almost "somewhat satisfied" with the company's financial health, brand equity and image.

**Recommendation:** "Company Image" was the lowest scoring dimension and included items reflecting a company's financial position, leadership structure, product development and innovation, social responsibility, brand equity and image. Organisations need to improve on these variables in efforts to gain greater stature to create a positive customer perception.

In today's volatile and competitive environment, reputable suppliers will gain the advantage over competitors by the way they represent themselves in the market. An organisation's leadership, financial strength, social responsibility programmes, product development and innovation, and brand image are value attributes perceived as benefits by customers (Verma, 2007:65-66; Schmitt, 2010:30).

Ways in which organisations can portray a positive image is to publish events and actualities in local and regional publications, to invest in product development and innovation with technology partners, and to inform customers of technology developments.

3. Factor 3 labelled PRODUCT QUALITY related to product quality and consistency of performance (Table 3.8, page 48). The mean scores of 4.44 and 4.56 showed little variation (standard deviation) and shows that there is unanimity of high satisfaction levels on product quality.

**Recommendation:** There is general consensus that product quality and consistency is if a high standard and that customers are happy with the polymer products on offer in the marketplace.

There is little doubt that product quality is a core benefit customers seek when purchasing product (Ulaga & Eggert, 2006:122; Porter, 2008:120; Anderson *et al.*, 2006:91; Dodds, 2003:171). Polymer manufacturers and suppliers need to continue their effort by providing consistent product quality to the market and strive to outperform the commodity status (Kotler, 2012:44) linked to polymer products.

Organisations should implement strict quality control to ensure that product reliability and consistency meets the required standard, and that products which fall outside the compliance criteria should be rejected. Proper batch control will ensure traceability to tests and results should a customer encounter production difficulty, which at times may not be product related, but operation related (e.g. machine condition and process).

4. Factor 4 was labelled SUPPLY & DISTRIBUTION and related to the supply and delivery components of the value proposition (Table 3.9, page 50). The lowest mean score is 2.96 (B10) and relates to the price of the product, indicating that the respondents' satisfaction level overall is relatively neutral. The results show a wide variation in responses in all categories with the exception of B11, "Delivery within timeline given", where the standard deviation is between 0.926 and 1.044.

**Recommendation:** Supply and distribution dimension and its variables neighbour on a low scoring average. Needless to say, customers will always negatively mark "price" on offer, but the effectiveness of supply flexibility and reaction to rush orders need attention and is an opportunity for organisations to focus on.

Supply and distribution is a core offering customers seek when purchasing their products (Ulaga & Eggert, 2006:122; Kotler & Armstrong, 2012:561; Ritter & Walter, 2012:136-144). Polymer suppliers who best utilise the value chain (Porter, 2008:120; Robinson *et al.*, 2002:149-166) by ensuring effective on-time order fulfilment, flexibility and delivery, will capture a positive customer experience (Baker, 2010:145; Anderson *et al.*, 2006:91; Kotler & Armstrong, 2012:561; Schmitt, 2010:30), resulting in customer loyalty and satisfaction.

Organisations should clearly communicate the service agreement to customers to ensure a proper understanding experienced regarding supply lead times and conditions. It may become necessary to accommodate urgent customer supply orders. Organisations should plan production levels to incorporate safety stock levels by implementing accurate customer forecast and production planning.

5. Factor 5 was labelled CUSTOMER RELATIONSHIP and related mainly to interactions and customer touch points (Table 3.10, page 49). The mean scores range between 3.90 (B22, “regularity of customer visits”), which also has the largest standard deviation of 1.015, and 4.18 (B24, “helpfulness of representative”). Apart from the “regularity of customer visits” the respondents show a “somewhat satisfied” level in the customer relationship attributes outlined in factor 5.

**Recommendation:** Regularity of customer visits, company reputation and ease of contacting customer services are variables that affect the customer touch points (Howard, 2009; Klaus & Maklan, 2013:228; Schmitt, 2010:30) which impact on the customer experience (Gentile *et al.*, 2007:395-410; Baker, 2010:145; Anderson *et al.*, 2006:91, Mascarenhas *et al.*, 2006:397-405). The results show that some headway can be made to close the gap to a higher satisfaction level, especially on items that scored a high standard deviation.

Suppliers should ensure customer visits are conducted regularly and professionally, and that representatives react promptly to customer enquiries. It is recommended that organisations provide representatives with the necessary training and techniques on customer interaction and relationship building, ideally through external workshops and relevant training courses.

6. Factor 6 was labelled COMMUNICATION (Table 3.11, page 49). The lowest mean score of 3.84 refers to B17 (“Notification of forecast tonnage allocation”), closely followed by B16 (“At least 30 day notification of price movements”), both of which yielded the largest standard deviations of answers obtained. The results show that in general respondents are just bordering on the “somewhat satisfied” level.

**Recommendation:** Communication was another dimension that was scored relatively low and shows that customers value communications, especially relating to price movements and forecast volume highly. As customers have free access to information globally, organisations need to be responsive to customer needs in this ever changing competitive environment. The quicker the communication to the customer can take place, the more appreciative a customer becomes in the buy-supply relationship (Vandenbosch & Dewar, 2002:35-42; Ritter & Walter, 2012:136-144).

Organisations should focus on innovative ways to communicate important information within required deadlines. Use of technology that is in line with customer means of communication will be beneficial (e.g. e-mails, online communication via website, use of smartphone and tablets to facilitate faster response communication).

7. Factor 7 was labelled TECHNICAL SUPPORT and referred to factors including technical support and technical know-how offered by suppliers (Table 3.12, page 51). Results show that the mean scores attained were just over 4, in the “somewhat satisfied” category, with technical support (B27) having the largest variation of answers as is reflected in the standard deviation of 0.979.

**Recommendation:** Although customers seemed “somewhat satisfied”, the variation between the responses was relatively high, establishing the fact that opportunities exist for organisations to focus on technical support and train their staff on technical know-how so as to be of better service to their customers.

Customers value the technical support and know-how suppliers provide as a service, and organisations excelling in providing these value-adding services will differentiate strongly to obtain the competitive advantage (Baker, 2010:145; Anderson *et al.*, 2006:91; Kotler & Armstrong, 2012:561; Porter, 2008:120; Schmitt, 2010:30; Klaus & Maklan, 2013:228).

Organisations should ensure the technical team pay regular customer visits to discuss and enquire about recent developments, both dealing with customer and industry levels. This sharing of information allows for technical solutions to be sought or applied as required.

8. Factor 8 was labelled INFORMATION and related mainly to information exchanges and availability (Table 3.13, page 52). B1 (“Supplier accessibility when placing orders”) revealed the highest mean score of 4.60 and lowest variation of answers as shown in the standard deviation of 0.606. This indicates a strong feeling by respondents of very high satisfaction levels in supplier accessibility when placing orders. Other “information” components (B31, B28 & B29) reveal a neutral attitude by respondents showing a tendency to being “somewhat satisfied”, but standard deviations are reasonably on the high levels, indicating a wide variety of answers obtained.

**Recommendation:** The current customer experience is neutral. Information variables such as online information; information sharing and transparency; and resolution to customer complaints reveal that organisations should focus on improving this proposition. By doing so organisations will create a positive customer experience (Baker, 2010:145; Anderson *et al.*, 2006:91; Varma, 2012:75; Kotler & Armstrong, 2012-561; Schmitt, 2010:30; Mascarenhas, 2006:397-405) that will result in enhanced satisfaction levels to give organisations the added competitive advantage in the market place.

Regular and professional communication through professional correspondence and customer visits are essential information building pillars. Latest technologies, such as website design and the use of smart phones, can assist in accessing and providing the customer information when desired.

#### 4.4 Limitations of the study

The Polymer manufacturing industry in SA, which consists of an oligopoly of four main players, is a rather sensitive in nature. As a result, this research was confined to a select group of participating customers selected from one of the main polymer manufacturers.

Although results of the study may not be relevant to the total SA polymer market, the inputs of the participants (being market leaders in the converting industry) can be seen as an accurate reflection of the industry at large.

Another limitation is that no causality could be established to the customer's satisfaction level. This is due to the fact that the questionnaire was designed by identifying the elements upon which customer satisfaction experience could be measured; as opposed to finding the reasons (cause) that impact on the customer's satisfaction level.

The conceptualisation of what polymer customers perceive as value was not addressed in this study. Rather it focused on measuring the customer satisfaction level on existing value attributes that make up the value proposition. The study also did not assess whether customers would in fact pay differentiated prices for differentiated value propositions offered. Further research in this regard is recommended.

A further limitation in this research is that because of the sensitivities within this industry, no distinction was made to cases where polymer supplies were made from multiple suppliers. The purpose was thus not to evaluate the individual suppliers separately, but to evaluate the overall customer experience of the polymer suppliers with whom customers had dealings with; i.e., no distinction was made between local and foreign supply dealings with customers to assess which provide the better customer experience. Because no distinction was made to measure any specific supplier, it makes it difficult to assess which supplier could improve from the results of this study. Further research is therefore recommended.

#### **4.5 Managerial implications**

The limitations listed in section 4.4 above should be considered when adjudicating the results of this study. The findings reveal a point of departure from which managerial decision-making on value propositions can be restructured to suit a differentiated offering to give that competitive edge organisations seek. This study

shows that polymer customers appreciate value adding services as part and parcel of the customer-supplier relationship.

Managers will need to translate the theory and recommendations provided to aid them in addressing the current shortfalls in their value proposition which customers expect to be realised. Managers need to take cognisance of the fact that polymer products are commodities which are readily available at the required level of quality and consistency. To capture the customer's mind and infuse a "preferred polymer supplier" status, managers will need to focus on value differentiation as the factor to give them the competitive edge.

It is by no means implied managers can merely implement the recommendations provided to obtain the competitive advantage. Instead it is advised that managers conduct their own independent survey to assess their scorecard within their customer base by including elements which they regard as value differentiating factors in their current proposition.

#### **4.6 Suggestions for further research**

This study was conducted to evaluate the customer's experience of the polymer suppliers' value differentiation. No distinction was made to establish the differences between the specific local and overseas suppliers, or between suppliers in the local or overseas domain. Further research is recommended to measure these differences for those interested in establishing such differences.

It is suggested that further research be conducted on a larger population sample, preferably in excess of 120 participants.

The findings may entice future research by interested academics and practitioners alike, especially in the field of the customer experience and the role it plays in services as differentiating factor.

#### **4.7 Assessment of study objectives**

The study objectives outlined in Chapter 1 consisted of primary and secondary objectives. The attainment of these objectives is summarised as follows:

#### **4.7.1 Primary objective**

The primary objective was to evaluate the importance of value differentiation in the minds of SA polymer customers as a perceived value by means of measuring the actual customer experience against the value differentiation elements offered by suppliers. This objective was attained and is explained in Chapter 3, which details the research methodology, followed by the results of the empirical study.

#### **4.7.2 Secondary objectives**

In support of the primary objective, the secondary objectives were:

- To identify and define the elements that constitutes the term “value differentiation” and its association with “customer perceived value”; and to conduct a literature review to gain insight on value differentiation and how its attributes contribute to higher price acceptance. This objective was achieved in Chapter 2, and links of the theory to the conclusions and recommendations were made in Chapter 4, as summarised in section 4.2.
- To assess the accuracy and reliability through statistical analysis of the questionnaire used. This objective was met and is explained in Chapter 3 (sections 3.7 and 3.9.3.6) and a brief summary is given in Chapter 4 (section 4.3.3).
- To suggest practical recommendations to Polymer manufacturers and suppliers on how to enhance value differentiation as a means to motivate its higher price over cheaper imported price threats. Chapter 4 (section 4.3.5) meets this objective.

#### **4.8 Chapter Summary**

The findings of the literature review and the empirical results were provided in this chapter, from which conclusions were derived. Recommendations on the eight dimensions identified in the factor analysis were linked to the literature review.

Recommendations were based on the results obtained, followed by a discussion on the limitations of the study. Managerial implications and suggestions for further research were discussed.

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## **Appendix A: Covering Letter**

Dear Polymer Customer

My name is Joao (Johnny) Gabriel Fernandes Neri and I am a MBA graduate student at the Potchefstroom Business School of the North West University (PBS). As part of the requirements set for the MBA degree, I am required to submit a mini-dissertation. The topic of my chosen research is ***“Evaluating value differentiation in the South African polymer market.”***

Because you are operating within the polymer industry in South Africa, I am inviting you to kindly participate in this research study by completing the attached questionnaire. Your participation will be greatly valued, and I look forward to your response.

Kindly take note of the following should you decide to participate in the survey:

- Confidentiality is ensured. **No reference will be made to any specific polymer supplier or customer by name, and no such information is asked in the questionnaire.**
- The survey pertains to **all** of your polymer suppliers in general, both local and overseas suppliers. It may be difficult to assess your experience on multiple suppliers, but I ask that you score the questionnaire on your overall opinion of your polymer purchasing experience.
- The findings of the survey will best serve the polymer industry by allowing the polymer suppliers to focus on attributes that are regarded as important to the polymer customer.
- The findings of the survey will be available by requesting same from me or my supervisor at the PBS (details below).
- By participating in the survey you will be doing so voluntarily and may withdraw without providing a reason or fear of retribution.

To complete the questionnaire will require approximately 20 minutes. Please answer all questions and return saved file to me **on or before 11 September 2013** (sincere apologies for short deadline). In case of group of companies, please report only to the site / division / business unit that applies to your area of responsibility / influence.

Should you not be able to open the excel file, please contact me by reply e-mail and I will attend to the problem. Some of you may have older Microsoft Excel versions; for those on newer versions, please be reminded of “enable editing” to complete the questionnaire. Once complete, please save and send to [jneri@safripol.com](mailto:jneri@safripol.com). Supervisor contact details: Dr. Henry Lotz, and e-mail address: [henry.lotz@nwu.ac.za](mailto:henry.lotz@nwu.ac.za)

Thank you for taking the time to assist me in my educational endeavours.

Yours Sincerely,  
Johnny GF Neri  
E-mail address: [jneri@safripol.com](mailto:jneri@safripol.com)  
Mobile phone: +27-894-9148  
Student number: 23243627



## Appendix B: Questionnaire – Section A

### Customer Demographics

**Indicate your level in the organisation from selection below (select one option only):**

- |    |   |                          |
|----|---|--------------------------|
| A1 | Senior Management level, with purchase decision-making power or influence | <input type="checkbox"/> |
| A2 | Middle Management level, with purchase decision-making power or influence | <input type="checkbox"/> |
| A3 | Other level, with purchase decision-making power or influence             | <input type="checkbox"/> |
| A4 | Absolute no purchase decision-making power or influence                   | <input type="checkbox"/> |

**Indicate your organisation's current supplier base (more than one box may be selected):**

- |    |  |                          |
|----|--|--------------------------|
| A5 | Local purchases, directly from manufacturer                            | <input type="checkbox"/> |
| A6 | Local purchases, indirectly from manufacturer, via agent / distributor | <input type="checkbox"/> |
| A7 | Imports - direct purchases from overseas supplier/s                    | <input type="checkbox"/> |
| A8 | Imports - indirect purchases, via agents / distributors                | <input type="checkbox"/> |

**Indicate the types of polymers being purchased by your organisation (more than one box may be selected)**

- |     |   |                          |
|-----|---|--------------------------|
| A9  | PET – Polyethylene Terephthalate                  | <input type="checkbox"/> |
| A10 | HDPE - High Density Polyethylene                  | <input type="checkbox"/> |
| A11 | PP - Polypropylene                                | <input type="checkbox"/> |
| A12 | PVC – Polyvinyl chloride                          | <input type="checkbox"/> |
| A13 | LDPE & LLDPE – Low density Polyethylene           | <input type="checkbox"/> |
| A14 | PS and PSE – Polystyrene and expanded Polystyrene | <input type="checkbox"/> |
| A15 | Other, not specified above                        | <input type="checkbox"/> |

**Identify the end product of your organisation's polymer production**

- |     |                                   |                          |
|-----|-----------------------------------|--------------------------|
| A16 | Automotive products and parts     | <input type="checkbox"/> |
| A17 | Bottles and Jars                  | <input type="checkbox"/> |
| A18 | Caps & Closures                   | <input type="checkbox"/> |
| A19 | Carrier / Refuse bags             | <input type="checkbox"/> |
| A20 | Crates / Boxes / Pots / furniture | <input type="checkbox"/> |
| A21 | Domestic Ware & Toys & Chairs     | <input type="checkbox"/> |
| A22 | Film & sheet extrusion            | <input type="checkbox"/> |
| A23 | Industrial & Custom Moulding      | <input type="checkbox"/> |
| A24 | Knitted & Woven Products          | <input type="checkbox"/> |
| A25 | Pails / Containers / Buckets      | <input type="checkbox"/> |
| A26 | Pipe                              | <input type="checkbox"/> |
| A27 | Spunbound non-wovens              | <input type="checkbox"/> |
| A28 | Strapping, Binder Twine & Rope    | <input type="checkbox"/> |
| A29 | Thermoforming                     | <input type="checkbox"/> |
| A30 | Yarns & Fibre                     | <input type="checkbox"/> |
| A31 | Other, not specified above        | <input type="checkbox"/> |

**Polymer volumes purchased per annum**

- |     |  |                      |
|-----|--|----------------------|
| A32 | Please indicate your average purchases of all polymers in tons per annum | <input type="text"/> |
|-----|--|----------------------|

## Appendix C: Questionnaire – Section B, part 1

### Customer Experience

*As a polymer customer, please rate the level of satisfaction (experience) achieved from your supplier/s' value offering.*

#### Order placement and execution

- B1 Supplier accessibility when placing orders
- B2 Supplier order processing efficiency
- B3 Supplier order confirmation and feedback
- B4 Supplier order changes flexibility

Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Very Satisfied
1	2	3	4	5

#### Product Offering

- B5 Product range offered
- B6 Product quality
- B7 Product availability
- B8 Product packaging
- B9 Product consistency
- B10 Product is competitively priced


#### Supply and distribution

- B11 Delivery within timeline given
- B12 Reliability of supply
- B13 Continuity of supply
- B14 Supply flexibility
- B15 Reaction time for rush orders


#### Administration

- B16 At least 30 day notification of price movements
- B17 Notification of forecast tonnage allocation
- B18 Professional and user-friendly correspondence
- B19 Credit application process
- B20 Submission of delivery notes, invoicing and statements
- B21 Supply issue reporting and follow up


#### Customer relationship and inter-activeness

- B22 Regularity of customer visits by Sales Representatives
- B23 Professionalism of Representative
- B24 Helpfulness of Representative
- B25 Ease of contacting Customer Service
- B26 Promptness of response to customer queries
- B27 Technical support offered
- B28 Information sharing and transparency
- B29 Resolution to customer complaints
- B30 Quality of services offered
- B31 Availability of online information
- B32 Knowledgeable staff and technical know-how
- B33 Involvement with product development and innovation
- B34 Accessibility to management and decision makers


**Appendix C: Questionnaire – Section B, part 2**

		Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Some- what Satisfied	Very Satisfied
		1	2	3	4	5
<b>Company image</b>						
B35	Brand equity					
B36	Brand image					
B37	Company reputation					
B38	Company financial health					
B39	Company social responsibility					
B40	Company leadership structure					

## Appendix D: Language Editor's Certificate

### TO WHOM IT MAY CONCERN

This document serves to confirm that I, the undersigned, a professional language practitioner\* of

30 Kwartel Crescent, Rooihuiskraal, Centurion,

was responsible for the language editing (English) of the MBA dissertation of Mr JGF (Johnny) Neri, a student of the NorthWest University, titled

**"Evaluating value differentiation in the South African polymer market"**

(under the guidance of Dr HM Lotz as Supervisor).



A S du T Sonnekus  
(Dries Sonnekus)

Professional Language Practitioner/Text Editor  
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*\*Accredited by NWU to translate/edit study guides in various disciplines.*