UNIVERSITY OF KWAZULU-NATAL

TITLE: PERCEIVED CUSTOMER VALUE IN THE INTERNAL DELIVERY OF CAPITAL PROJECTS AT TRANSNET PORT TERMINALS

by

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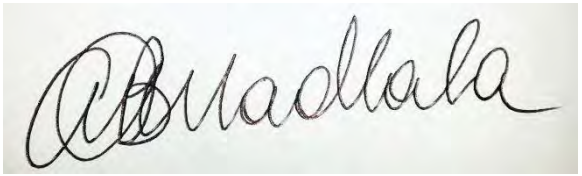

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Abstract

Transnet State Owned Company Limited is rolling out large infrastructure projects in line with the South African Government's economic growth strategy. As such, Transnet Port Terminals' infrastructure roll-out programme is changing the face of its terminals. This rollout is questioned by some as to whether the terminals are getting the expected value from the large capital investments. The concept of Perceived Customer Value was explored in this study to understand its subjective nature, the limitations within which it is used, and the dimensions that need to be utilised to measure it. The research adapted an existing multidimensional scale (Global Purchase Perceived Value) in order to develop and propose the use of a ranking system referred to as the *Case Research Perceived Customer Value Equation*. The use of this model has provided a practical method to measure Perceived Customer Value according to the specific research case. This research has tested whether the *Perceived Customer Value of the terminal representatives receiving internal capital projects within the KwaZulu-Natal region of Transnet Port Terminals is more than 80% or not.* Notwithstanding that the hypothesis could not be proven, invaluable findings were made in terms of the Perceived Customer Value dimensions where only one out of six dimesions met the expectations. The Capital Projects Department within Transnet Port Terminals should be able to take measures to address the problems identified through this study.

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1. CHAPTER ONE
INTRODUCTION TO THE RESEARCH

1.1 Introduction

This chapter introduces the research through providing a background (prologue) for the reader to understand the circumstances under which the research originated. It provides the motivation and the focal points covered in this research. It then discusses the problem statement and proposes the main objectives to answer the research question. The research methodology utilised to conduct the research and the limitations to this research were then discussed. The chapter concludes with a brief summary of the salient points raised in this chapter.

1.2 Prologue

Transnet State-Owned Company Limited is the largest company in the South African freight logistics network (Transnet, 2012a). By definition, state-owned entities are business concerns that earn their revenue from the sale of products and services and they are owned and controlled by government (Sokol, 2009). State-owned entities are often given mandates such as driving public investment programs that yield new economic capabilities, this is in particularly common where such investments compliment the private sector by absorbing the risks that cannot be funded by the private sector (Chang, 2007). Similarly, the government entrusts Transnet with the responsibility to reduce the cost of doing business through the provision of an integrated and cost-effective logistics solution for South Africans and international trading partners (Transnet, 2012a). In addition, Transnet is mandated to use its freight logistics network to enable economic growth. Its supply network is supported by several operating divisions, amongst which:

- Transnet National Port Authority provides port management function as the landlord,
- Transnet Port Terminals (TPT) operates terminals in all commercial ports,
- Transnet Freight Rail moves freight through its rail network, and
- Transnet Pipelines moves petroleum and gas cargo through its pipe network and storage facilities (Transnet, 2012a).

TPT facilitates the importing and exporting of goods through several terminals it operates in all seven ports. It has presence in Richards Bay, Durban, East London, Ngqura, Port Elizabeth, Cape Town and Saldanha (Transnet, 2012a). TPT handles various forms of cargo which can be categorised into sectors that include containers, mineral bulk, agricultural bulk and Roll-on Roll-off (RoRo) sectors (Transnet, 2012a). It services a wide range of customers with varying products that are delivered and collected through water, rail and road transport.

As part of the South African government's drive to increase its industrial capacity and therefore stimulate economic activity, it is utilising state-owned companies such as Eskom and Transnet to achieve this end (Creamer, 2011a). Transnet is therefore investing in large infrastructure projects, as initially publicised through the Quantum Leap Strategy, which came with a R93.4 billion investment over a five-year period (Wells, 2010). This was further revitalised through the R300 billion (R307 billion in exact figures) investment over a seven-year period that was referred to as the Market Demand Strategy (Transnet, 2012b). Transnet adopted the Market Demand Strategy to globally position itself after this investment as a "… key thermal coal exporter, an increasingly important 4th largest supplier of iron ore to China, the leading manganese exporter globally, the leading logistics hub for sub-Saharan Africa, a globally recognised benchmark for container and heavy haul operations" (Transnet, 2012b, p.4).

TPT is one of the key role-players in terms of Transnet investment plans. It is expected to increase its infrastructure investment programme from R2.4 billion in the 2009/10 financial year (Wells, 2010) to an estimated R33 billion in the 2018/19 financial year (Transnet, 2012c). TPT's infrastructure investment programme is run through the Capital Projects Department (CPD). The CPD is charged with the project management function of projects that have been approved by TPT to be executed on behalf of all its terminals. TPT's Capital Investment Committee assesses proposals (i.e. business cases) put forward by the terminals to be considered for execution. The Capital Investment Committee decides whether investment for each project is approved or not. Upon approval of the business case, the intentions of the terminals are generally put into action by the CPD.

In the recent years, the size and quantity of infrastructure projects have been on the increase, in line with the government's objectives. During this time, some negative sentiments have been shared by some terminals, both formally and informally, in terms of complaints at the final delivery of the projects. These sentiments are, however, difficult to find clear justification, largely due to the fact that they are often not-well documented and demonstrated. In other instances they are a result of undocumented requests. At the hand-over stage of some of the projects, there seemed to be some misunderstanding between the terminals' representatives and the CPD on the deliverables, the nature of the deliverables (quality) and perhaps the manner in which the projects are delivered. While these resemble some misunderstandings in some instances, they may not necessarily be expansive, given that there are also a number of projects where the terminals have reported a significant level of comfort on the final project deliverables. This makes it difficult for the CPD to have a clear perspective from the terminals whether they believe they are receiving good value for the investments they are making, or not.

1.3 Motivation for the Study

It is common cause that when any party engages another party for the purpose of acquiring a product or a service, such a party would hope to find value in the consumption of such a product or service. The common question by many after such a consumption experience is, "*Was the value for the money paid received or not*"? Many would agree that it is much easier to ask this question than answering it with a clear qualification. In instances where different parties experienced the same service, they would often answer the question differently. It is this very reason that makes those providing goods and services want to find ways and means to determine how much value their customers receive from their products and services. In the open market system, this is often a question of detecting potential problems in order to retain competitive advantage. For internal suppliers and / or service providers, this typically helps detect misalignment with internal customers in order to bring realignment.

In the context of the capital projects delivered within TPT, the measurement of Perceived Customer Value (PCV) is important for strategically aligning the CPD. The research identifies priorities and weaknesses for the CPD managers from a customer perspective. This affords the CPD the opportunity to methodically address its customer concerns. The increasing annual investments in these projects warrant that TPT shows maturity and stronger effectiveness as it continues to embark on bigger and more complex projects without failing terminal expectations at the final delivery stage. This research will assist TPT to respond more effectively to this challenge. Second, it is important to the TPT executives and the Capital Investment Committee to understand how their investment decisions are implemented. It would enable them to assess whether their efforts towards the investment programme are yielding good value for the business or not. This could, for instance, assist them to identify gaps between their investment decisions, the experiences by the terminals in receiving the assets and finally the benefits received by external customers. This view from the terminal representatives could help these areas to decide how to plan for other future projects as a continuous improvement mechanism or even a changing the implementation strategy. Third, terminal representatives would be able to see whether or not the views that are held on an individual basis are commonly felt by others throughout various terminals. In other words, the research may be able to elevate specific views that are prevalent in specific areas. This would give such areas an opportunity for their concerns to be addressed. Fourth, similar capital projects departments with a mandate to deliver internal projects within other operating divisions of Transnet would benefit with a tool that could also help them measure PCV. Fifth, while the research is a cross-sectional study at this stage, it can be used as a basis for future annual longitudinal studies (conducted annually). In that way it could be assessed how the delivery of projects is improving or deteriorating.

More importantly though, is that there is no evidence that PCV has been measured in the project management context. This research therefore brings the opportunity to provide those in the project management field with a tool to measure PCV. They could utilise it to establish whether or not the benefits that

their customers are receiving are to the extent that they had intended. Similarly, it gives others outside the project management field a basis to further explore the measurement of PCV.

1.4 Focus of the Study

Value as a construct is not new in the academic space. It has been widely researched and several things have been established through such research. PCV has been established to be the perception internally held by the consumer during a purchase, a consumption experience, and after consumption (Sanchez et al., 2004). This research, however, will specifically draw interest from the post-consumption scenario. It will therefore investigate a sample from a population of terminal representatives that has experienced the delivery of capital projects in the 2012/13 financial year (i.e. April 2012 to March 2013). Second, it investigates PCV from the position of a customer and not the service provider. The customer in this case is internal and represents the terminal in the co-ordination and management of the projects.

Given that the focus of this research is on PCV in the project management context, the research model and questionnaire is built around PCV. The questions, the analysis thereof, and the discussions thereof have therefore, to a certain extent, taken into cognisance the project management theories and practices.

This research excludes the views of the CPD in order to ensure that the study remains objective. Members of the CPD that are listed in project charters and who form part of the project teams will be excluded from the population. Secondly, external customers are specifically excluded, as they are the indirect customers in this case. They are, in fact, customers to the terminal representatives, who determine the project requirements within TPT. Third, this research excludes value construct from a position of what the customer desires (i.e. desired customer value. The sample will therefore exclude many projects that were in progress but had not reached a point of delivery to the customers. Fourth, the research excludes megaprojects that have been selected by Transnet to be executed by

Transnet Capital Projects. This sister divisions to TPT) is geared specifically for executing megaprojects that are of interest to Transnet and its operating divisions. Lastly, this research is not testing whether or not the projects executed are following a particular set of the project management practices or compliance thereof. It is therefore not assuming that value is a measurement in relation to those practice or even compliance standards.

1.5 Problem Statement

TPT is investing in projects which are executed through its CPD. The increase in spending associated with these capital projects and some negative sentiments at delivery stages from some within TPT raised uncertainties in terms of whether the CPD is meeting its customer needs.

This research will therefore want to determine the extent to which the internal delivery of capital projects are perceived to be yielding customer value in order to assist the CPD determine areas of its service that need improvements.

Given the geographical limitations to conduct this research throughout the entire TPT, it is hypothesised that:

H1: *The PCV received by the terminal representatives for the internal capital projects in KwaZulu-Natal is more than 80%.*

1.6 Objectives

In order for the aim of this research to be achieved, the research will have to determine:

1) The functional value of the department or establishment [i.e. the CPD] (FVE),
2) The functional value of CPD personnel – Professionalism (FPP),
3) The functional value of products and service delivered – Quality (FVQ),
4) The functional value of price of capital projects (FVP),
5) The emotional value (EV) of capital projects, and
6) The social value (SV) of capital projects.

1.7 Research Methodology

Customer value measurement scales are not a new development, given the work done to this effect (Gale, 1994, Sweeney and Soutar, 2001, Sanchez et al., 2004, Fiol et al., 2007, Smith and Colgate, 2007, Ivanauskienė et al., 2012). The development of a complete new theoretical concept for the measurement of PCV is therefore not of interest to this research *per se*. However, the selection of a relevant theoretical concept to measure PCV, the application of such a framework to develop a measurement model, and the utilisation of such a model in the actual measurement is of interest to this case. Hence, a quantitative research is the pragmatic research methodology to be applied on a measurement research of this nature.

1.8 Limitations of the Research

The limitations of this research require the careful interrogation of the construct of PCV in the context of the project management field. The scope of the research will therefore limit the project management field to the broader principles and the aspects that are closely linked to value. Similarly, identifying the population limits the research to terminal representatives involved in the request for project funding and those participating in delivering it. This results in the exclusion of other beneficiaries of projects such as the general operators of the assets. In addition, TPT operates the provinces of KwaZulu-Natal, the Eastern Cape and Western Cape. For practical and geographical reasons, the study was limited to KwaZulu-Natal. To this end, the conclusion of this study cannot simply be assumed to be true to the terminals in the Eastern Cape and Western Cape.

The population size of 82 requires an estimated sample size of 68 respondents (Sekaran and Bougie, 2009). The study will encounter difficulties of achieving a confidence level of 95%, given the spread of the five terminals to be surveyed. In particular, the DCT Pier 2 and RBT have a large footprint in terms of covering all the respondents within each terminal. The preferred method of using manually

completed survey questionnaires will require careful co-ordination, especially given the possibility of not finding some of the respondents on the day of the survey, due to work or personal commitments.

The manual nature of the survey questionnaire means that there will be questions that may not be answered and left blank by mistake. The data may therefore have some smaller samples than the actual sample tested.

1.9 Summary

This chapter demonstrated the historical background to Transnet and the business setting within which TPT is located. It makes a case for the challenges which the CPD is experiencing in the execution of TPT capital investments. It suggests that there is a need for the measurement of PCV by the CPD. It proposes that the adaptation of an existing theoretical concept into a model that can be used to measure PCV is the main reason for conducting this research. The perceptions of the customer to the post-consumption experience scenario are set as the limits for conducting the research. In that way, the views of the project team, the external clients, and the compliance to project management best practices, for example, are excluded. The research has been structured to determine the extent to which the internal delivery of capital projects is perceived to be yielding PCV. Six objectives are developed to answer the research problem based on functional, emotional and social value. The research is designed using a quantitative research method. The limitations identified in this case relate to the manual nature of the questionnaire and the challenges that are associated with the absence of respondents at the time of the survey. This chapter therefore provides the necessary background before investigating the deeper theoretical fundamentals associated with PCV and projects.

2. CHAPTER TWO
THE SEARCH FOR VALUE IN PROJECT MANAGEMENT

2.1 Introduction

The subjective concept of PCV is explored in this chapter, together with the fundamentals of project management. These two concepts are interrogated to find how PCV can be utilised to fit into project management context in order to determine value. It is proposed that through the utilisation of a PCV scale, the performance on delivered projects can be determined.

2.2 The Marketing Concept of Value

Consumers buy from businesses to earn themselves benefits. Managers must find ways to translate these needed benefits into products and services. They must make the necessary provisions to inform the consumer of the available option for acquiring the benefits (Winer, 2007). Marketing has an important role in any business, since it seeks to establish customer wants and needs. It therefore influences how resources are utilised in order to meet the wants and needs of the customer (Cant, 2004). Marketing is not only interested in the supply chain, but also the mind of the customer. It assumes that if it captures the mind, it has the power to influence the buying decision (Winer, 2007). Tools such as product development, pricing, promotions, advertising and customer relations management are some of the tools utilised in the marketing field to influence a buying decision (Winer, 2007).

A business that does not give the most benefits at the cheapest price limits its competitive ability. (Winer, 2007). In other words, business managers need to utilise marketing and its tools to enable them to achieve the business objectives.
Marketing provides the opportunity to acquire what is needed by way of exchanging goods and services at a particular value (Cant, 2004). This process involves a broad range of activities among which forging of relationships with customers is one of them. The management of these relationships, or customer relations management as it is commonly known, is the foundation for securing repeat purchases from the existing customers, while simultaneously securing

referrals for other potential customers (Kotler and Armstrong, 2004). Customer relations management aligns the business to the customer in order to supply benefits to both parties (Chalmeta, 2005). Customer relations management is therefore important in terms of future sustainability of businesses. Businesses that want to grow their market share and profitability should consider embracing customer relations management.

The principle behind customer relations management is to gain a competitive edge in the future, through customer understanding (Baltzan and Phillips, 2010). It assumes that future markets will be brought by markets secured today through repeat purchases. Putting this differently, today's purchases should result in value creation. It is in the interest of companies to offer customer value that exceeds competition by continuously providing solutions to customers' stated needs, unstated needs and also what they will need in the future (Blocker et al., 2010). The question to ask ourselves then is, if value creation is central to the business transaction process and the source for competing in the market, then what is value? How do we recognise it? These important questions are discussed and answered in the sections below.

2.2.1 What Value Is

Various authors have offered a range of definitions to this topic. One of the early definitions put it as the "…market-perceived quality adjusted for the relative price of your product" (Gale, 1994, p.xiv). Another take to this topic indicated that value is the yield between the benefits earned and the monetary loss suffered by the customer in a sale (Huber and Herrmann, 2000). Other authors have offered a different take on this. For example, some referred to value as the activity of bringing, developing and keeping the customers within the business (Ulaga, 2001, Graf and Maas, 2008). Others believed that customers experience value through the type of engagement, one's reference point and preferences (Payne et al., 2007).

Now considering the definitions given above, "value" has generally been given two differing points of reference. The company's perspective suggests that value is the

attractiveness of an individual or group of individuals in monetary terms. The customer's perspective suggests that value is created by the offering from the business in accordance with customer perceptions (Graf and Maas, 2008). The former is referred to as customer lifetime value and it aims to segment customers into groups and prioritise their engagement in terms of their profitability (Winer, 2007). Customer Lifetime Value is the quantum of forecasted gains from a customer over a particular interval. Organisations typically improve their Customer Lifetime Value competiveness through (1) acquiring new customers, (2) improving retention of their customers, and (3) getting existing customers to purchase more products than they would have (Verhoef et al., 2007). When organisations successfully manage to create a good value proposition that is determined by relevant customers, they maximise their Customer Lifetime Value in the long run (Payne et al., 2007). Thus, Customer Lifetime Value motivates the organisations to take actions that are guided by the monetary benefits it has already made or is likely to make in the future.

The latter, customer value, is "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). Customer value is "a consequence of subjective evaluation which in turn results from the summing up of the various perceived fulfilment of the value, benefit and attribute level and perceived costs, taking into account subjective weighing factors" (Huber and Herrmann, 2000, p.6). In essence, customer value has to do with the magnitude of the customer's perceived net benefits.

More recently, other authors have proposed that the customer's value creation process can be defined as "a series of activities performed by the customer to achieve a particular goal" (Payne et al., 2007, p.86). They suggest that competitive advantage for the supplier is embedded in how they create the ability to increase what customer resources can do for the customer or how it can influence efficiency in that process. Consequentially, suppliers that offer a superior value proposition should earn greater opportunities to repeat this process and therefore increase revenues, profits and referrals.

2.2.2 The Difference between Value and Values

Value (singular) and values (plural) may seem the same, but they are completely different concepts. Value is about what the customer believes to be his nett gains or losses in the process of acquiring something (Johnson, 2007, Zeithaml, 1988, Huber and Herrmann, 2000). Values, on the other hand, are "guidelines for human behaviour that are shared by a large group of individuals" (Liviu et al., 2012, p.88). They are the common views and lasting beliefs about what is correct and not correct in terms of circumstances and products and services. While 'value' refers to judgement based on preferences, 'values' are the basis for the criteria by which such judgement is made (Korkman, 2006). So values are a first order construct, from which value is a second order construct. Nevertheless, value and not values, is of interest in this case. For the purposes of this research, we will explore this further and discuss more broadly the concept of Perceived Customer Value (PCV).

2.3 The Perceived Customer Value Distinction

It has been suggested that customer value occurs either as a desire prior to an experience of using a product or service (i.e. desired customer value) or a perception after the experience of using a product or service (i.e. PCV) (Graf and Maas, 2008, Maas and Graf, 2007). Desired customer value is an abstract construct based on a set of value dimensions and underpinned by beliefs and values held by the customer (Korkman, 2006, Woodruff, 1997). It focuses on what benefits have been received by the customer enable him to meet his needs (Graf and Maas, 2008). In comparison, PCV is the exchange in gains and losses based on clear performance features experienced (Woodruff, 1997, Graf and Maas, 2008).

There are two considerations that need to be noted from the literature on customer value. First, fewer authors have explored customer value on the basis of 'a desire prior to an experience' (i.e. desired customer value) (Maas and Graf, 2007, Graf and Maas, 2008). Conversely, numerous authors have done work in terms of 'a perception post an experience' (i.e. PCV) (Woodruff, 1997, Huber and Herrmann, 2000, Smith and Colgate, 2007, Fiol et al., 2007, Morar, 2013). Nevertheless,

given the lack of evidence to suggest otherwise, it can be argued that the principles behind both of these forms of value are generally accepted. Second, many authors have explored customer value on the basis of either 'comparing benefits to sacrifices', on one hand (Gale, 1994, Zeithaml, 1988) or 'a multidimensional concept' on the other hand (Woodruff, 1997, Sweeney and Soutar, 2001, Ulaga, 2001, Sanchez et al., 2004, Huber et al., 2007, Morar, 2013, Vieira, 2013). Clearly, the earlier views by scholars suggest that customer value was considered simply as a comparison between benefits and sacrifices. However, the multidimensional approach has gained more support in more recent times, with an argument that there are other contributing affective factors to an evaluation of whether or not value is earned in a transaction. In the context of this research, it is of interest to understand the end-customer's view after the experience of using products and services. Likewise, it is of interest to understand how the affective aspects of the experience make impact on the customers. It is through these important considerations that value has been undertaken in this research from a PCV perspective. The section below explores it in detail.

2.3.1 Defining Perceived Customer Value

PCV is an evaluation that is "…based on the customer perception of what they want to happen in a specific use-situation, with the help of a product or service offering, in order to accomplish a desired purpose or goal" (Huber et al., 2007, p.555). PCV must be appreciated as a dynamic construct that is continuously changing given that perceptions are continuously influenced by changing expectations (Blocker et al., 2010). It is a transient process of what has occurred that assesses what has been the net benefit or loss (Graf and Maas, 2008). PCV is "a dynamic variable, experienced before purchase, at the moment of purchase, at the time of use, and after use" (Sanchez et al., 2004, p. 394). This is explained by the concept that the evaluation of a purchase is not static, but it changes in line with the consumption experiences. In other words, the daily revelations that were not considered prior to the purchase act as a modifier of the perceptions. For the purpose of this research, PCV shall be referred to as:

"*a customer's perceived preference for and evaluation of those product attributes, performances, and consequences arising from the use that facilitate (or block)*

achieving the customer's goals and purposes in the use situation" (Woodruff, 1997, p.142).

This definition tells us that the perception of the customer is considered ideally placed to judge the products and services in terms of their combination of attributes at that particular time of experience. It assumes that their views may be subject to change, depending on how the experience reveals itself as a useful or useless means to a desired end-state. The above definition from Woodruff explains what value is, but does not provide a parameter that could be utilised as a framework for measuring PCV. Various approaches will be reviewed to see which one ideally expresses how value should be measured.

2.3.2 PCV Approaches

PCV has been broadly researched by different authors, of whom Korkman (2006) provided a simple categorisation of customer value approaches from the work done by differing authors. First, he suggested that there is a *cognitive approach* to value. It proposes that value is embedded in the object or relationship or means-end chains and perceived subjectively by the customer. The cognitive approach advocates that PCV is an outcome of the benefits received compared to the sacrifices made by the customer (Sanchez et al., 2004). This approach has evolved from being considered, to be based on functional aspects, to even intangible aspects. Though the intangible aspects make it difficult to assess, explore and understand value, it clearly involves the process of making decision taking into consideration emotions and social implications (Fiol et al., 2007).

Second, he proposed the *experiential approach,* which means that value is embedded in the holistic experience of being in the world (Korkman, 2006). In addition, value, according to this approach, is always personal and thus varies between individuals. It is also situational, in the sense that value appears in certain contexts and cannot be generally defined for a certain customer. In essence, it seeks to promote the concept that experience informs customers in terms of what is perceived as valuable (Payne et al., 2007).

Third, the *resource based approach* is based on the value chain concept, with origins from the classical theory of value in economics. It proposes that value accumulates in the making of a product and as it would be embedded in the product. However, it reasons that it is not limited to products, but also assumes that consumption is productive (Korkman, 2006). This brings this approach into the mainstream of service marketing.

Fourth, Korkman's (2006) own research proposed the *practice theoretical approach*. His approach suggests that value is embedded in the practice of the systemic whole that fosters action. So, in this approach, the customer is the practitioner, while the company becomes the developer of the whole system of practice. It is underpinned by the assumption that the customer may not act in accordance with what he says he prefers. As such, ethnography is proposed to be a more accurate method to understand a customer's actions and what the customer says.

One of the approaches that broadened the findings developed by others is what is referred to as the *cognition-affect-behaviour approach*. Cognition in this case refers to the customer's thoughts about the purchase. It involves the processing of information, logical thinking, appreciation and the interpretation of motivating factors and the broader events in the purchase (Sanchez et al., 2004, Roig et al., 2006). Affect suggests that there are feelings generated in the customer making a purchase. These customer feelings may be positive or negative, with varying degrees of intensity. Behaviour is about the customer's responsive actions derived from the experience of purchasing and consuming the product (Sanchez et al., 2004). In other words, customers act as thinkers, feelers and doers (Payne et al., 2007). The *cognition-affect-behaviour approach* proposes that value is derived from functional (installations, professionalism, quality and price), social and emotional dimensions (Sweeney and Soutar, 2001, Sanchez et al., 2004). This approach is the basis of exploring PCV in this research and it will be discussed in detail later in this chapter.

The foundation to this approach is based on two key assumptions. First, customer value is an outcome embedded in the experience of using a product. This

suggests that behaviour analysis goes beyond the choice selection point involved in a purchase, but must include the consumption experience of utilising the product or service (Payne et al., 2007). Second, only the customer can objectively formulate a perception of the customer value of a product. The strength of these two assumptions in relation to the TPT case underpins the basis of this approach being chosen for this research.

2.4 The Common Misperceptions of Customer Value

The discussion about customer value brings about various closely connected topics which can easily be used or interpreted to mean the same thing in certain instances. Customer satisfaction, value management and perceived quality (PQ) come are probably the main contemporary topics that have been explored by various authors that one can link to the customer value discourse. These three concepts are reviewed below to understand what they are and how they are connected to customer value in order to understand how they may impact on this research.

2.4.1 Customer Satisfaction

Customer value might often be confused with the concept of customer satisfatcion especially if one considers that quality functions as a driver of both value and satisfaction (Huber et al., 2007). Customer satisfaction occurs when the properties of a goods or a service addresses the customer needs such that they match or exceed them, and similarly, when a company's products and services achieve the same over their expected lifetime (Zwikael, 2006). This definition suggests that the customer must experience a service, evaluate whether his needs have been exceeded, met or not met, and then realize the feeling of satisfaction or even dissatisfaction. Customer satifaction as a construct can only occur after the customer has both purchased and consumed a product or service. It is therefore tested in the event where a product or a service has been used and it compares the result to the expectation held previously (Sanchez et al., 2004). Customer satifaction is the customer's feelings based on assessments of utilising a product (Woodruff, 1997). It is achieved when an organisation brings superior

customer value to its customers (Slater, 1997). Therefore customer value is an antecedent of customer satifaction, as it is an important input function to customer satisfaction or it has a causal relationship with customer satifaction (Huber et al., 2007, Graf and Maas, 2008).

Even though customer value and customer satifaction share a causal relationship, they both have an impact on behaviour intentions or customer behaviour (Korkman, 2006). This has been illustrated more clearly Figure 2.1.

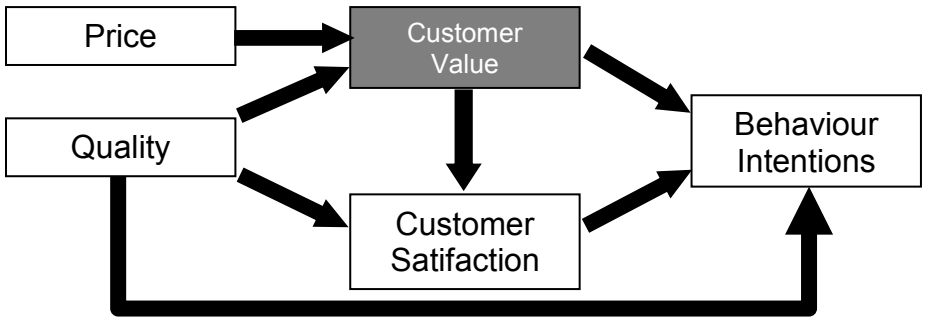

Figure 2.1: Relationships between Customer Value and Customer Behaviour

Source: Graf, A. & Maas, P. 2008. **Customer Value from a Customer Perspective: A Comprehensive Review**. St. Gallen: University of St. Gallen, p18.

Figure 2.1 simply suggests that price and quality have a causal relationship to customer value. Quality and customer value have a causal relationship with customer satifaction. More important is that an assessment of performance triggers an emotionally driven response that explains how a customer behaves. In other words, evaluation of performance on customer value, customer satifaction and quality results in changes in the customer's behaviour patterns.

Customer satifaction is however, not the only concept that has been incorrectly used to mean customer value. Another closely related concept that is sometimes

misinterpreted with customer value is what is called value management. The next section explains what it is, what is it used for and how it differs to customer value.

2.4.2 Value Management

In an effort to remain competitive in the market place, companies may want to look at utilising customer value as a source for competitive advantage. The concept of value has also been used in business to address innovation management and later for improving conceptual designs. This developed into what is now known as value engineering or value management. In the context of value management, value is “a fair return or equivalent in goods, services, or money for something exchanged” (SAVE-International, 2007, p.8).

Value Management is regarded as a designed and logical method intended to eliminate unnecessary losses through the provision of the necessary performance standards at the cheapest price that is aligning to it (Bowen et al., 2009). It also includes finding, asking and verifying the needs and reasons at the start of the project procurement phase. Value Management is therefore able to prevent the late realisation of project problems that could have been determined earlier in the project preparation and mitigated earlier, at the lowest possible cost. Through this process, the project scope creep is avoided, project lead times are controlled and budgets are effectively managed.

It is suggested that organisations that are conducting a value management research should determine the main objective of the project cover through pre-workshop preparation, conducting a value workshop and post-workshop documentation and implementation (SAVE-International, 2007). The research formally applies value management to a project, such that its value is improved. Value Management follows a specific process and structure during the value workshop which follows a six-phase sequential job plan process. Each of these six phases (i.e. information, functional analysis, creative phase, evaluation phase, development and presentation) has its own objectives and activities to achieve that phase. In essence, the value workshop brings the project team members to a basic, common and functional understanding that forms the full basis for the

project. The post-workshop documentation and implementation step ensures that the stakeholders formulate what they hope the project will do based on the research. This includes changes to the original scope that have been justified by the value engineering process which are included in the future design. The essence of value management is to ensure that projects are scoped to the highest level of detail prior to execution, in order to enable effective decision-making prior to making investments.

The significance of Value Management in the context of this topic is that value management is a useful tools especially in large and complex projects, in order to fully appreciate the full scope of the project prior to deciding the business approach towards the resolution of the identified risks.

2.4.3 Perceived Quality

The last misperception to be discussed here is the concept of PQ. First, quality, is the all the attributes and properties in a product or service that enable it to meet both specified and unspecified requirements (Thomson et al., 2003, Render et al., 2009). Alternatively, it is “the degree to which a set of inherent characteristics fulfils requirements (Project Management Institute, 2013, p.556). This is in agreement the logic behind Figure 2.1. Quality appears not only in the form of the actual output of the process, but also the process of the service. The assumption is that quality can be deconstructed into a number of measurable dimensions or variables (Korkman, 2006). Quality is an input function towards the delivery of benefits. It enables the customer to make judgements, whether value exists or not. This suggests that quality is a driver to the broader concept of value. Value is a higher-order construct encompassing a wider range of dimensions compared to quality. Thus, quality can be considered as a positive determinant of value (Huber et al., 2007, Vieira, 2013).

Finally, PQ is “an eminently cognitive construct, which values the result, where expectations are compared to the result” (Sanchez et al., 2004, p.397). By comparison, quality is about the superiority or excellence of a good or a service, whereas, perceived quality is about the customer’s thoughts about the superiority

or excellence thereof (Zeithaml, 1988). The main difference between PQ and PCV is that PQ does not consider affective aspects and there is a positive relationship between PQ and PCV (Korkman, 2006). Furthermore, there is wide acceptance of empirical research works that suggest that PCV is driven by PQ (Desarbo et al., 2009, Kanten and Yaslioglu, 2012).

2.5 The Internal Customer Dynamics to PCV

This research addresses PCV in the internal delivery of projects. It may be argued that the general open market conditions, such as the manner in which the customer and the service provider interact, cannot be assumed to be the same. It is therefore necessary to acknowledge that there are two types of customers in any organisation, external customers who are not controlled by the organisation, and internal customers, who are governed by the organisation's rules and intentions. Business survival demands that internal customer needs are treated as a source of meeting external customer needs (Halis and Gokgoz, 2007).

Studies on PCV have generally focused on consumer markets (Fiol et al., 2007). Customers, are however, not always external. In the Total Quality Management context, an external customer is "a person who is outside the organization and demands goods and service to buy", while internal customers "are persons who are working and who are contributing goods and service production directly or indirectly in an organization" (Halis and Gokgoz, 2007, p.8). Figure 2.2 illustrates how customers can exist within an organization.

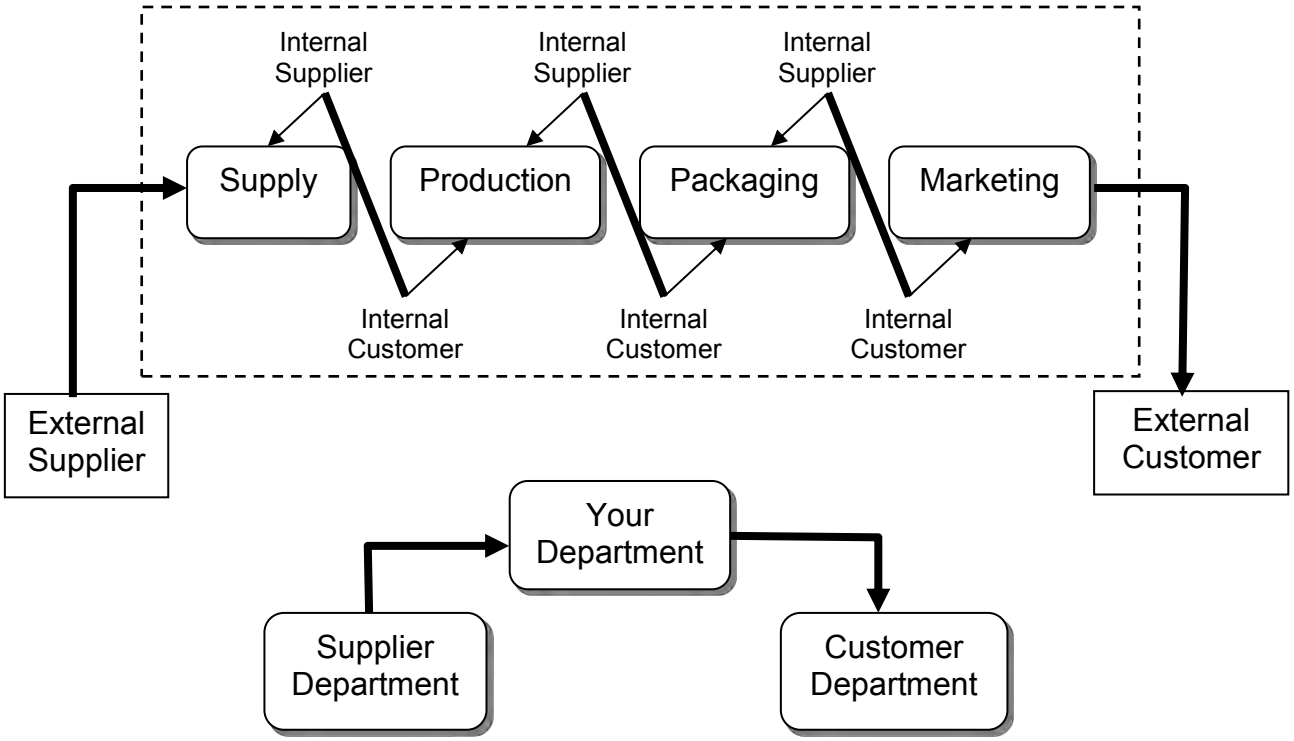

Figure 2.2: Internal Customer - Internal Supplier Chain in Business

Source: Halis, M. & Gokgoz, G. 2007. **Creating Organizational Commitment by Satisfying Internal Customers**. Istanbul: Serbian Journal of Management. p8.

Figure 2.2 demonstrates that in the value chain process of a manufacturing organisation, for example, an external supplier brings a finished product from his organisation. This is considered as a raw material at the receiving point of all supplies within the manufacturing site. The supply department becomes an internal supplier to the production department which, in turn, is an internal customer to the supply department. By internal customer we mean that an individual of a department is serviced by another from another department within the same organisation (Jun and Cai, 2010). This internal supplier-customer relationship repeats itself through the internal value chain, up to the marketing department, which is the supplier to an external customer. In essence, internal supplier-customer relationships are both similar in that in both instances,

customers expect to receive the delivery from their suppliers, whether they are internal or not. Each employee has a dual role that continuously changes from producers of products and services to receivers (Conduit and Mavondo, 2001). Similar to external customers, PCV for internal customers is determined by their experiences of the product and service characteristics they receive towards meeting their objective of supplying their own customers. It is in this context that PCV is justified and applicable to internal customers. This is one of the main contributions that this research will aim to contribute to this academic field.

2.6 Value through Projects and Project management

The above discussions about value and its context to this research must be related to another broad field of project management. The section below will formulate the necessary understanding of the broader and general issues about projects and project management. However, it will give specific focus to the salient issues of what is critical in the context of this research.

2.6.1 The Project Definition

Various authors have proposed definitions to define a project which is beyond the scope of this research. Some notable contributions in this regard suggested that a project is "a collection of linked activities carried out in an organised manner with a clearly defined start point and finish point, to achieve some specific results that satisfy the needs of an organisation as derived from the organisation's current plans" (Young, 2006, p.10). Project Management then becomes an interim arrangement that is carried out in order to create a distinctive product or service offering (Meredith and Mantel, 2010, Project Management Institute, 2013, Roeder, 2013). It is not a repetitive daily activity that produces the same outcomes, but must deliver a new product or service upon completion (Larson and Gray, 2011). These views share a common perspective, in that a project is not permanent; it must produce something new out of the co-ordination of activities and resources. In addition, a project is typically characterised by having clear objectives, complexity, application of various techniques and methods, collaboration of experts from different fields, managing new and unknown problems with high risks,

assignment of an own budget, and it brings particular stress for the team that needs to deliver the project outcomes (Armberg et al., 2009).

Though projects possess the characteristics mentioned above, there is a suggestion that business projects differ in terms of the tasks involved (namely organisational projects, IT projects, research and development projects, construction and investment projects) and client distance (i.e. internal project or external project) (Armberg et al., 2009). This means that, regardless of whether projects are conducted to benefit an internal or external client, it will eventually achieve one of the four tasks.

Projects are often confused with portfolios. By portfolio, we refer to a collective group of projects that are structured to achieve a single goal over a long time frame (Young, 2006, Larson and Gray, 2011, Armberg et al., 2009). In order to effectively manage their programme, organisations need to ensure that management of project ideas, preparation of projects, differentiation into project categories, and the evaluation and prioritisation of projects are executed (Armberg et al., 2009). The management of project ideas reduces creativity and the forming of ideas to a point where they can be documented, classified and assessed. The preparation of projects refers to transforming a project idea into a business case for consideration and approval by top management, among other competing business cases. Through differentiation into project categories, organisations are able to use the risk profile of the project and apply planning and control methods, such that the project is managed and regulated according to its classification. The evaluation and prioritisation of projects typically considers firstly the alignment to the broad organisational strategy, and then economic benefit (for example, Return-On-Investment for internal customer projects and marginal returns on external customers) associated with the project. Finally, it considers availability of resources (both human and financially). In support of this view, it has been reasoned that portfolio management enables superior business decision through the information it solicits and presents (Larson and Gray, 2011). Organisations may differ in terms of nature of their projects (e.g. pharmaceutical project, automotive, construction, etc.) and how they apply methods in each of these portfolio processes (e.g. Payback period, Nett Present Value, etc.). Regardless of

this, organisations stand to benefit through the careful assessment of projects in terms of whether or not they need to be accepted as part of their project portfolio. Failure to follow this logical approach opens up the organisation to clutter and an opportunity to deviate from the organisation's strategy.

Applying this successfully means that it should result in a decision that approves or rejects the starting of a project. This authorisation typically comes in the form of a project charter in the case of internal projects, or a contract for external projects (Project Management Institute, 1996). The project charter refers to "a document that formally recognises the existence of a project" (Project Management Institute, 1996, p.50). Upon completion of this step, all other activities that will require the management of the project may start.

2.6.2 The Project Management Philosophy

In this current era, project management and its practices are resolving generation to generation struggles. Project management is increasingly adopted as the solution to time-limited, complicated but increasing tasks. Innovative and systematic procedures are needed to produce solutions to this (Meredith and Mantel, 2010). Organisations are facing the challenges of introducing new products quickly to the markets, addressing vast complexities in the introduction of new products, ensuring new products are sustainable in terms of the triple bottom line (planet, people and profit), corporate downsizing in terms of reducing middle management and increased customer focus in terms of customised product offering. These challenges are resulting in an increasing percentage of firms focusing on projects and project management as a tool for achieving their strategic direction (Larson and Gray, 2011). These market changes, in terms of project management, make it necessary to ask ourselves what project management really is, what is involved in the project management process, who is the project manager, and what are some the key issues in the practice of delivering projects. The answers to these questions are discussed briefly below.

2.6.2.1 Project Management Defined

Project management can be referred to as “the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from the project” (Project Management Institute, 1996, p. 167). This definition is short of suggesting that project management is about making project activities efficient in order to meet or exceed customer expectations. It is the skill to manage not only the project tools efficiently but also the ability to manage the human dynamics involved as a result of projects.

In essence, a project manager has an oversight responsibility on a particular project, whereas a portfolio or program manager has oversight on a group of interdependently related projects in order to achieve specific strategic projects (Project Management Institute, 2013, Graham, 2008). This difference only suggests that while the project manager is concerned about specific issues on a project, the program manager tends to be concerned about the generalised issues the portfolio or program. Their roles are important in the end-to-end cycle of delivering a project. The next section discusses the project life-cycle and how it influences the project.

2.6.2.2 The Project Life-Cycle

Though projects are defined as being unique and temporary, they are also predictable in terms of the level of effort required from the project team in relation to time. The project life-cycle typically includes the stages of defining, planning, executing and closing. While this may be easily confused with product life-cycle, it differs in the sense that it is limited to the “temporary endeavour” portion of the product life-cycle that is aimed at bringing the product to the market (Project Management Institute, 2013). In other words, the project life-cycle often represents only a stage in the life-cycle of a product. Of course, the project life-cycle tends to vary in line with specific industries or project types. Figure 2.3 illustrates the stages and what they involve within the project life-cycle.

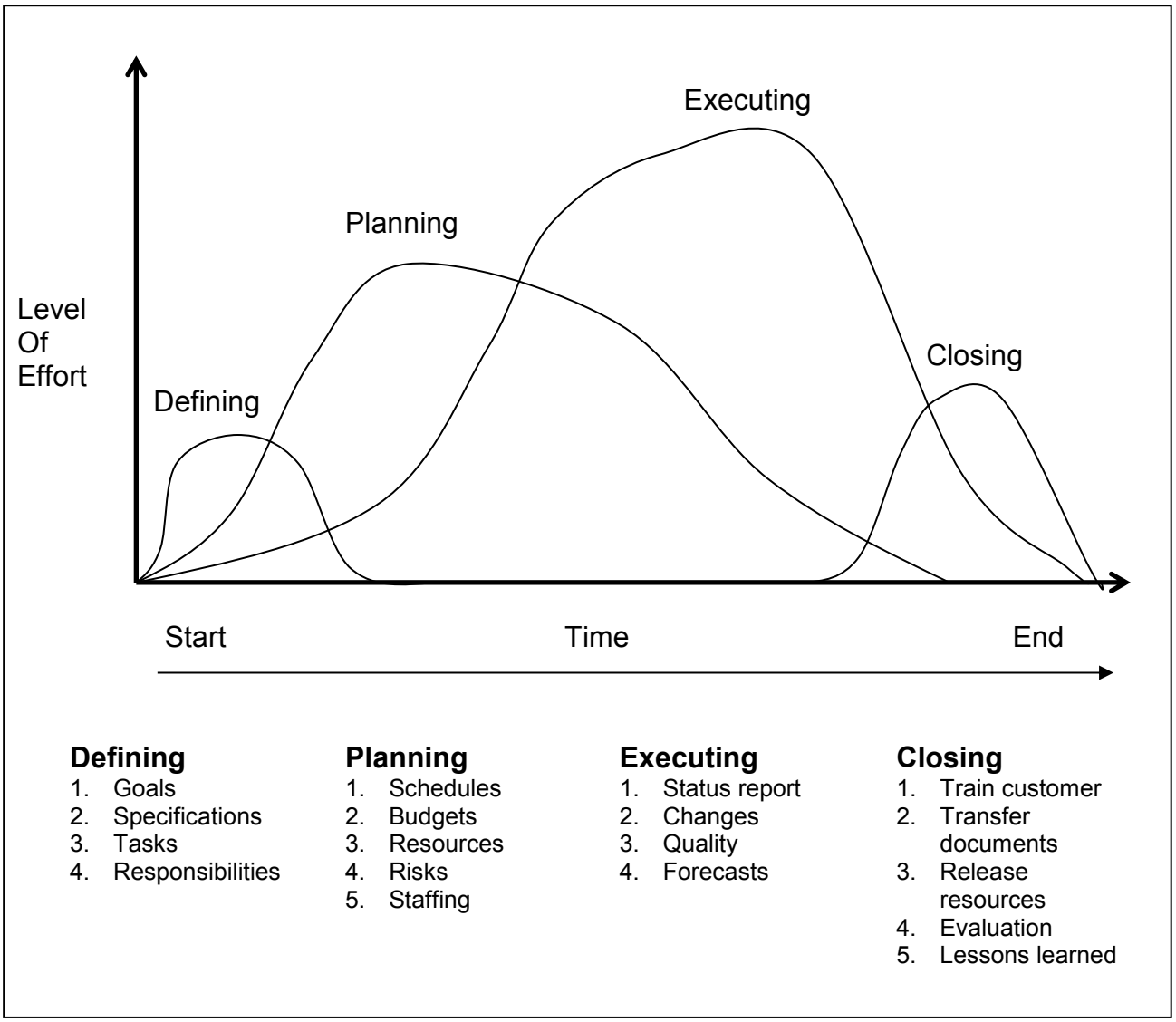

Figure 2.3: Project Life-Cycle

Source: Larson, E. W. & Gray, C.F. 2011. **Project Management: The Managerial Process. 5th ed.** New York: McGraw-Hill/Irwin. p7.

The project life-cycle starts when the project is approved. The level of effort gradually increases from when it is defined through the formulation of goals, development of specifications, forming of teams and the assigning of responsibilities. The planning stage increases the level of effort even further, as the broader scope details are defined, quality levels are established, schedules are developed, budgets are formulated, resources are allocated and the risks are identified (Larson and Gray, 2011). The levels of effort reach their peak during the

executing stage where most of the project work is realised. The desired end-product is produced here through rigorous control of scope, time, cost, resources and other key variables. It is at this stage where the project team is faced with pressure physically, psychological and even emotionally. The closing stage of the project sees the level of effort declining as the project draws towards completion. The main focus at this stage is on delivering to the customer the final product of the project, demobilising the project resources, and reviewing the project holistically from a performance and learning perspective (Larson and Gray, 2011).

The completion of project stages can be identified with the associated deliverables for each stage. These tangible outputs are verified at review points in order to ensure that projects are ready to proceed to the next project phase and to detect errors and resolve them in a cost-effective manner. These review points are referred to as stage gates or phase exits or kill points (Project Management Institute, 2013). The project life-cycle becomes helpful to project teams in terms of understanding the key project decision steps, such as approval funding, scope and contracts. The understanding of a project life-cycle by the project team enables them to have a holistic view in terms of the key goals that they must achieve in the short run, in order to achieve the overall project goals in the long run. It also assures that fundamental project problems that have an important bearing on the overall project are addressed, rather early at a low cost than later at a higher cost.

2.6.2.3 The Project Management Process

The project management process has various tools that are applied within the project life-cycle that are beyond the scope of this research. However, there are several key aspects that are fundamental in terms of value generation and the delivery of projects.

First, the scope of the project must be determined and documented at the planning stage, in order to help the project stakeholders to make a clear end-state that will be delivered through the project. This is done through a project charter or scope statement. The project charter is generally issued by top management to the project manager, in order to give a brief scope outline, indicate the risk limitations,

clarify the customer needs, inform of the spending limitations and (sometimes) specify the project team (Larson and Gray, 2011).

Second, the project scope must be defined further in terms of the elements to be delivered and this is known as the work breakdown structure. These elements are further broken down to their lowest levels of work or work packages. The work breakdown structure is an alliance of the components within the project in order to identify deliverables that define the overall project scope (Project Management Institute, 1996). The work breakdown structure provides the hierarchical framework that shows the relationships between the project elements and enables the assessment of cost, time and technical performance (Larson and Gray, 2011).

Third, scheduling of the project activities is necessary to determine the overall duration of the project. Schedule development is the analysis associated with the streamlining of activities, determining the lead-time for each activity and the manpower required to support the activities in order to form a project schedule (Project Management Institute, 1996).

Fourth, the cost budgeting of the total project cost enables the assigning of costs to individual work packages (Project Management Institute, 2013). The budget is rearranged in line with the schedule to formulate cash-flow so that the funds that need to be continuously available can be known.

Fifth, achieving good quality in the delivery of the project is fundamental towards its success. Quality is all the product and service attributes that give it its ability to achieve match confirmed and unconfirmed (Render et al., 2009). In the eyes of customers and top management, the project should deliver quality that meets or exceeds their expectations in terms of cost (budget), time (schedule) and performance (scope) (Larson and Gray, 2011). Figure 2.4 demonstrates how these three elements are related to the quality of the project.

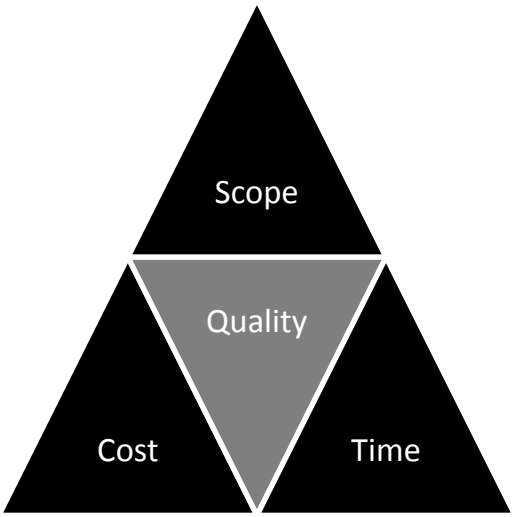

Figure 2.4: Project Management Trade-Offs

Source: Larson, E. W. & Gray, C.F. 2011. **Project Management: The Managerial Process. 5th ed.** New York: McGraw-Hill/Irwin. p106.

Figure 2.4 shows that the pursuit of achieving quality in a project becomes a trade-off between scope, time, and cost. While, typically, customers would like products of the highest quality, in accordance with their scope, in the shortest time and the lowest cost. However, high-quality products have expansive scope requirements that take long to achieve and therefore cost much more (Larson and Gray, 2011). Projects should therefore be prioritised between scope, time and cost, so that it achieves quality in line with the customer requirements.

Sixth, in order for the project to meet the intended quality discussed above, project controls should be utilised for regular progress checks in order to compare the plans with actual results. This assessment enables the identification of problems and taking appropriate corrective action at the earliest possible time and the lowest cost possible (Larson and Gray, 2011, Project Management Institute, 2013). There are several project management tools for controlling items such as scope, time, costs, quality, risk, etc. One such tool is what is called Earned Value or Earned Value Analysis. Earned Value (also known as the 'budgeted cost of work performed' or BCWP) is “an approach to monitor the project plan, actual work

and work-completed value to see if a project is on track or not. Earned Value Analysis shows how much of the budget and time should have been spent with regard to the amount of work done so far" (Sharma, 2013, p.37). Through the monitoring of a further two indicators [i.e. Planned Value (PV) or Budgeted Cost of Work Scheduled (BCWS) and Actual Cost (AC) or Actual Cost of Work Performed (ACWP)], projects cost and schedules can be effectively controlled especially in the case where a portfolio of projects or a program is managed by one project office. Coincidentally, Earned Value Analysis brings the term value that is central to this research; it is clearly not to be confused with the customer value or PCV. Earned Value Analysis indices are a broader subject beyond the scope of this research. One of the alternatives to Earned Value Analysis is found within the **Pr**oject **In C**ontrolled **E**nvironments (PRINCE2) system of managing projects. PRINCE2 uses work package control to instill controls throughout the project. Work package control achieves this by ensuring that the individuals working on the project report the status of the agreed checkpoints (i.e. scope, time, cost, quality, etc.) and any other agreed prompts to the project manager (Widerman, 2002).

Lastly, at the closing phase of the project, a review of the entire project is conducted in terms of the project team performance and the lessons that have been learned throughout the life-cycle (Larson and Gray, 2011). This helps the project team and the organisation to assess its human capital capabilities in meeting the challenges that come with the delivery of projects. At the same time, the lessons learned can provide new knowledge that can be utilised in the future as a competitive advantage in dealing with problems with similar challenges. These aspects are some of the key considerations that are necessary towards ensuring that projects realise the intended value creation. This responsibility largely rests with the project manager. We will discuss the role the project manager is expected to play in a project.

2.6.2.4 The Role of a Project Manager

Though the project manager is simply defined as "the individual responsible for managing a project" (Project Management Institute, 2013, p.555), certain comparisons can be made between the project manager and the project. Similar to

a project, the project manager manages a unique and temporary endeavour that is achieved over a fixed period of time. They form project teams that are typically made of individuals who support the project on a part-time basis and outsiders (e.g. consultants, contractors and vendors). So while they do not always have direct authority over some or part of the project team, they are responsible for achieving performance through giving direction, co-ordination and integration of project issues. Through the use of the right team members (in their different fields of expertise), at the right time, project managers are able to use their rudimentary knowledge to make the right decisions (Larson and Gray, 2011). Clearly, the project manager takes accountability for how the project unfolds, even though he may not have direct authority over all individuals participating in the project. The project manager must therefore possess strong general management skills to influence the project, such that it aligns with the organisational strategic objectives (Project Management Institute, 2013).

Until recently, authors believed that project managers needed to have nine core skills or Project Management Knowledge Areas (Widerman, 2002, Florescu, 2012). New developments from the Project Management Institute (2013) have suggested that there are ten Project Management Knowledge Areas that are important the project management field. Roeder (2013) supported this view that suggests that project integration management, project scope management, project time management, project quality management, project human resource management, project communications management, project risk management, project procurement management and project stakeholder management make up the ten Project Management Knowledge Areas. Table 1.1 below summarises the views from these authors.

Project Management Knowledge Areas (Project Management Institute, 2013)	Comparison with other authors		
	(Widerman, 2002)	(Florescu, 2012)	(Roeder, 2013)
Project Integration Management	Yes	Yes	Yes
Project Scope Management	Yes	Yes	Yes
Project Time Management	Yes	Yes	Yes
Project Cost Management	Yes	Yes	Yes
Project Quality Management	Yes	Yes	Yes
Project Human Resource Management	Yes	Yes	Yes
Project Communication Management	Yes	Yes	Yes
Project Risk Management	Yes	Yes	Yes
Project Procurement Management	Yes	Yes (see Acquisition)	Yes
Project Stakeholder Management	No	No	Yes

Table 2.1: A summary of developments on Project Management Knowledge Areas

Source: Developed by author after the references of the paper.

By definition, a Project Management Knowledge Area refers to “an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques” (Project Management Project Management Institute, 2013, p.554). By implication, success in these areas in a project should translate to project success. These ten areas suggest some form of success criteria that project managers should achieve in order to achieve value for their customers. The project manager therefore needs to be able to utilise various skills sets that have been developed into tried and tested practices.

2.6.3 The Project Management Practices

Projects are intended to achieve business results. However, in the daily execution of the project, project managers and project teams are more focused on the project aspects than the business aspects of the project. This may lead to departure from the intended goals and poor business results if it is not effectively controlled. Strategic project management proposes that the use of traditional project management tools [such as critical path, bar charts, PERT (which means Program Evaluation and Review Technique) do not replace thinking, as such new strategic thoughts are required to enhance traditional project management tools (Patanakul and Shenhar, 2011). Strategic thinking, as it was originally used in the military, implies 'planning to win' (Patanakul and Shenhar, 2011). Project strategy therefore includes making good choices and taking good actions about the choices made. This is captured in the project strategy definition that says it is "...the project perspective, position and guidelines for what to do and how to do it, to achieve the highest competitive advantage and the best value from the project" (Patanakul and Shenhar, 2011, p.8).

The three elements of the project strategic definition by Patanakul and Shenhar (i.e. perspective, position and guidelines) are shown in Figure 2.5.

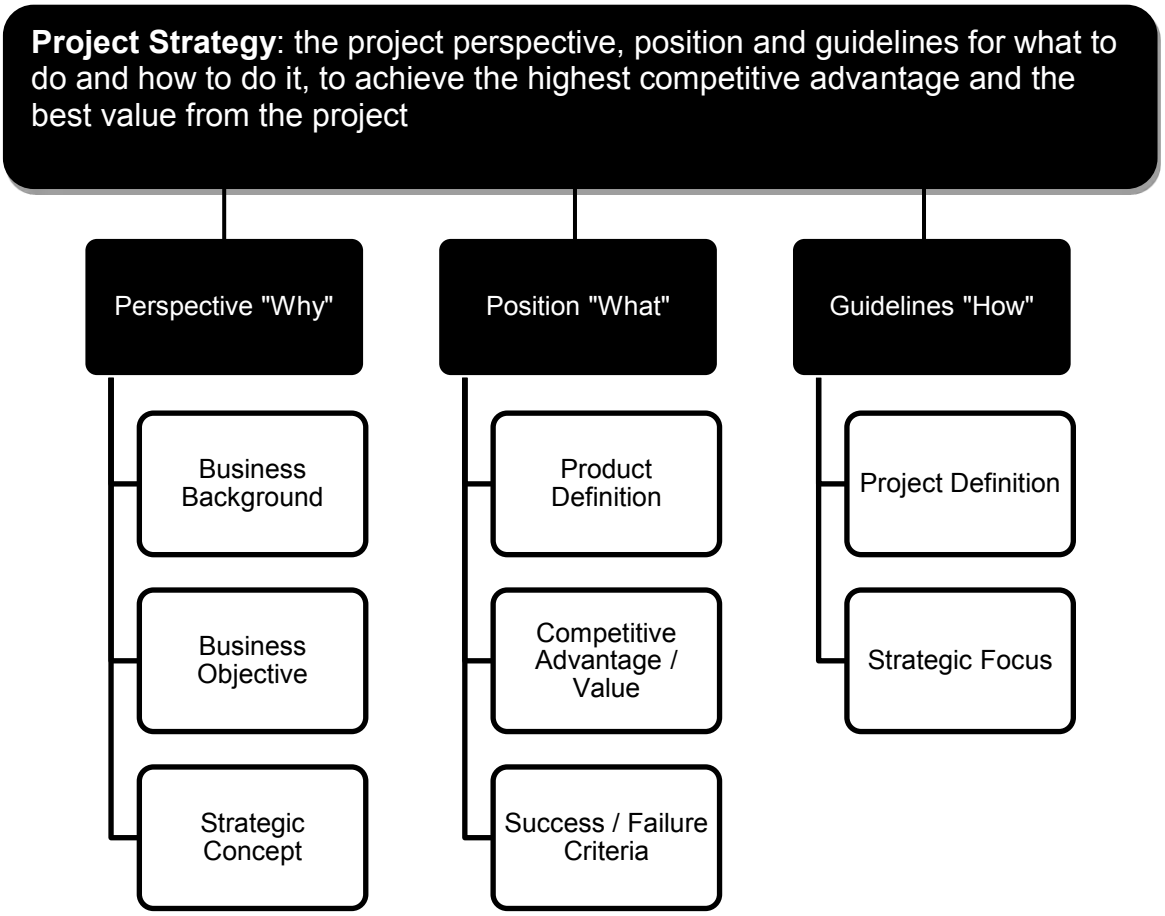

Figure 2.5: Project Strategy and its Components

Source: Patanakul, P. & Shenhar, A.J. 2011. **What Project Strategy Really Is: The Fundamental Building Block in Strategic Project Management**. New Jersey: John Wiley & Sons, Inc. p8.

The first pillar of the project strategy is perspective, which tells us the reason(s) why the project is necessary. This includes the business background under which the project is justified, the objectives that have been set for the project to accomplish and the strategic concept that will dominate project creation and roll-out. The second pillar concerns what will be the position achieved by the project for the business or what is the desired end state at project completion. The position gives us the product definition in terms of products and services that will be available at the end of the project, the competitive advantage or value that will be created for the business as the core means of winning the customers and the

success or failure criteria that will be used to judge whether the project met its intentions or not. The last pillar concerns the guidelines that will be used to form the plan that shows us how the project will unfold. The plan encompasses the project definition in terms of scope, time, costs and the quality associated with it. The plan includes strategic focus that will be encapsulated in the mind-sets and behaviour of the project team in order to maintain the spirit of winning the business battle. While the elements of this definition are not new in project management terms, their integration gives better business focus to gaining competitive advantage or creating value (Patanakul and Shenhar, 2011). This is short of suggesting that competitive advantage in the open market is similar to value in the non-open markets. Alternatively, competitive advantage in the context of a company should be considered as the value it aims to create and offer to the market. In other words, strategic project management advocates that projects focus on delivering maximum value to both the company and its customers.

The challenge of creating and realising value through projects goes beyond the science of the technical aspects such as scope, work breakdown structure and schedules. It also needs the art of handling socio-cultural matters such leadership, problem solving, teamwork, negotiation and politics. The project manager's dilemma is to effectively balance this dichotomy of needs (Larson and Gray, 2011). The demonstration of wider general management skills is an essential foundation to project managers (Project Management Institute, 1996). A project manager must therefore be professional in order to advance the strategic focus that is necessary for the project to success.

2.7 Capital Projects Link to PCV

In order for an organisation to grow its business, it needs to plan and manage its long-term investments through capital budgeting (Firer et al., 2008). Capital budgeting is utilised to identify investment opportunities that will bring more cash flow then what it would have cost the entity. The selection of projects should be such that they bring greatest value and so the capital budgeting decisions are a key dependency on the long-term financial viability of the entity (Noreen et al.,

2011). Capital is, in financial terms,"the net assets or equity of the entity" (Graham, 2007, p.273). It is the money or the equivalent thereof that has an income-generating capability.

In the case of Transnet, various capital expenditure projects have occurred in recent years (Creamer, 2011a). Transnet's drive for capital investment is one of the key pillars underpinning the South African government's economic growth and job creation objectives (Creamer, 2011b). According to the Presidency, from 2009 until March 2013, the South African government spent R360 billion on infrastructure projects (2013). These projects are aimed at capacitating the transport system, starting with ports and capacitating existing ports to even higher levels. They increase capacity of the logistics corridors and further develop inland terminals (Presidency, 2013). Under challenging financial circumstances, government wants to grow economic activity through continued spending of up to R827 billion from 2013 to 2015 through the fiscal policy and State-Owned Companies. According to the National Treasury, R400 billion of this will be funding capital projects for State-Owned Companies such as Eskom and Transnet through a combination of revenue, borrowing and treasury guarantees (Treasury, 2013). The government supports the need for South Africa to spend towards a strong economic infrastructure that will underpin economic and social intentions. However, it reasons that spending should be tested whether or not it yields the value for the money spent (Treasury, 2013). It is this challenge that this research hopes to answer. In more specific terms, the research will demonstrate:
"*To what extent is performance in the delivery of capital projects at TPT perceived to be yielding value for the terminals*?"

The quest to answer the question above will be discussed further, and more specifically, the challenge of quantifying value such that it can be seen if it has been received by the customer. The methods of measuring customer value will be explored in order to see which method could have a practical fit to the capital projects executed and delivered within TPT.

2.8 Measuring Customer Value

A common challenge from the five PCV approaches is that they must provide marketing managers with the ability to understand how much customer value is generated or received in a purchasing experience (Sweeney and Soutar, 2001, Ulaga, 2001, Helkkula and Pihlstrom, 2010). The intangible nature of customer value makes it difficult to have a quantitative method of determining it from a customer's purchasing experience (Ivanauskienė et al., 2012, Ervasti, 2013). The developments in this area of research are reviewed below, with the hope of understanding how value has been measured in the past. What are the conditions that determine the type of instrument that should be used? Six tools are discussed in order to help answer these questions.

2.8.1 Gale's CVM

The earliest efforts to measure customer value were suggested by Gale using the customer value management (CVM) tool. This method measured the relationship between the customer-perceived quality and the relative price (Gale, 1994). Customer-perceived quality means quality of that product as perceived by the market in that field, while, relative price refers to the ratio between the price paid and what the market perceives as the fair price regardless of whether it is high or low (Gale, 1994). This relationship is plotted graphically, on what is referred to as the customer value map, and as shown in Figure 2.6.

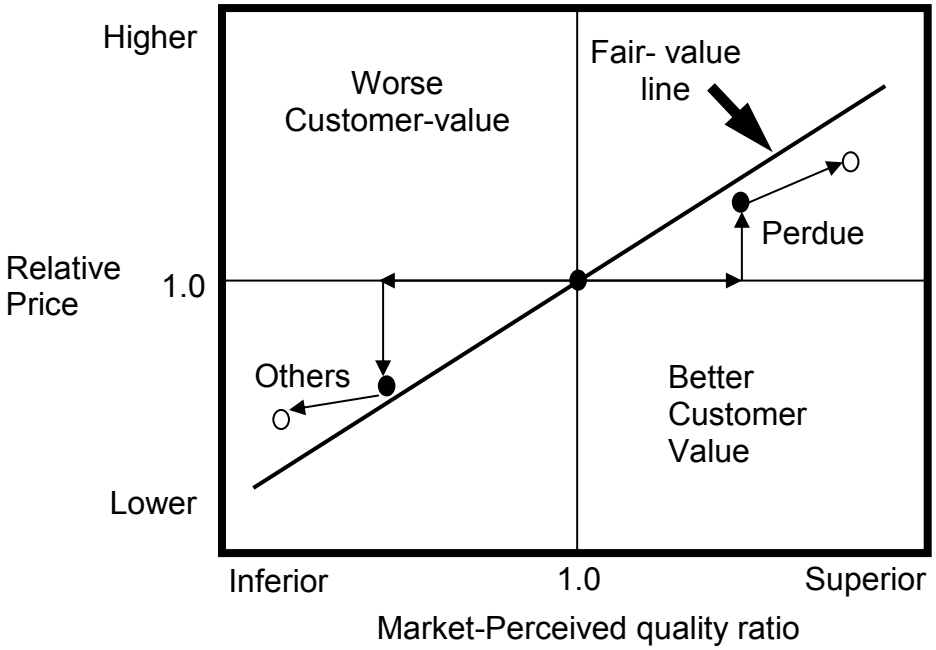

Figure 2.6: Customer Value Map: Chicken Business

Source: Gale, T. G. 1994. **Managing Customer Value: Creating Quality & Service That Customers Can See**. New York: The Free Press. p34.

This *cognitive approach* measurement simply suggests that the collective market opinion on both the PQ and relative price will determine a fair-value for that product. This fair-value line acts as a reference point to compare all products, regardless of whether they are cheap or expensive. Gale uses the example of Perdue farms to show that it creates better value for itself by moving from others on the centre of the value map to a growth and prosperity zone with higher relative prices and superior market-perceived quality. In response, the others in the market lowered prices and their quality. This movement helps show how the market is behaving. In short, entities that want to grow their markets must be able to offer products and services that can be plotted below the fair-value line and those above the fair-value line lose their market share. Gale's method assumes that value is a function of price and quality and no other variable.

2.8.2 Customer Value Analysis and the Finite Mixture Methodology

The work done by Gale in developing the CVM method of measuring value has been enhanced through the formulation of the customer value analysis method. This method involves a structured analysis of the driving factors of PCV (i.e. PQ and perceived price) and their levels of importance in forming the customer's perceptions (Desarbo et al., 2009). It uses finite mixture modelling to analyse the antecedents behind customer value and the weighting from the customer segments. The reason for this is to avoid aggregating the data from differing segments of the market into a statistic that defines none of all the segments that it seeks to represent (Desarbo et al., 2009). Similar to CVM, it assumes that PCV is a function of perceived price and PQ, which can be represented by an equation. However, it goes further to argue that PQ can be represented as a second equation that shows PQ as a function of various customer ratings, such as power reliability, preventative maintenance, repair service, account representative, technical support and customer service (Desarbo et al., 2009). It includes descriptive factors about the firm and demographic variables that define the specific sample used. By using the two simultaneous equations, it indicates the drivers of PCV while it includes heterogeneous factors of the sample under observation. Through the use of a series of mathematical calculations, the customer value analysis method provides understanding for the drivers of PCV and its relationship with the components that describe it.

The shortcoming to this model is that, while it considers various factors in determining PQ, it only utilises PQ and perceived price in its analysis. This is contrary to a wide range of studies that suggest that PCV is a multi-dimensional construct (Sweeney and Soutar, 2001, Fiol et al., 2007, Ivanauskienė et al., 2012, Ervasti, 2013, Connie and Yu-Hsu Sean, 2013, Morar, 2013, Vieira, 2013). It has also not been tested beyond the electric utility setting and therefore needs to be further tested in a wider range of circumstances (Desarbo et al., 2009). Thus, there were insufficient research references to support Desarbo's customer value analysis method as the sole basis of this study.

2.8.3 The PERVAL System

One of the significant steps towards the research of measuring post-purchase valuation of a product proposed the measurement method called the perceived value scale (PERVAL). This method measures customer value, based on the principle that customer value is a function of four dimensions, namely (1) emotional value (EV) , (2) social value (SV), (3) functional value I (i.e. price or value of money) and (4) functional value II (i.e. results of the product or PQ) (Sweeney and Soutar, 2001). This scale utilised 19 items that were categorised into the four dimensions. The key contribution from PERVAL is that it was able to demonstrate that value is a multi-dimensional construct that not only included functional aspects (price and PQ). The importance of emotions and the social implications in a purchasing process was able to get recognition as key drivers to the decision-making process. One of the limitations indicated in the PERVAL study is that construct of value is not entirely limited to the four dimensions outlined here. There are other dimensions such as conditional value that were insignificant for the purpose of consistently measuring PCV (Sweeney and Soutar, 2001).

PERVAL only measures the post-purchase valuation of a product and not the perceived overall value of a purchase (Sanchez et al., 2004). In other words, the model does not test the experience of using the product which may reveal other latent findings about the product which may change the overall perceived value of the product. It is suggested that is an area for further investigation to enhance their measurement scale (Sweeney and Soutar, 2001).

2.8.4 Smith and Colgate Balanced Scorecard

Smith and Colgate (2007) used existing market research work from other authors to formulate a framework for understanding customer value. They proposed a measurement tool for measuring customer value, which is somewhat similar to Kaplan and Norton's balanced scorecard used in business as a measuring tool for strategic management. Smith and Colgate's method assumes that there are four major types of value that can be created by an organisation, namely (1) functional value, (2) experiential value, (3) symbolic value and (4) cost value. They proposed that, while there may be more types of value, these four were considered to be the

most important for an organisation creating customer value. It is suggested that (1) information, (2) products, (3) interactions, (4) environment and (5) ownership are the most important sources of value that are created by the value chain system (Smith and Colgate, 2007). Out of this, one can compare the 4x5 table in order to measure customers in each dimension or be able to describe the nature of customers in that organisation. Each of the expressions on the 4x5 table is measured and summed up with other expressions to determine value in each of the dimensions. This method therefore shows which aspects of value are perceived to be of higher or lower value. It enables an organisation to give focus to areas that are not showing to be giving value to their customers. Notably, this measuring system utilises a combination of the dimensions already proposed by the various authors, but it applies them in a unique and logical manner. In essence, it says value is not created in the value chain, but is experienced by the customer, through a combination of interacting with the product, experiences with the people (or the system), economic loss or gain and the symbolism associated with the experience (Smith and Colgate, 2007). Finally it says that the customer's perception on this complex arrangement defines the customer value.

2.8.5 The GLOVAL System

The PERVAL concept of measuring customer value has been further developed to what is referred to as the GLObal purchase perceived VALue (GLOVAL). GLOVAL brought with it improvements that were indicated on the PERVAL research as areas for further investigation in order to enhance their measurement scale (Sanchez et al., 2004). This method focuses on measuring functional value (establishment, personnel, product and price), EV and SV. It therefore differed with the PERVAL system in that it measured more than the post-purchase valuation of the product but the 'overall' value of a purchase. In other words, in its evaluation of perceived value it includes the consumption experience. The consumption experience is a result of the combination of interactions with the establishment, its personnel, the quality of the product and the views about the price paid. These contribute towards the functional value.

2.8.5.1 Functional Value

Functional value is the logical and financial assessments made by the customer which include the quality of the product and service (Sanchez et al., 2004). It is based on the construct of economic utility realised from the attributes of the product or service (Fiol et al., 2007, Ivanauskienė et al., 2012). It includes the installations (or establishment offering), the professionalism of the contact staff, PQ and perceived price (Sanchez et al., 2004, Roig et al., 2006). The functional value of the establishment (FVE) seeks to show us whether or not the environment is considered to be fit for the purpose it aims to achieve (Ivanauskienė et al., 2012). The functional value of quality (FVQ) tells us whether quality is perceived to be embedded in the product or service offered (Ivanauskienė et al., 2012). The functional value of personnel (FPP) assesses how professional is the contact staff that is offering the product or service seen to be (Ivanauskienė et al., 2012). The functional value of price (FVP) relates to the assessment of whether or not the price is perceived to be justifiable in the eyes of the customer (Ivanauskienė et al., 2012). Functional value dimensions therefore look at things that help earn value and those that cost in both monetary and non-monetary terms (Fiol et al., 2007). Functional value explains the aspects that were thought to define customer value in the earliest studies on the subject. Customer value is now understood to include other dimensions, such as SV and EV, discussed below.

2.8.5.2 Social Value

SV means that consumer recognition by society is influenced by the things that they consume (Fiol et al., 2007). It means that it is of importance to the consumer that the consumption of a product or a service gives acceptance to the social environment (Roig et al., 2006, Ivanauskienė et al., 2012). Brand reputation and brand image are important pillars that stimulate social value (Sanchez et al., 2004). Social value has to do with the outcomes for the various targeted markets of the purchase and the utilisation of the product or service. In the industrial sector, this involves reputation and the how social image of an organisation is perceived (Fiol et al., 2007). Social value relates to the desired end-state that the customer hopes to achieve through the purchase. The more such an end state is realised the more social value is gained.

2.8.5.3 Emotional Value

The purchase experience evokes feelings or emotions through products and services (Roig et al., 2006). EV is about value derived from feelings and relations shared between the consumer, the product or service and other people involved in the purchase experience (Fiol et al., 2007, Ivanauskienė et al., 2012). Trust and taste are said to be the basis which emotional variables focus on (Sanchez et al., 2004). Experience, personalised treatment and interpersonal relationships are the three factors that contribute towards the determination of EV. This EV is based on interaction experience of exchanging information, sensory information, and emotions (Fiol et al., 2007). Interactions between the service provider and the customer lead to customer learning. The service provider's role helps the customer utilise their resources more effectively (Payne et al., 2007).

2.8.6 Review of the Measuring Tools

The measuring tools available in the literature have evolved from the early works of using CVM. Further enhancements to CVM that came with the customer value analysis method have not gained much support from other authors. The PERVAL system has been significantly utilised by authors as a source of reference and a meaningful tool to measure PCV (Sanchez et al., 2004, Roig et al., 2006, Fiol et al., 2007, Smith and Colgate, 2007, Graf and Maas, 2008). Further enhancements to PERVAL system have resulted in the GLOVAL scale of measurement which has been tested on a range of empirical studies (Sanchez et al., 2004, Roig et al., 2006, Fiol et al., 2007, Ivanauskienė et al., 2012). While the Smith & Colgate balanced scorecard measuring system utilises well-research theoretical concepts, it is yet to be tested in a range of circumstances to give it internal validity. It is on these grounds that this research is based on utilising the GLOVAL scale of measurement. What is of interest in this case is how the questionnaire will be aligned to the TPT scenario of determining value in the delivery of internal capital projects.

2.9 The Theoretical Fit behind GLOVAL

The challenge of conducting customer value research in the context of TPT is that the delivery of the capital projects is an internal process (i.e. both the customer and the client work for one organisation). This, in principle, does not fall outside the definition of customer value, but, it poses a new dimension that has not been covered and that makes this research unique. In order to calculate CVM for example, customer-perceived quality is required. However, customer-perceived quality is a function of perceptions of the general market in that field. CVM therefore cannot be applied in the context of TPT where the internal customers do not have alternative service providers to compare with. The internal service provider represents the complete market. It is therefore important that the PCV measurement tool used for this research is relevant and practical in the TPT setting.

In the development of the GLOVAL scale, it was proposed that it should be tested outside Spain, in differing market heterogeneity contexts and market sectors, to see how it impacts the importance of perceived value dimensions (Sanchez et al., 2004). It was tested further in the Spanish banking sector (Roig et al., 2006), the Spanish ceramic tiles cluster and the Lithuanian retail banking sector (Ivanauskienė et al., 2012). This research therefore provides an opportunity to further test these factors in the project management environment. the GLOVAL scale in the project management sector in a different market (TPT in South Africa). The external validity of the GLOVAL scale will be boosted through its successful use in this research. This could motivate for further similar testing in other sectors and circumstances.

The changing of sector conditions warrants the adjustment of the questions, such that they remain relevant to the conditions at hand. Through this research, it should be demonstrated how the questionnaire should be adjusted without losing internal validity aspects that would have already been achieved by the original authors. This research will aim to broaden knowledge in this academic space. In this context, GLOVAL dimensions such as social value must be assessed carefully, considering that customers are internal. Some customer value

dimensions such as FVE may to some extent, be difficult to apply to all sources of value.

This research will aim to utilise the broader theory on projects discussed above to show alignment in the application of GLOVAL in the context of the field of project management in general.

2.10 Summary

This chapter has given a structured view to understand PCV from its marketing roots, making specific considerations about what value is and how it can be distinguished from values. It then explored PCV in terms of its distinction from the broad concept of value through definition and discussing the approaches that are used in its theory. It followed this with an address of the common misperceptions about value that should be separated from this topic. This was followed with a discussion on project management and the key aspects to be considered and understood in relation to this topic. It went on to unpack the link between capital projects and PCV in this research. The chapter moves on to exploring how customer value has been measured utilising a range of tools that have been developed. It discussed the salient issues about these tools. The chapter concluded with the formulation of a theoretical framework that has been adopted as the foundation of the research. The theoretical framework will become the basis for discussing the research methodology in the next chapter.

3. CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter develops a methodical approach that enables the subjective construct of PCV to be simplified and analysed. It used the aim and objectives of the research to formulate a framework and later developed the model for conducting the analysis. Several statistical techniques and calculations were used to develop and validate the model that is referred to here as the 'PCV research case equation'. This equation was used to test the objectives and the aim. The chapter proposes that PCV can be measured through the PCV research case equation as determined by the sample being tested, based on their preferences in terms of what factors of PCV are more important than others.

3.2 Aim and Objectives of the Research

In Chapter Two, it was discussed that the South African government is utilising infrastructure development as a driver of economic growth. The infrastructure programmes are largely pursued through state-owned companies such as Transnet. TPT is investing in such projects which are executed through its CPD. The high spending associated with these capital project has, however, raised the question within TPT circles that gave rise to the research problem that says: "*To what extent is the delivery of capital projects at TPT perceived to be yielding customer value for the terminals*?"

It is therefore hypothesised that: *The terminal representatives for the internal capital projects in KwaZulu-Natal are of the perception that the customer value that they receive is more than 80%.*

As discussed in Chapter One, in order for the aim of this research to be achieved, the research had to determine:

- The functional value of the department/establishment [i.e. the CPD] (FVE).

- The functional value of CPD personnel – Professionalism (FPP).
- The functional value of products and service delivered – Quality (FVQ).
- The functional value of price of capital projects (FVP).
- The emotional value of capital projects (EV).
- The social value of capital projects (SV).

The answer to the research question would be of great significance to investment programmes within Transnet and, more specifically TPT, given that investments are envisaged to continue in the years ahead. This benefitted the CPD by assessing its effectiveness and the reasons for its successes or failures at TPT. It gave a reflection to terminals whether they are achieving their intentions or not. In addition, the TPT and Transnet authorities making investments decisions are in a position to use this for similar studies in future, to test the meaningfulness of their decisions. Beyond TPT, the research could assist Project Management Offices that run internal projects with a method to use in developing their own PCV models. It may even assist other organisations outside the project management field who may want to measure PCV for external customers to develop their own PCV models.

Through answering the research question, the research aimed to bring various learnings to TPT, its executives and Capital Investment Committee. The research wanted to indicate whether the TPT investment programme is perceived to be yielding customer value for the business or not. If so, to what extent was this? It also wanted to show the projects factors that the terminals found to be the most value adding or the least value adding. This would determine more clearly how the terminals felt about the capital projects delivered to them. It would also determine if the terminals think that the projects delivered to them have helped them achieve their strategic objectives.

3.3 Respondents and Location of the Research

The topic of this research focuses on the internal customer receiving the projects within TPT. They are the custodians of what gets delivered at the terminal. The

respondents in this instance are terminal representatives, as defined in each project charter of the projects. They have the responsibility to participate in the project-related meetings that are convened by the project manager from time to time. They are typically aware of the intentions stipulated in the business case that had to be approved by TPT in order for the project to materialise. They are not only close to the strategic objectives of the business, but are also informed of the performance targets that the project is mandated to achieve in terms of scope, time, cost and other broader imperatives. This group of people usually has a wide range of experiences and responsibilities. They are therefore able to give meaningful guidance in terms of project risks and how they can be mitigated. Most importantly, they are able to make an objective judgement in terms of value creation in the delivery of projects as they have a reference point from the business case.

The people that participate in these projects differ in terms of authority, but typically start from supervisory level, to junior management, middle management and executive management, depending on the project. The research questionnaire was therefore made simple and clear enough for any respondents to easily understand and answer the questions.

The research was conducted within the TPT Terminals in KwaZulu-Natal. These terminals were located in the ports of Durban and Richards Bay. The questionnaire was manually issued to the respondents. Five TPT terminals were utilised for testing, namely:

- Richards Bay Terminal (RBT),
- Durban RoRo Terminal (DRT),
- Maydon Wharf Terminal (MWT),
- Durban Container Terminal (DCT) Pier 1, and
- Durban Container Terminal (DCT) Pier 2.

Probability sampling was preferred in this case, given the varying investment levels resulting in differing activity levels from various terminals. The research wanted to assess differential parameters of the varying number of elements in

each terminal. Though the disproportionate stratified random sampling technique was theoretically ideal for applying in this case (Sekaran and Bougie, 2009), the high ratio between the sample size and the population, together with the practical possibility of not finding the selected respondent at the time of the visit, would have proved to be problematic. The simple random sampling technique was the most pragmatic option and therefore the preferred sampling method.

The methodology used in this research, once completed, will serve as a basis in case of any future longitudinal research.

3.4 Data Collection Strategies

The population was developed based on the data from project charter records, and in some instances project-specific meeting minutes filed within the department. The population size was found to be 82 individuals. The sample size of 69 (minimum) would give this research the necessary precision and confidence level of 95% (Sekaran and Bougie, 2009). During the actual data collection, a total of 53 respondents completed the questionnaire, due to the unavailability of some at the time of testing. This affected the confidence level, however, it was still sufficient for the purpose of making inferences (Keller, 2009). The primary data collected came from questionnaires that were manually responded to and administered by the author. The sample was contacted through planned visits to the sites whereby the respondents physically responded to survey sheets.

3.5 Research Design and Methods

It is important to pre-determine the method to be used for testing a hypothesis. If a research develops and quantifies the nature of a construct that has not yet been formulated, then qualitative research would be justifiable (Sekaran and Bougie, 2009). In formulating and developing findings about the construct, it is necessary to create a conviction that such findings have been made through critical examination of the subject (Korkman, 2006). However, if the research uses predetermined methods to transform raw data into meaningful information, then it

is considered to be quantitative research (Render et al., 2009). Hence the reason for conducting quantitative research in this case.

3.5.1 Description and Purpose

In this case, the construct of PCV was already developed by various experts in their respective fields. However, what was of interest to this research was how much PCV the terminal representatives were finding with the delivery of internal capital project. In other words, the research sought to find the quantum of the respondents that were finding PCV in the delivery of internal capital projects. Through the research, it would be known which aspects were problematic in the delivery of internal projects. The attention they require in general, not only in KwaZulu-Natal but through all the terminals within TPT, would be known.

This research followed the quantitative methodology of conducting studies of this nature. Quantitative studies formulate meaningful information by utilising an approach that defines the problem, develops a model, acquires input data, develops a solution, analyses the results, and implements the solution (Render et al., 2009). This chapter illustrates how quantitative techniques were utilised to methodically achieve this. The construction of the quantitative research instrument below and the method used to recruit respondents demonstrate this.

3.5.1.1 Construction of the Instrument

Hypothesis : *The terminal representatives for the internal capital projects in KwaZulu-Natal are of the perception that the customer value that they receive is more than 80%.*

H_0 : $\mu \leq 80$ (Null hypothesis)

If this was proved to be correct, it would suggest that there may be a need to significantly review the project delivery process and alignment with internal customers. There could be a broader negative view towards the CPD that needs strategic interventions in order to change it.

H_1 : $\mu > 80$ (Alternative hypothesis)

This scenario may suggest that while most of the terminal representatives may be thinking positively about the projects delivered to them, there may be minor areas that warrant refinement from the CPD in order to take value creation to new heights.

The above hypothesis was expressed as a theoretical framework in Figure 3.1 for testing the population mean of PCV.

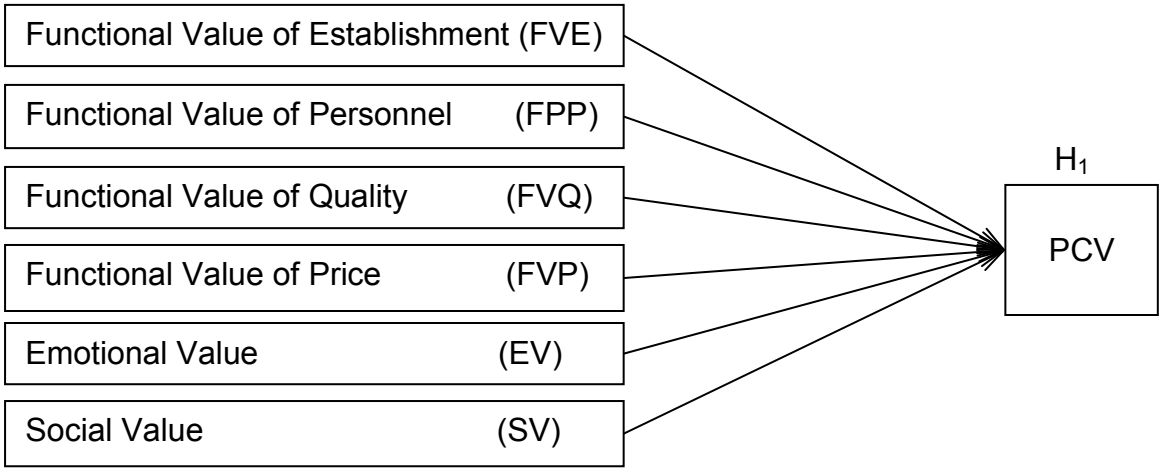

Figure 3.1: Theoretical Framework Link between PCV and Research Objectives

Source: Sanchez, J., Calliarisa, L., Rodriguez, R.M. & Moliner, A. 2004. **Perceived Value of The Purchase of A Tourism Product. Castellon**: Tourism Management. p406.

As discussed in Chapter Two and illustrated in Figure 3.1, the six elements that make up PCV have been determined through extensive work developed progressively by various authors and concluded by Sanchez, et al (2004) and Fiol, et al (2007). In their efforts to formulate a scale to measure customer value, they used factor analysis to establish factors that are important in measuring customer value. The factors contributing to PCV are not in question in this research. What is of importance is how the sample finds one factor to be more important than the

others and also how they feel the projects have delivered on each of the factors. The holistic representation of the theory underpinning this research has therefore been assured through the academic work done by these authors. The theoretical model is built from the conclusions of Sanchez, et al (2004) and Fiol, et al (2007).

In order for this research to test how much value was created through the delivery of capital projects, it needed to be able to measure what the respondents perceive to be the value created. It was therefore necessary to have a model that was able to consolidate the six factors into a simple equation that took into account the respondents' ranking of the factors. This was achieved through a series of steps that started with using Section H of the questionnaire (see Appendix 3). Section H used six questions that were answered using an adjusted likert scale, with zero representing the lowest possible number rank (i.e. strongly disagree) and 4 representing the highest possible ranking (strongly agree) [increments of 1 unit].

For example,

- the scores from respondent 1 would be, PCV1= 4; PCV2=3, PCV3=4, etc.

Each of the 6 factors from the respondents would be averaged to:

- pcv_1 = ($PCV1_1$ + $PCV1_2$ + $PCV1_3$ + …+ $PCV1_n$)/n
- pcv_1 = (4 + 3 + 4 + …+ 2)/53 = 3.55
- Similarly, pcv_2=3.53, pcv_3=3.23, and so forth.

The ranking ratio for each factor would be calculated as:

- *a*= pcv_1 /4 = 3.55/4 = 0.89
- *b*= pcv_2 /4 = 3.53/4 = 0.88
- Similarly, *c* = 0.81, and so forth.

What followed was the use of ratings from Section B to G (see Appendix 3) for each of the elements to answer using a likert scale, with one representing the lowest possible number rank (i.e. strongly disagree) and 5 representing the highest possible ranking (strongly agree) [increments of 1 unit]. This would result in an average score per person per dimension as follows:

- $FVE_1 = (FVE_{11} + FVE_{12} + \ldots\ldots + FVE_{1n}) / n$
- $FVE_1 = (4 + 3 + \ldots\ldots + 5) / 5 = 3.20$
- Similarly $FVE_2 = (FVE_{21} + FVE_{22} + \ldots\ldots + FVE_{2n}) / n$
- $FVE_2 = (2 + 4 + \ldots\ldots + 1) / 5 = 2.50$, and so forth.
- Similarly, $FPP_1 = (FPP_{11} + FPP_{12} + \ldots\ldots + FPP_{1n}) / n$
- $FPP_1 = (1 + 3 + \ldots\ldots + 5) / 4 = 3.15$
- This procedure continues for all dimensions per person.

This can be shown through the equation that suggests that PCV is made of the sum total of the products between each of the six dimensions and its corresponding ranking ratio. This can be shown as follows.

$$PCV = a.FVE + b.FPP + c.FVQ + d.FVP + e.EV + f.SV \qquad \text{Eq. 3.2}$$

where, a = ranking factor for FVE
b = ranking factor for FPP
c = ranking factor for FVQ
d = ranking factor for FVP
e = ranking factor for EV
f = ranking factor for SV

Then, the equation representing the PCV per person is summarised as follows:

- $PCV_1 = a.FVE_1 + b.FPP_1 + c.FVQ_1 + d.FVP_1 + e.EV_1 + f.SV_1$
- PCV_1 = 0.89(3.2) + 0.88(2.5) + 0.81(2.75) + 0.67(1.33) + 0.77(2.8) + 0.8(2.5) = 2.85 + 2.2 + 2.23 + 0.89 + 1.99 +2.00 = 12.16
- Similarly PCV_2 = 2.67 + 3.30 + 1.62 + 1.34 + 1.56 +2.40 = 12.89, and so forth.

The equation that is representative of this research case is therefore summarised as :

$$PCV = 0.89FVE + 0.88FPP + 0.81FVQ + 0.67FVP + 0.71EV + 0.8SV \qquad \text{Eq. 3.3}$$

In order to calculate the maximum possible perceived value, the formula is used at maximum value on the likert scale (i.e. 5). such that:

- PCV_{max} = 0.89(5) + 0.88(5) + 0.81(5) + 0.67(5) + 0.77(5) + 0.8(5)
- PCV_{max} = 4.45 + 4.44 + 4.05 + 3.35 + 3.85 + 4 = 24.1 Eq. 3.4

The *PCV* per person can now be converted to a percentage per person as follows:

- $\%PCV_1 = PCV_1 / PCV_{max}$ x 100 = 12.16/24.1 x 100 = 50.46%
- Similarly, $\%PCV_2 = PCV_2 / PCV_{max}$ x 100 = 12.89/24.1 x 100 = 53.49%, and so forth.

It follows that the overall PCV achieved in this research case can be represented as:

- $\%PCV_T = (\%PCV_1 + \%PCV_2 + \%PCV_3 + ...+\%PCV_n) /n$
- $\%PCV_T$ = (50.46 + 53.49 + 88.76 + ….+ 94.4) / 53 = 73.14% Eq. 3.5

It would follow that the PCV is represented by an achievement, of 73.14%. A judgement can therefore be made on whether the hypothesis proved to be correct or not. In this case, it is not sufficient to prove the hypothesis.

Operationalisation of the hypothesis

The above hypothesis could not be measured in its current abstract form. It needed to be broken down from the abstract concept that it was, to behavioural dimensions that are found in entities demonstrating the concept (Sekaran and Bougie, 2009). The behavioural dimensions needed to be further broken down to elements that quantitatively show the differences if the variable increased or decreased. This translation of the variables from an abstract state to a quantifiable state is referred to as operationalisation (Bryman and Cramer, 2005). In this case, PCV has been broken down into six factors. These factors were further broken down into several elements that the respondents were asked about. Consider the example where FPP was broken down into, amongst other things, knowledge of the job and up-to-date work. These elements were therefore able to provide a view about the dimension of professionalism.

Causality Research Compared to Correlation Research

In a relationship between two or more variables, causality should be established, provided that three things can be verified (Bryman and Cramer, 2005). First, there must be proof that a relationship exists. Second, the relationship should not be coincidental or non-spurious. Lastly, the cause must occur before the effect. In the event that factors contributing to a variable need to be determined, a correlation between the variables should be demonstrated (Sekaran and Bougie, 2009). A correlation research proves the existence of a relationship, but it gives limitations to causality, given that it lacks the manipulation of variables and proving the reaction thereof as evidence. This PCV research aimed to test the correlation between PCV and the six dimensions or factors. This will be done through a ranking method that is to be applied from the scores that were to be determined through the survey.

In cases like this, where a number of factors are considered, it becomes more necessary to utilise interval variables (i.e. use interval scales to measure variables) (Sekaran and Bougie, 2009). The questionnaire has been designed on the basis of this rationale in order to be able to accurately measure the differences.

3.5.1.2 Recruitment of Research Respondents

This research was conducted within a corporate arrangement of a Transnet operating division. It was approved within the operating division and the respondents were expected to respond as required. Arrangements were made with terminal managers to inform all affected individuals to support this corporate endeavour. The daily planning meetings took place at each of the terminals, typically in the first hour of the day shift (i.e. from 08h00 up to 09h00) depending on the terminal arrangements. The relevant respondents answered the questionnaire immediately after this meeting. Other respondents who could not be available at this meeting had to be individually met in their offices. This was administratively demanding and an expensive option, compared to an internet-based survey. However, an internet-based option would have been more difficult

to achieve the response rate achieved here, taking into consideration the organisational culture.

3.5.2 Pre-testing and Validation

Research projects are typically demanding in terms of the resources necessary to successfully complete them. The risk of conducting research that has fundamental errors in it would have been costly. It was therefore important for the research to have pre-tests conducted for advanced identification of problems and resolution thereof. In this case, pre-tests optimised a few questions, for example, the inclusion of management salary bands on section A question 3 (see Appendix 3). After the fieldwork, validation and reliability were important in ensuring that the research resulted in meaningful conclusions from the integrity of its data.

3.5.2.1 Reliability

This cross-sectional research was aimed at testing the sample once. For this reason, externally reliability is difficult to prove at this stage. The longitudinal research that may follow will be able to treat this problem. It must be accepted that it will not fully amount to a test-retest scenario, given the manipulation or changes that will occur annually. However, internal validity would be easier to prove through the use of Cronbach's alpha test, using the SPSS tool (Bryman and Cramer, 2005). The interpretation of the results would be based on the concept that "…reliabilities less than 0.60 are considered to be poor, those in the 0.70 range, acceptable, and those over 0.80 good" (Sekaran and Bougie, 2009, p. 325). This is often necessary to do in instances where it is suspected that the measure may compromise the dimensions underpinning the concept. Reliability for each of the dimensions is therefore calculated instead of the measure as a whole. In this case for, example, FVE was calculated first. Then, after confirming the reliability of all six dimensions, the reliability of PCV as a whole was calculated. A parallel-form reliability test refers to two types of test that check for the same construct (Bryman and Cramer, 2005). Utilising this form of testing in this instance provides the research with the stability of the measure it requires to show that it is accurate and can therefore be relied on.

3.5.2.2 Reflective Compared with Formative Scale

Reflective scales must show consistency in the terms of how they correlate to the construct. In other words, all the items in a scale should show an increase in the event where the construct itself has increased (Bryman and Cramer, 2005). A formative scale can measure a number of items that describe the construct but do not necessarily show consistency in terms of how they influence it. In other words, while an increase in the construct does not necessarily imply an increase in all its dimensions, some may reduce while others increase. Formative scales therefore attempt to explain a construct through the combination of its elements. Each of the contributing elements therefore influences the final score, regardless of the other dimensions. In this case, however, after recoding, the questions were answered, such that an increase in the scale implied an increased value. The reflective scale was therefore applicable in this research.

3.5.2.3 Validity

A newly developed measure should be verified that it tests the concept that it aimed to measure. Face validity should be established as a minimum condition to make certain that the correct concept was measured. It is recommended to use a few methods that bring convergent validity to research (Bryman and Cramer, 2005). The essence of this exercise was to ensure that, through the use of measures of the same concept, convergence can be proved. This could be done by utilising different tests for the same thing (not often used); and different questionnaire methods for the same thing (often used), to determine convergence. The following methods of convergent validity can be used in practice: (1) Concurrent validity tests check whether a particular dimension can be used to test a particular concept by checking for the likelihood for the opposite order, for instance; (2) Predictive validity uses future data on a particular dimension to determine increase or decrease in a particular concept; (3) Construct validity deduces a hypothesis based on a theory that is presented (Bryman and Cramer, 2005).

In order to confirm the applicable form of validity, it was recommended that face validity be utilised as a basis for validating the model used based on the work done by Sanchez et al (2004). Concurrent validity is also adopted in how the questions were structured. The development of the questionnaire included for instance several negative questions which were designed to draw comparisons with the positive questions measuring the same dimension. The aim here is to be able to prove that the different questions asking about different elements are, in fact, measuring the same dimension.

3.5.3 Administration of the Questionnaire

The questionnaire was manually administered throughout the various terminals. Data was then manually input into SPSS 21. The questionnaire was archived with the university after the conclusion of the research.

3.6 Analysis of the Data

The analysis of the research was conducted as a three-step process. The first step related to the analysis of the PCV factors in terms of the deductions that could be made from the analysis of the data. This included the validation of the questionnaire and the outcomes drawn from each of the factors. It also included the measurement of the ranking of factors and using ratios. The second step used scores achieved in terms of the PCV dimensions. The scores were able to demonstrate certain patterns in terms of the tested sample. Using this method, the PCV calculations for the entire sample could be determined. Thereafter, through the use of normal sampling distribution of the mean (Keller, 2009), the following statistics could be determined:

- Sample mean (μ)
- Population mean (μ_x)
- Standard Deviation (σ)
- Cronbach Alpha
- P value - one tail (p)
- Beta (β)

The third step of analysis was to draw comparisons from the various factors and the profile of the sample to deduce any patterns that may give added insight from the analysis from steps one and two.

The results were then interpreted, and inferences and conclusions drawn. Based on this, “it is possible to generalise the findings to a population since it is assumed that the total set of variables constitutes the entire population of variables” (Field, 2005, p.629).

3.7 Summary

Reflecting back on this chapter, it created a clear approach towards formulating a clear methodology that was utilised to test the aim of this research. It has been determined that in order to determine whether TPT terminal representatives for internal projects are of the perception that they receive customer value of more than 80%; six value objectives relating to functional value, social value and emotional value must be tested. These questions would be put to internal TPT respondents that participated in the inception of projects, as demonstrated in the project charter. These individuals were part of the team that contributed towards the running on the project, upon approval. These are individuals of vast experience based in various terminals in Durban and Richards Bay. They were engaged directly in order to run the survey through a questionnaire. The analysis of the questionnaire was done through the development and formulation of the PCV research case equation. This model was developed to determine the levels of value achieved through the delivery of capital projects. Finally, normal sampling distribution was used to find the relevant statistics.

4. CHAPTER FOUR
PRESENTATION OF RESULTS

4.1 Introduction

This chapter will present the data developed from the survey conducted. The chapter is broken into 11 sections, including this one (i.e. section 4.1). Sections 4.2 to 4.8 and 4.10 follow a similar pattern, which starts with the presentation of the data for each section in the form of graphs and analysis tables. This is immediately followed by a Summary of Results for each of the sections. Section 4.9 follows two sets of data for analysis, before finally concluding with the third section. Finally, section 4.11 puts forward the summary of Chapter Four and captures the salient points from the entire chapter.

4.2 Sample Profile

A total of six questions were asked to determine the demographic profile of the sample. The data is extracted from SPSS and presented using tables and graphs in section 4.2.1 and summarised in section 4.2.2. This data, collected to help understand some underlying factors about the sample, may help explain part of the findings of this research.

4.2.1 Summary of Sample Profile Output

Terminal representation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pier 1	2	3.8	3.8	3.8
	Pier 2	12	22.6	22.6	26.4
	MWT	11	20.8	20.8	47.2
	DRT	8	15.1	15.1	62.3
	RBT	20	37.7	37.7	100.0
	Total	53	100.0	100.0	

Table 4.1: Terminal Representation

Department Representation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Operations	10	18.9	18.9	18.9
	Planning & Logistics	7	13.2	13.2	32.1
	Technical	21	39.6	39.6	71.7
	Finance	2	3.8	3.8	75.5
	Human Resources	2	3.8	3.8	79.2
	SHEQ-SS	6	11.3	11.3	90.6
	Communications	1	1.9	1.9	92.5
	Others	4	7.5	7.5	100.0
	Total	53	100.0	100.0	

Table 4.2: Department Representation

Role of Respondents (Job Level)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Supervisory	8	11.4	15.1	15.1
	Junior Manager	29	41.4	54.7	69.8
	Middle Manager	15	21.4	28.3	98.1
	Executive	1	1.4	1.9	100.0
	Total	53	75.7	100.0	
Missing	System	17	24.3		
Total		70	100.0		

Table 4.3: Role of Respondents (Job Level)

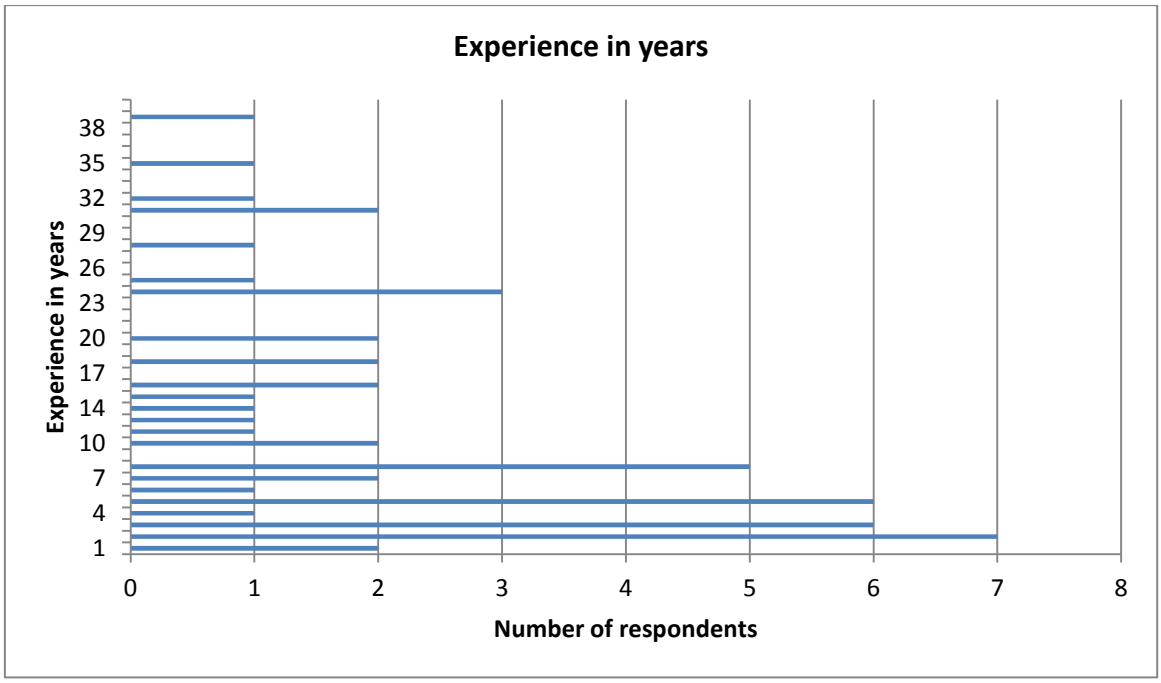

Figure 4.1: Experience within TPT

Participation in Projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4 or less	29	54.7	54.7	54.7
	5 or greater but less than 10	9	17.0	17.0	71.7
	10 or greater but less than 15	10	18.9	18.9	90.6
	15 or greater	5	9.4	9.4	100.0
	Total	53	100.0	100.0	

Table 4.4: Participation in Projects

Largest Project Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than R5m	9	17.0	17.0	17.0
	R5m or greater but less than R10m	2	3.8	3.8	20.8
	R10m or greater but less than R50m	11	20.8	20.8	41.5
	R50m or greater but less than R100m	8	15.1	15.1	56.6
	R100m or greater	22	41.5	41.5	98.1
	Missing value	1	1.9	1.9	100.0
	Total	53	100.0	100.0	

Table 4.5: Largest Project Size

4.2.2 Summary of Sample Profile Results

The data collected revealed that the Richards Bay Terminal (37.7%), DCT Pier 2 (22.6%) and Maydon Wharf Terminal (20.8%) accounted for more than 81.1% of the views in this research. Departmental representation on projects is typically led by the Technical Department (39.6%), Operations (18.9%), Planning & Logistics (13.2) and SHEQ-SS [i.e. Safety, Health, Environment, Quality, Sustainability and Security] (11.3%), which collectively represent 83% of the sample. At the core of the project teams are junior managers (54.7%), middle managers (28.3%), and supervisors (15.1%), representing 98.1% of the sample. Executive management was only in 1.9% of the respondents. Of the 53 respondents that participated, 22 of them had experience of 5 years or less, while 10 had experience of 6 to 10 years, 4 had experience of 11 to 15 years, 6 had experience of 16 to 20 years, 4 had experience of 21 to 25 years and the last 6 had experience of more than 25 years. The sample showed that 54.7% of the respondents had only participated in 4 projects or less, while 17% have been involved in 5 to 9 projects and 18.9% had the experience of participating in 10 to 14 projects. In the sample tested, 43% of the respondents had been involved in projects with budgets of more than R100 million, 15.4% participated in projects of R50 to 99 million and 21.2% participated in projects worth R10 to 49 million. Collectively, this indicates that 78.9% of the

respondents had involvement in projects worth R10 million or more. This suggests that the respondents surveyed were involved in projects that were typically involving large capital spending and so are likely to be complex in nature.

This information on its own may not be able to give specific conclusions about the sample in relation to capital projects. However, the conclusions of the complete research may be explained better through this information.

4.3 Functional Value of Establishment/Department (FVE)

The results for the first objective of the research were extracted from SPSS and presented both graphically and using tables in sections 4.3.1 and section 4.3.2.

4.3.1 Summary of FVE Output

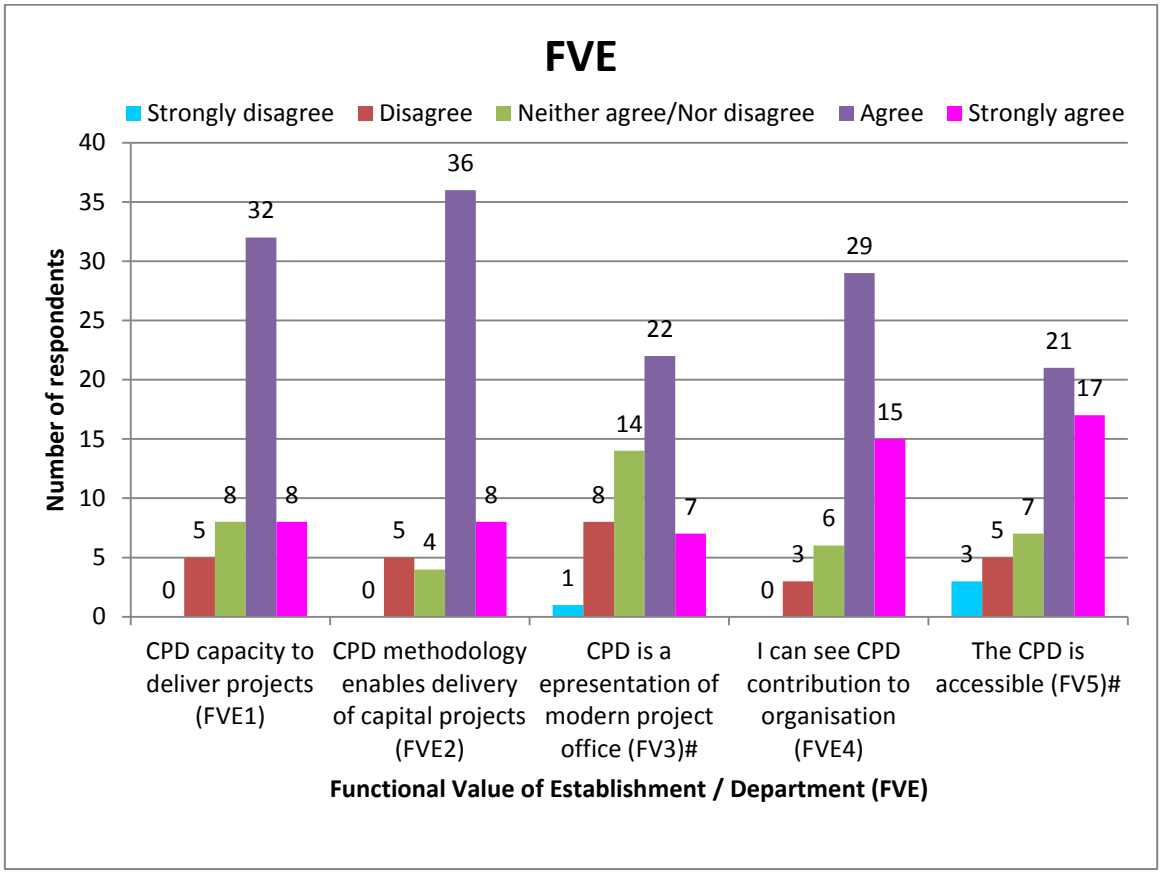

Figure 4.2: Responses on FVE1 to FVE5

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FVE1	53	2	5	3.81	0.810
FVE2	53	2	5	3.89	0.776
FVE3	53	1	5	3.43	0.980
FVE4	53	2	5	4.06	0.795
FVE5	53	1	5	3.83	1.156
Valid N (listwise)	53				

Table 4.6: Mean and Standard Deviation for FVE1 and FVE5

Case Processing Summary

		N	%
Cases	Valid	52	98.1
	Excluded[a]	1	1.9
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.7: FVE Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.735	5

Table 4.8: FVE Reliability Statistics

4.3.2 Summary of FVE Results

The FVE was tested using 5 questions, as shown in Figure 4.2. Two of the questions (i.e. FVE3 and FVE5) were asked as negative questions on the questionnaire. Hence their data is denoted with a "#" mark, indicating that the questions and the values on this figure have been positively coded. On the first question (FVE1), the data showed that 40 of the respondents (75.5%) effectively agreed that the CPD had capacity to deliver projects (i.e. they responded as

"agree" or "strongly agree"). On FVE2, 46 of the respondents (83.3%) effectively agreed that the project methodology enables delivery of capital projects. FVE3 showed that only 29 respondents (55.8%) effectively agreed that the CPD was a representation of a modern Project Management Office. On the fourth question (FVE4), 44 of the respondents (83.0%) effectively agreed that it was easy to see the contribution the CPD provides internally within the organisation. Data from FVE5 indicated that 38 of the respondents (71.7%) effectively agreed that the CPD was accessible.

Most respondents seem to effectively agree to the questions (i.e. they scored about 80%, equivalent to 4 on the likert scale). The exceptions to this were FV3, at 55.8%, and FVE5, at 71.7%. Notably FVE3 had the highest number of respondents who could not agree or disagree. This could imply that they may not be familiar with a modern Project Management Office. Also, the negative questions on FVE3 and FVE5 by some of the respondents may not have been correctly understood. Hence the increase in "effectively disagree" responses, with 9 for FVE3 and 8 for FVE5.

The descriptive statistics in Table 4.6 indicated that the mean typically ranged from 3.43 to 4.06 for all the FVE figures. This indicates that the mean values tended towards the "agree" response to the questions and typically showed that respondents agreed to question as a value of 4 on the likert scale. The standard deviation ranged from 0.776 to 1.156, which indicates that the variance was about a unit on the likert scale. The internal validity of the FVE section of the questionnaire was at 98.1%, as demonstrated in Table 4.7. The Cronbach's alpha statistic of 0.735 was achieved for reliability, as seen in Table 4.8. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 5 questions relating to FVE therefore suggest that they reliably measure the first objective of this research**, namely *to determine the functional value of Establishment (i.e. the CPD)*.

4.4 Functional Value of Project Personnel - Professionalism (FPP)

The results for the second objective, as extracted from SPSS and presented both graphically and using tables in section 4.4.1 and summarised in section 4.4.2.

4.4.1 Summary of FPP Output

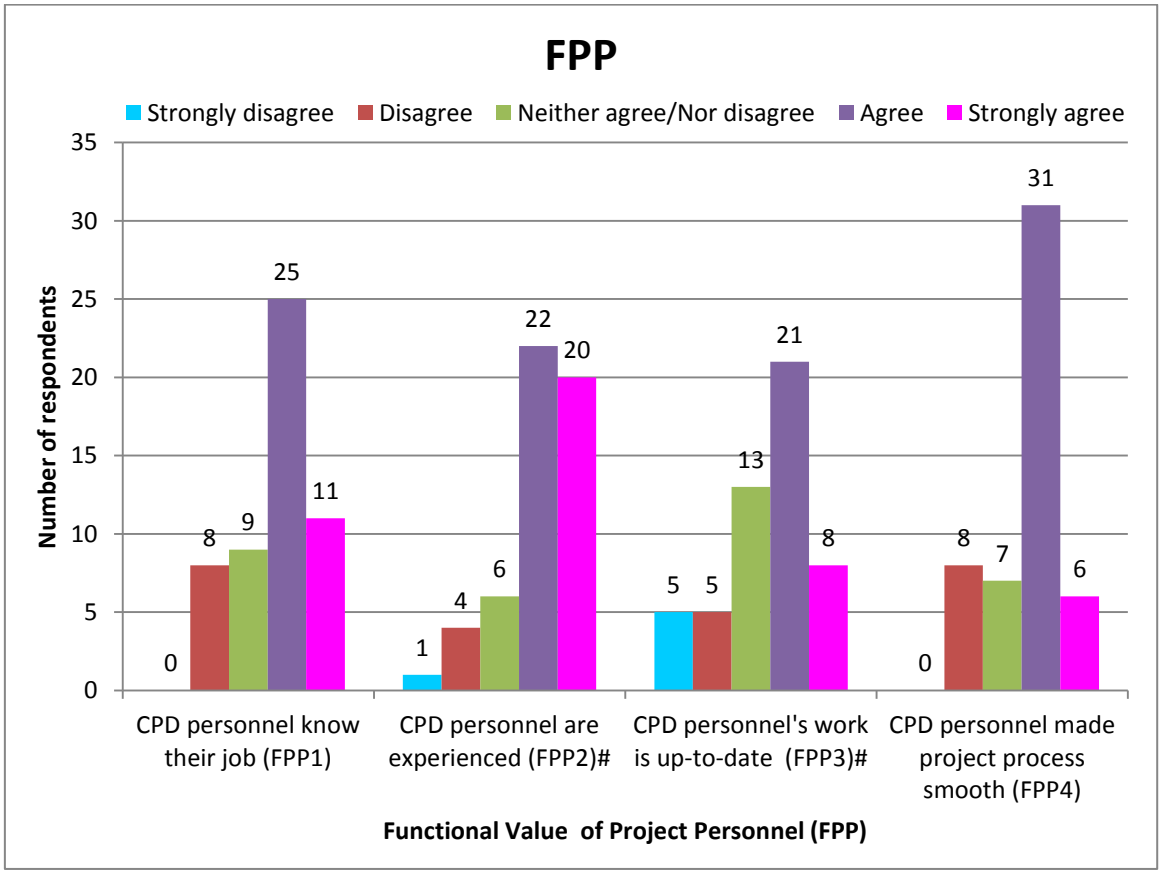

Figure 4.3: Responses on FPP1 to FPP4

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FPP1	53	2	5	3.74	0.964
FPP2	53	1	5	4.06	0.989
FPP3	52	1	5	3.42	1.161
FPP4	53	2	5	3.77	0.879
Valid N (listwise)	52				

Table 4.9: Mean and Standard Deviation for FPP1 to FPP4

Case Processing Summary

		N	%
Cases	Valid	52	98.1
	Excluded[a]	1	1.9
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.10: FPP Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.746	4

Table 4.11: FPP Reliability Statistics

4.4.2 Summary of FPP Results

The FPP was tested using 4 questions, as shown in Figure 4.3. Two of the questions (i.e. FPP2 and FPP3) were asked as negative questions in the questionnaire. Hence their data is denoted with a "#" mark, indicating that the questions and the values on this figure have been positively coded. The first question (FPP1) asked if the CPD personnel knew their job well and the options available to them within TPT. A total of 36 respondents (67.9%) effectively agreed (i.e. they responded with either an "agree" or "strongly agree") with the question. On FPP2, 42 respondents (79.2%) effectively agreed to the question that the CPD personnel were experienced in their jobs. The third question (FPP3) asked if the CPD personnel's job was up-to-date and only 29 respondents (54.72%) effectively agreed to this. The FPP4 question revealed that 37 respondents (69.8%) effectively agreed to the question that the CPD personnel made the project process smooth.

There were notably low levels of agreement on FPP1, FPP3 and FPP4. Interestingly, on FPP2 the respondents suggested that the CPD personnel were experienced. However, on FPP1 only 67.9% could effectively agree that the personnel knew their job. This could be explained by the similar result on FPP3. Only 55.8% respondents believe that CPD personnel's work is up to date. This may suggest that, even though the personnel is experienced, it may not be maximising their capabilities in the way they execute their work. The low values on FPP4 may suggest that CPD may need to consider how it could take measures to improve the perception of not being seen to be doing enough to make the project process smooth.

The descriptive statistics in Table 4.9 indicated that the mean typically ranged from 3.42 to 4.06 for all the FPP figures. This indicates that the mean values tended to agree with the questions on FPP in relation to the likert scale value of 4. The standard deviation ranged from 0.879 to 1.161, about a unit on the likert scale. The internal validity of the FPP section of the questionnaire was at 98.1% as shown by Table 4.10. The Cronbach's alpha statistic of 0.746 was achieved for reliability, as seen in Table 4.11. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 4 questions relating to FPP therefore suggest that they reliably measure the second objective of this research**, namely *to determine the functional value of the personnel from the CPD*.

4.5 Functional Value of Quality - Product and Services (FVQ)

The results for the third objective of the research were extracted from SPSS and presented both graphically and using tables in section 4.5.1 and summarised in section 4.5.2

4.5.1 Summary of FVQ Output

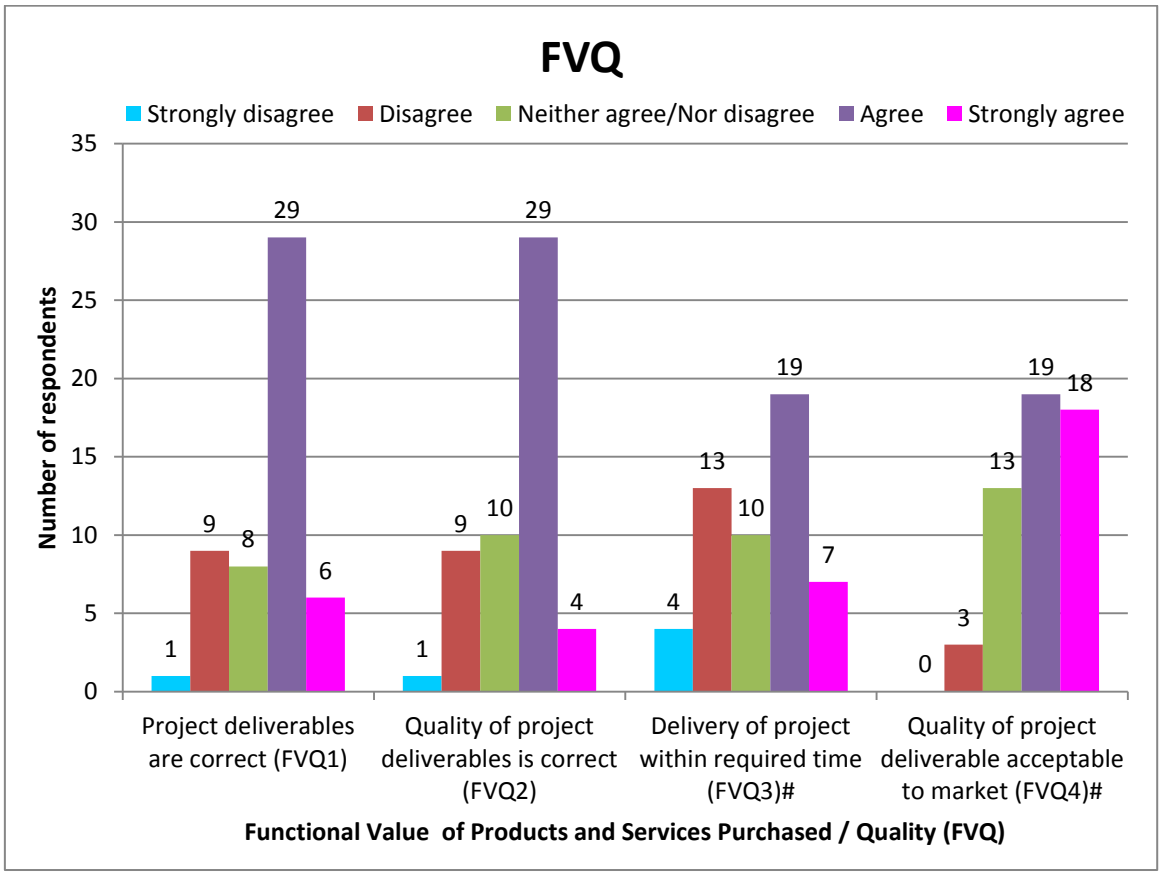

Figure 4.4: Responses on FVQ1 to FVQ4

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FVQ1	53	1	5	3.57	0.971
FVQ2	53	1	5	3.49	0.933
FVQ3	53	1	5	3.23	1.187
FVQ4	53	2	5	3.98	0.909
Valid N (listwise)	53				

Table 4.12: Mean and Standard Deviation for FVQ1 to FVQ4

Case Processing Summary

		N	%
Cases	Valid	53	100.0
	Excluded[a]	0	0.0
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.13: FVQ Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.772	4

Table 4.14: FVQ Reliability Statistics

4.5.2 Summary of FVQ Results

The FVQ was tested using 4 questions, as shown in Figure 4.4. Two of the questions (i.e. FVQ3 and FVQ4) were asked as negative questions on the questionnaire. Their data is denoted with a "#" mark, indicating that the questions and the values on this figure have been positively coded. The FVQ1 question asked if the project deliverables were correct and 35 respondents (66.0%) effectively agreed. The second question (FVQ2) asked if the project deliverables were correct. A total of 33 respondents (62.3%) effectively agreed. On FVQ3, only 26 respondents (49.1%) effectively agreed that projects are delivered within the required time. The last question (FVQ4) asked if the quality delivered is acceptable to the general market. A total of 37 respondents (69.8%) effectively agreed on this.

The above results suggest that a significant portion of the sample could not effectively agree to most FVQ questions. The CPD may need to take steps towards changing the perception that the project deliverables are not always

correct (see FVQ1 on Figure 4.4). Likewise, there is a need to change the view that the quality of the deliverables is not always correct (see FVQ2 in Figure 4.4). The majority of the respondents could not agree that the projects are delivered within the required time, as shown by FVQ3 (at only 49.1%) in Figure 4.4. The CPD may need to carefully consider how the concerns in relation to this perception can be changed. On FVQ4, the sample seemed to score higher for quality than FVQ2 (i.e. 69.8% compared to 62.3%) This suggests that, though there may be certain things that may not be correct in respect of project deliverables, the market may not be aware of such issues.

The descriptive statistics in Table 4.12 show that the mean typically ranged from 3.23 to 3.98 for all the FVQ figures. This indicates that the mean values tended to lie between the "neither agreed/nor disagreed" and the "agreed" response. Notably FVQ3 was lower than most, at 3.23. The standard deviation ranged from 0.933 to 1.171, about a unit on the likert scale. The internal validity of the FVQ section of the questionnaire was at 98.1%, as shown in Table 4.13. The Cronbach's alpha statistic of 0.772 was achieved for reliability, as seen in Table 4.14. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 4 questions relating to FVQ therefore suggest that they reliably measure the third objective of this research**, namely *to determine the functional value of quality [i.e. Products and Services] from the CPD*.

4.6 Functional Value of Price (FVP)

The results of for the fourth objective of the research were extracted from SPSS and presented both graphically and using tables in section 4.6.1 and summarised in section 4.6.2.

4.6.1 Summary of FVP Output

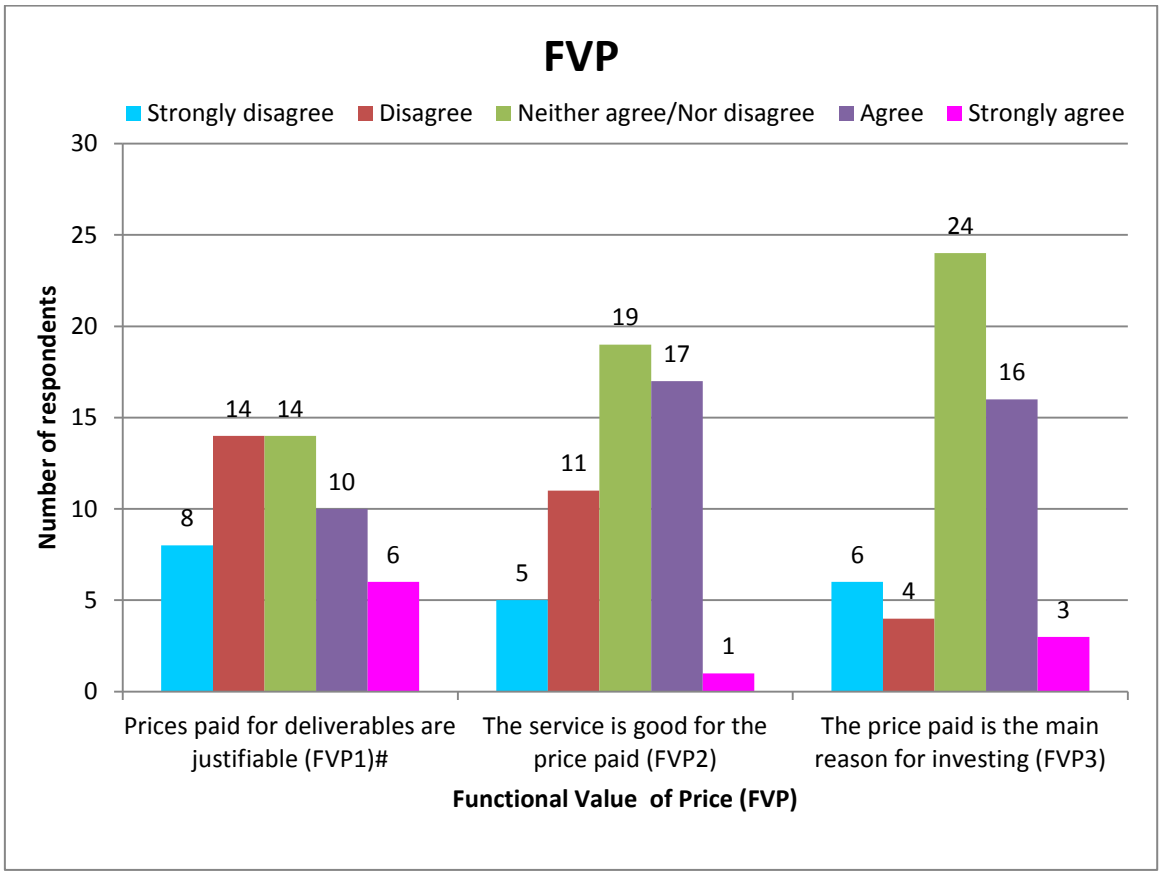

Figure 4.5: Responses on FVP1 to FVP3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FVP1	53	1	5	2.79	1.243
FVP2	53	1	5	2.96	0.999
FVP3	53	1	5	3.11	1.031
Valid N (listwise)	53				

Table 4.15: Mean and Standard Deviation for FVP1 to FVP3

Case Processing Summary

		N	%
Cases	Valid	52	98.1
	Excluded[a]	1	1.9
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.16: FVP Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.825	3

Table 4.17: Reliability Statistics

4.6.2 Summary of FVP Results

The FVP was tested using 3 questions, as shown in Figure 4.5. One of the questions (i.e. FVP1) was asked as a negative question on the questionnaire. Hence its data is denoted with a "#" mark, indicating that the questions and the values in this figure have been positively coded. FVP1 asked if the price for the deliverables was justifiable and only 16 respondents (30.8%) effectively agreed. The second question (FVP2) asked if the service was good for the prices paid. A total of 18 respondents (34.0%) effectively agreed. On FVP3, only 19 respondents (35.8%) effectively agreed that price was the main reason for deciding to invest.

Most respondents could not agree to all questions pertaining to price (refer FVP1, FVP2, and FVP3 in Figure 4.5). There were a notable number of respondents who were uncertain about price-related questions, with FVP1 at 14 respondents (26.4%), FVP2 at 19 respondents (35.9%) and FVP3 at 24 respondents (45.3%). This suggests that CPD may need to ensure that there are steps taken to improve reporting on project costs and the prices spent per asset delivered. Given that the

terminal representatives are largely from junior managers, terminals may not want to improve their oversight responsibility on the prices paid.

The descriptive statistics in Table 4.15 show that the mean typically ranged from a low 2.79 to 3.11 for all the FVP figures. This indicates that the mean values tended to neither agree/nor disagree with all FVP figures. The standard deviation ranged from 0.999 to 1.210, about a unit on the likert scale indicating a variance that is typically about a unit. The internal validity of the FVP section of the questionnaire was at 100%, as demonstrated in Table 4.16. The Cronbach's alpha statistic of 0.772 was achieved for reliability, as seen in Table 4.17. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 3 questions relating to FVP therefore suggest that they reliably measure the third objective of this research**, namely *to determine the functional value of the price of capital projects*.

4.7 Emotional Value (EV)

The results of for the fifth objective of the research were extracted from SPSS and presented both graphically and using tables in section 4.7.1 and summarised in section 4.7.2.

4.7.1 Summary of EV Output

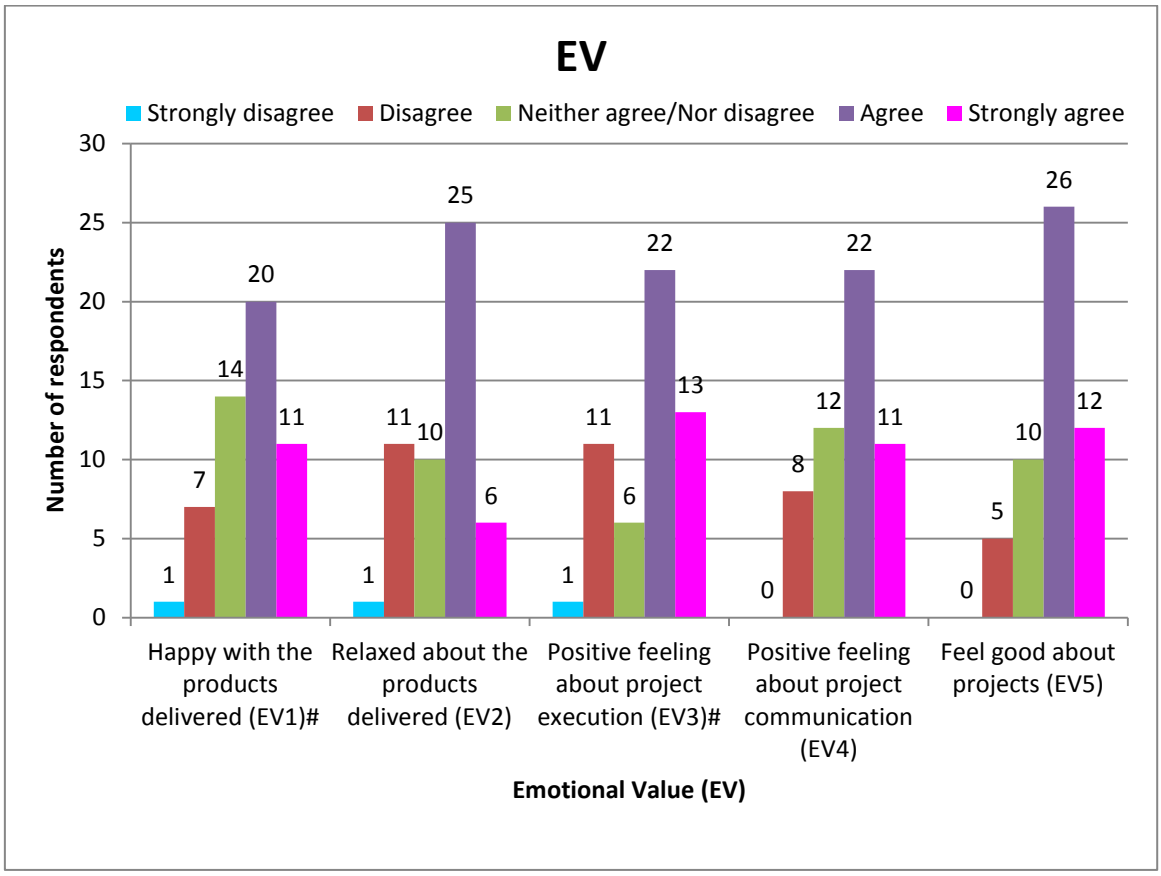

Figure 4.6: Responses on EV1 to EV5

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
EV1	53	1	5	3.62	1.023
EV2	53	1	5	3.45	1.011
EV3	53	1	3	3.66	1.126
EV4	53	2	5	3.68	0.976
EV5	53	2	5	3.85	0.886
Valid N (listwise)	53				

Table 4.18: Mean and Standard deviation for EV1 to EV3

Case Processing Summary

		N	%
Cases	Valid	53	100.0
	Excluded[a]	0	0.0
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.19: EV Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0. 825	5

Table 4.20: EV Reliability Statistics

4.7.2 Summary of EV Results

The EV was tested using 5 questions, as shown in Figure 4.6. Two of the questions (i.e. EV1 and EV3) were asked as negative questions on the questionnaire. Hence their data is denoted with a "#" mark, indicating that the questions and the values on this figure have been positively coded. EV1 asked if the respondents were happy with the products delivered and 31 respondents (58.5%) effectively agreed. The second question (EV2) asked if the respondents felt relaxed about the products delivered. A total of 31 respondents (58.5%) effectively agreed. On EV3, 35 respondents (66.0%) effectively agreed that the delivery of the project gave them a positive feeling. The fourth question (EV4) asked the respondents if the communication about the projects was two-way and left positive feelings. Some 33 respondents (62.3%) affectively agreed to this. Lastly, respondents were asked if they felt good about the projects, in question EV5. A total of 38 respondents (71.7%) effectively agreed to this.

The respondents effectively agreed to the questions at varying levels with the lowest value ranging from 58.5% and the highest value at 71.7%. Given that feelings and emotions are held internally by each customer (Sweeney and Soutar,

2001), the observed responses of uncertainty ranging from 6 (11.3%) on EV3 up to 14 (26.4%) on EV1 could suggest that respondents had mixed experiences. CPD may need to consider ways to ensure that they perform consistently in delivering projects.

The descriptive statistics in Table 4.18 show that the mean typically ranged from 3.45 to 3.85 for all the EV figures. This indicates that the mean values tended towards the agreed position for questions on EV, in relation to the likert scale value of 4. The standard deviation ranged from 0.886 to 1.126. This deviation of about a unit on the likert scale indicates a large variance. The internal validity of the EV section of the questionnaire was at 100%, as demonstrated in Table 4.19. The Cronbach's alpha statistic of 0.772 was achieved for reliability, as seen in Table 4.20. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 3 questions relating to EV therefore suggest that they reliably measure the third objective of this research**, namely *to determine the EV of capital projects*.

4.8 Social value (SV)

The results of the sixth objective of the research were extracted from SPSS and presented both graphically and using tables in section 4.7.1 and summarised in section 4.7.2.

4.8.1 Summary of SV Output

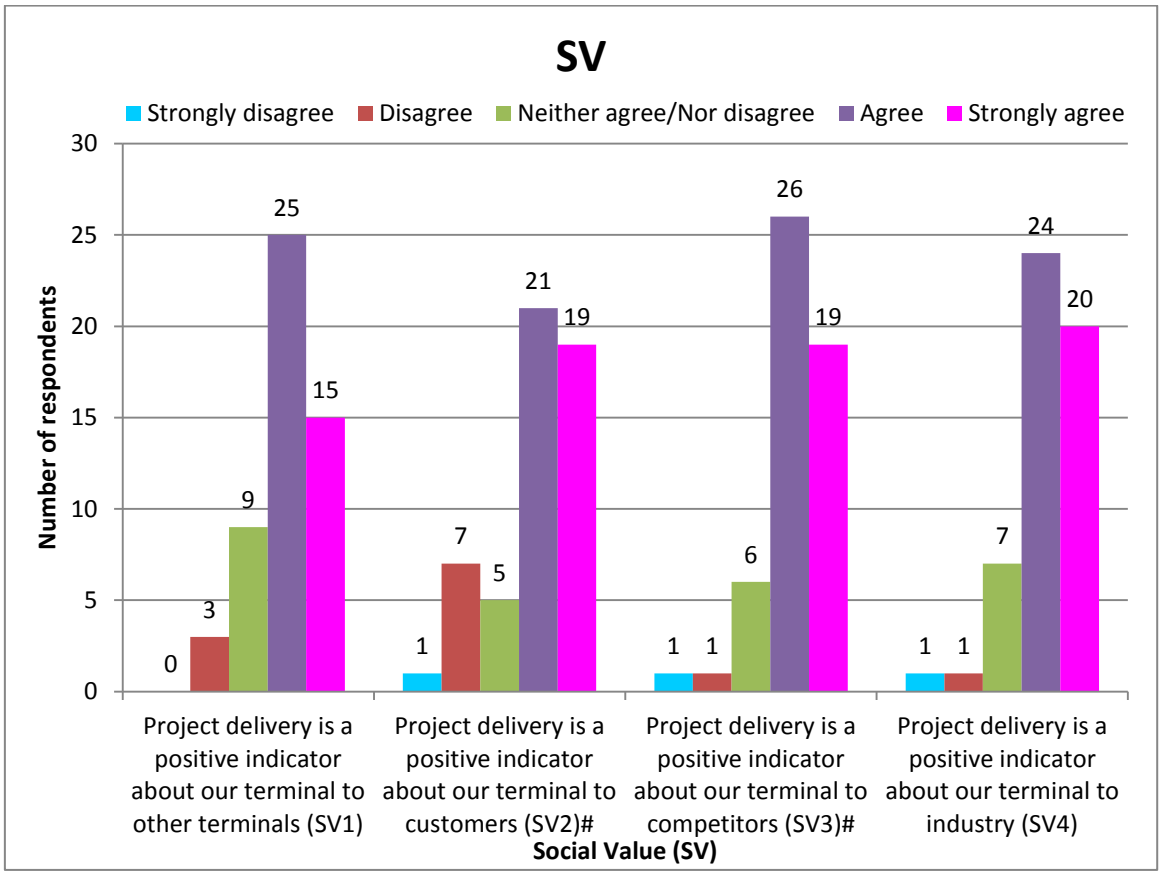

Figure 4.7: Responses on SV1 to SV4

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SV1	53	2	5	4.09	1.079
SV2	53	1	5	3.94	1.082
SV3	53	1	5	4.15	0.841
SV4	53	1	5	4.15	0.864
Valid N (listwise)	53				

Table 4.21 Mean and Standard Deviation for SV1 to SV4

Case Processing Summary

		N	%
Cases	Valid	53	100.0
	Excluded[a]	0	0.0
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.22: SV Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.772	4

Table 4.23: SV Reliability Statistics

4.8.2 Summary of SV Results

The SV was tested using 4 questions, as shown in Figure 4.7. Two of the questions (i.e. SV2 and SV3) were asked as negative questions on the questionnaire. Hence its data is denoted with a "#" mark, indicating that the questions and the values on this figure have been positively coded. SV1 asked if project delivery is a positive indicator about their terminal to other terminals. A total of 40 respondents (75.5%) effectively agreed to this. The second question (SV2) asked if the project delivery is a positive indicator about their terminal to customers. A total of 40 respondents (75.5%) effectively agreed. On SV3, 45 respondents (84.9%) effectively agreed that project delivery is a positive indicator about their terminal to competitors. The last question (SV4) asked the respondents if project delivery is a positive indicator about our terminal to industry. Some 44 respondents (83.0%) affectively agreed to this.

The respondents seemed to effectively agree with SV-related questions, with figures ranging from 75.5% to 84.9%. This suggests that the respondents believe that the social impact desired by the terminals is achieved through the projects delivered.

The descriptive statistics in Table 4.21 shows that the mean typically ranged from a low 3.94 to 4.15 for all the SV figures. This indicates that respondents typically agreed with the questions on SV in relation to the likert scale value of 4. The standard deviation ranged from 0.841 to 1.082, about a unit on the likert scale indicating a variance that is typically about a unit. The internal validity of the SV section of the questionnaire was at 100% as shown in Table 4.22. The Cronbach's alpha statistic of 0.772 was achieved for reliability, as seen in Table 4.23. At values of 0.7 and higher, Cronbach's alpha values are considered to be reliably acceptable (Sekaran and Bougie, 2009). **The results from the 4 questions relating to SV therefore suggest that they reliably measure the sixth objective of this research**, namely *to determine the social value of capital projects*.

4.9 PCV Ranking

The results of the PCV ranking factor were extracted from SPSS, together with calculations referred to in Appendix 2 and presented using tables in section 4.9.1 and summarised in section 4.9.2.

4.9.1 Ranking Factors

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
pcv_1	53	2	4	3.55	0.539
pcv_2	53	3	4	3.53	0.504
pcv_3	53	1	4	3.17	0.854
pcv_4	53	0	4	2.58	1.086
pcv_5	53	1	4	2.83	0.893
pcv_6	53	1	4	3.21	0.793
Valid N (listwise)	53				

Table 4.24: Mean and Standard Deviation for pcv_1 to pcv_6

The descriptive statistics in Table 4.24 show that the ranking factors of pcv_1 to pcv_6 range between 2.83 and 3.55 (i.e. the mean values). As discussed in Chapter Three, the mean values are used to compute the PCV ranking factors, as shown in Table 4.25. The standard deviations are not utilised in computing the PCV ranking factors, but are automatically calculated on SPSS.

4.9.2 Ranking Ratios

Ranking Ratios and MAX_{pcv}

	FVE	FPP	FVQ	FVP	EV	SV
Mean ($pcv_1, pcv_2, pcv_3, pcv_4, pcv_5, pcv_6$)	3.55	3.53	3.23	2.69	2.83	3.21
Ranking Ratios (a, b, c, d, e, f)	0.89	0.88	0.81	0.67	0.71	0.80
Max Ranking Scores	4.43	4.41	4.04	3.36	3.54	4.01
MAX_{pcv}	23.79					
Ranking Influence %	18.62	18.54	16.98	14.12	14.88	16.86

Table 4.25: Ranking Ratio and MAX_{pcv}

Table 4.25 shows that the ranking ratios computed were *a* = 0.89, *b* = 0.88, *c* = 0.81, *d* = 0.67, *e* = 0.71 and *f* = 0.80. As discussed in Chapter Three, the model representing PCV can be calculated by substituting the ranking ratios to the PCV equation. Equation 4.1 below is therefore accepted as the 'case research PCV equation'. This implies that this model can be used as a representative model for the population in KwaZulu-Natal within TPT. The case research PCV equation is determined as:

PCV $= a.FVE + b.FPP + c.FVQ + d.FVP + e.EV + f.SV$

$= 0.89FVE + 0.88FPP + 0.81FVQ + 0.67FVP + 0.71EV + 0.8SV$…….Eq.4.1

In utilising this equation 4.1 and substituting the likert scale value of 4, corresponding to the strongly agree option, the maximum perceived customer

value score (MAX_{pcv}) was calculated as 23.79. The detailed calculations summarised on Table 4. 25 are shown in Appendix 4.

4.9.3 Summary of Output for Ranking Factors and Ratios

The descriptive statistics on Table 4.25 showed pcv_1 at a mean of 3.55 (i.e. the ranking of FVE) as the most important PCV contributor at 18.62%. Then, pcv_2 follows, at 18.54% (i.e. the ranking of FPP). Similarly, this continued for pcv_3 at 18.98% (i.e. the ranking of FVQ), pcv_6 at 16.86% (the ranking of SV), pcv_5 at 14.88% (i.e. the ranking of EV) and pcv_4 at 14.12% (i.e. the ranking of FVP). This implies that the sample considered the role of CPD to be the most important driver of PCV received by the respondents. This is followed by the manner in which the CPD staff performs its duties. The inherent quality of the delivered product is the third contributor to PCV. The ranking influence percentages continue to show social impact (SV), emotions (EV) and price (FVP) as the respective order of influence.

4.10 Perceived Customer Value

The results of the main hypothesis of this research were extracted from SPSS and presented both graphically and using tables in section 4.10.1 and summarised in section 4.10.2.

4.10.1 Summary of PCV Output

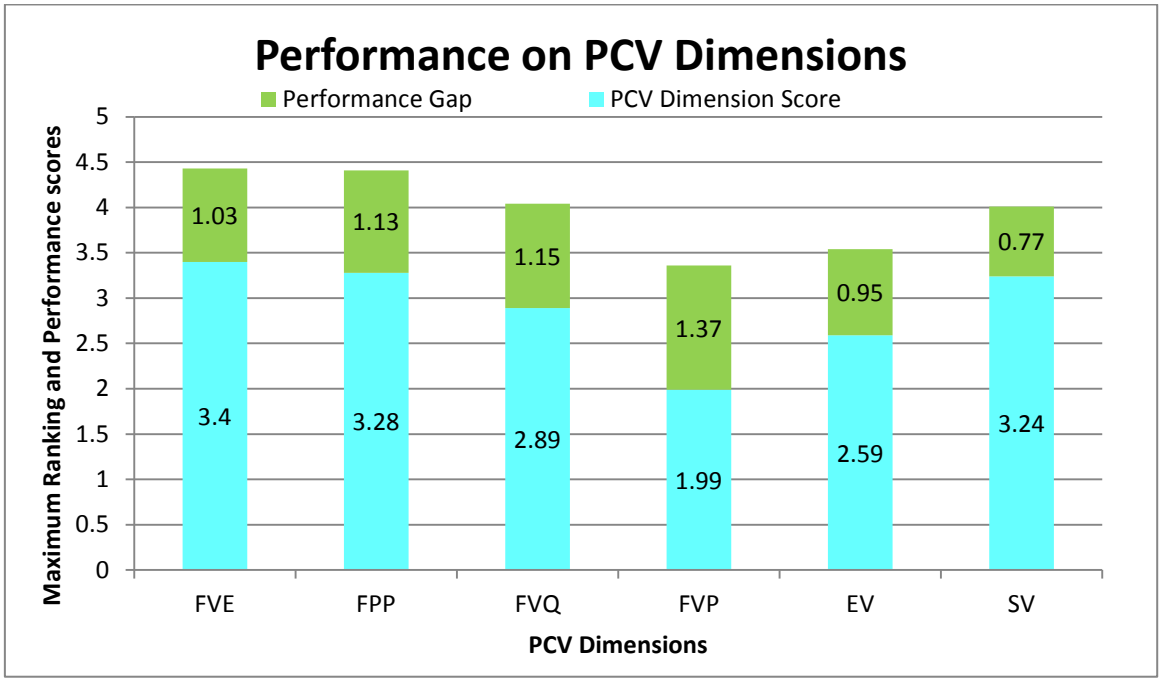

Figure 4.8: Performance on PCV Dimensions

Performance Percentages of PCV Dimensions

	FVE	FPP	FVQ	FVP	EV	SV
Performance Scores	3.40	3.28	2.89	1.99	2.59	3.24
Max Ranking Products	4.43	4.41	4.04	3.36	3.54	4.01
Performance %	76.75	74.38	71.53	59.23	73.16	80.80
Performance Gap %	23.25	25.62	28.47	40.77	26.84	19.20

Table 4.26: Performance Percentage on PCV Dimensions

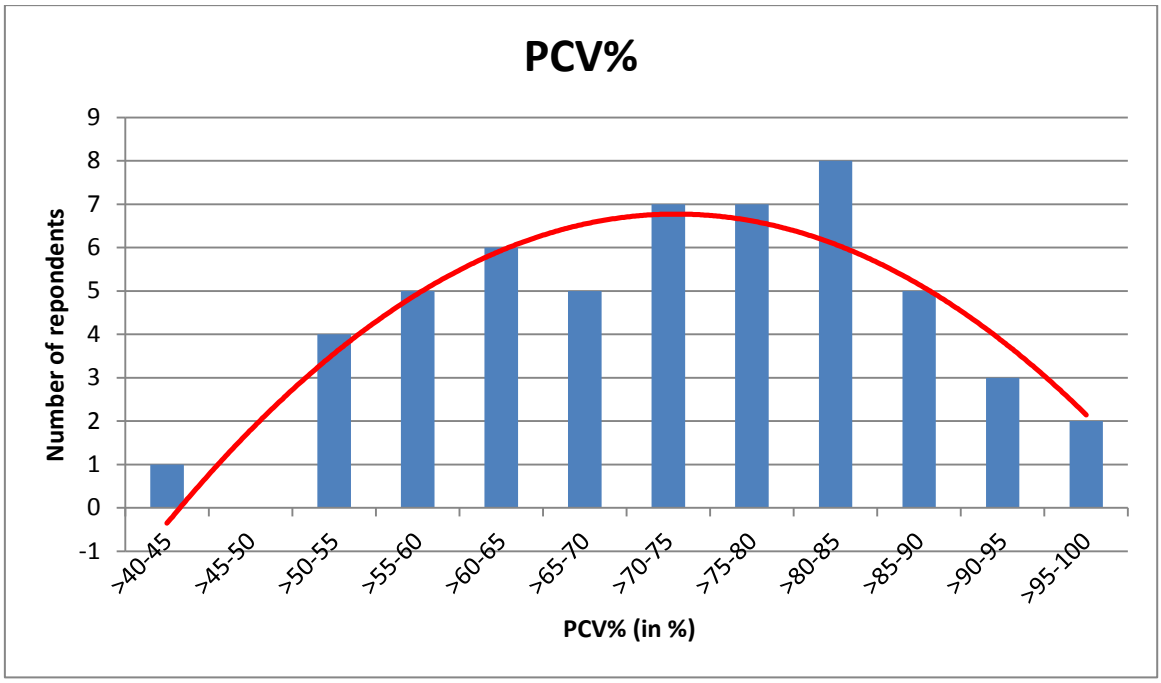

Figure 4.9: Histogram of PCV%

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PCV%	53	42.78	97.24	73.14	13.030
Valid N (listwise)	53				

Table 4.27: Mean and Standard Deviation for PCV%

Case Processing Summary

		N	%
Cases	Valid	50	94.3
	Excluded[a]	3	5.7
	Total	53	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.28: PCV Validity

Reliability Statistics

Cronbach's Alpha	N of Items
0.928	25

Table 4.29: PCV Reliability Statistics

Test Statistics

	VAR00015
Chi-Square	0.000[a]
df	25
Asymp. Sig.	1.000

a. 26 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.

Table 4.30: PCV Test Statistics (Significance)

Hypothesis Testing

Hypothesis type	Decision	Error Type
H_0: μ = 80 → At μ = 73.14%, H_0 is applicable. (Null hypothesis)	DO NOT REJECT	Type II error P(Type II error) = β
H_1: μ > 80 → At μ = 73.14%, H_1 is not applicable. (Alternative hypothesis)	REJECT	

Table 4.31: Hypothesis Test Decision

4.10.2 Summary of PCV Results

The data from Figure 4.8 indicates the performance gaps computed from each of the PCV dimensions. These performance gaps, however, need to be quantified in the context of the maximum ranking scores per PCV dimension. Table 4.27 illustrates this more clearly, with the performance gaps translated into percentages. The notable problem area is more visible, with FVP showing the biggest performance gaps at 40.77%. This is followed by FVQ at 28.47%. This sequence continues, respectively, to EV at 26.84%, FPP at 25.62%, FVE at 23.25% and SV at 19.2%. These results are problematic to some extent, given

that the ranking of SV (i.e. pcv_6) showed the fourth highest ranking influence on Table 4.26 at 16.86%. Conversely, CPD scored the highest level of performance on SV (19.2%). In other words, there is misalignment between the low terminal priorities and the higher performance level on this PCV dimension. Other PCV dimensions showed performance percentages that compared relatively well with their ranking influence levels. For instance, FVE showed the highest ranking influence percentage at 18.62%, compared to a second performance percentage of 76.75%. FPP had the second ranking influence percentage of 18.54% and the third performance percentage of 74.38%.

What is probably the most significant finding is that CPD showed the largest performance gaps on the main tangible deliverables such as price (FVP), at 40.77% and quality (FVQ) at 28.47%. The FVQ is an indication of whether or not the consumer thinks that the quality is built into the product or service offering (Sanchez et al., 2004) (Roig et al., 2006). This should be seriously considered by the CPD in terms of what intervention could be introduced to improve the perceived concerns of the CPD customers. The price-related concern could be explained by the noted uncertainty of the respondents in terms of price-related questions as observed earlier in Figure 4.5 and discussed in 4.6.2. It may be important for the CPD to address price-related uncertainties through sharing more cost information to more project stakeholders, to improve this.

The performance levels of the six PCV dimensions enabled the six research objectives to be answered and summarised in Table 4.26.

Answers to Research Objectives

No	Objective	Answer
1.	To determine the functional value of the establishment/department (i.e. the CPD)	The FVE is at 76.75%.
2.	To determine the functional value of personnel from CPD.	The FVP is at 74.38%
3.	To determine the functional value of quality from CPD.	The FVQ is at 71.53%.
4.	To determine the functional value of price of capital projects.	The FVP is at 71.53%
5.	To determine the emotional value of capital projects.	The EV is at 73.16%.
6.	To determine the social value of capital projects.	The SV is at 80.80%.

Table 4.32: Answers to Research Objectives

Further considerations of data from Figure 4.9 to the computed mean and standard deviation figures in Table 4.27 show that the frequency distribution represents a normal sampling distribution. This is justified by the on trend-line shape on Figure 4.9. This concurs with the principle that sample sizes greater than 30 can be represented by the normal sampling distribution in order to calculate the sample size and estimate the population mean (Keller, 2009). The mean is computed in Table 4.27 and resulted in a value of 73.14%. This value aligns to the peak of the red trend-line in Figure 4.9, which falls on the frequency class boundary of 70 to 75. Table 4.31 shows a comparison of the mean value of 73.14% to the hypothesised value of greater than 80% and indicates that:

H_0 : $\mu = 80$ →The null hypothesis is not rejected.

H_1 : $\mu > 80$ →The alternative hypothesis is rejected.

The standard deviation is computed at 13.03, suggesting that the variance from the mean is large. The validity of the statistic is high at 94.3%, as shown in Table

4.28. The internal reliability in Table 4.29 was achieved with a Cronbach Alpha value of 0.928 for the 25 questions, from section B up to G in the questionnaire. In the event, Cronbach Alpha values greater than 0.8, they are considered good (Sekaran and Bougie, 2009). This high value suggests that the 25 questions reliably measure PCV. The significance of this research is computed at 1,0 as shown in 4. 30. Now, in case of þ-value of greater than 0.1, such a case indicates that there is no evidence to infer that the alternative hypothesis is true (Keller, 2009). The error in this instance is limited to a Type II error (i.e. β) (Keller, 2009).

4.11 Summary

The outcome of this chapter is explained by reviewing the results against the objectives and the hypothesis of this research. This was discussed in Chapter Three and specifically demonstrated in Figure 3.1. In this context, Figure 4.10 presents the results using the same reference structure.

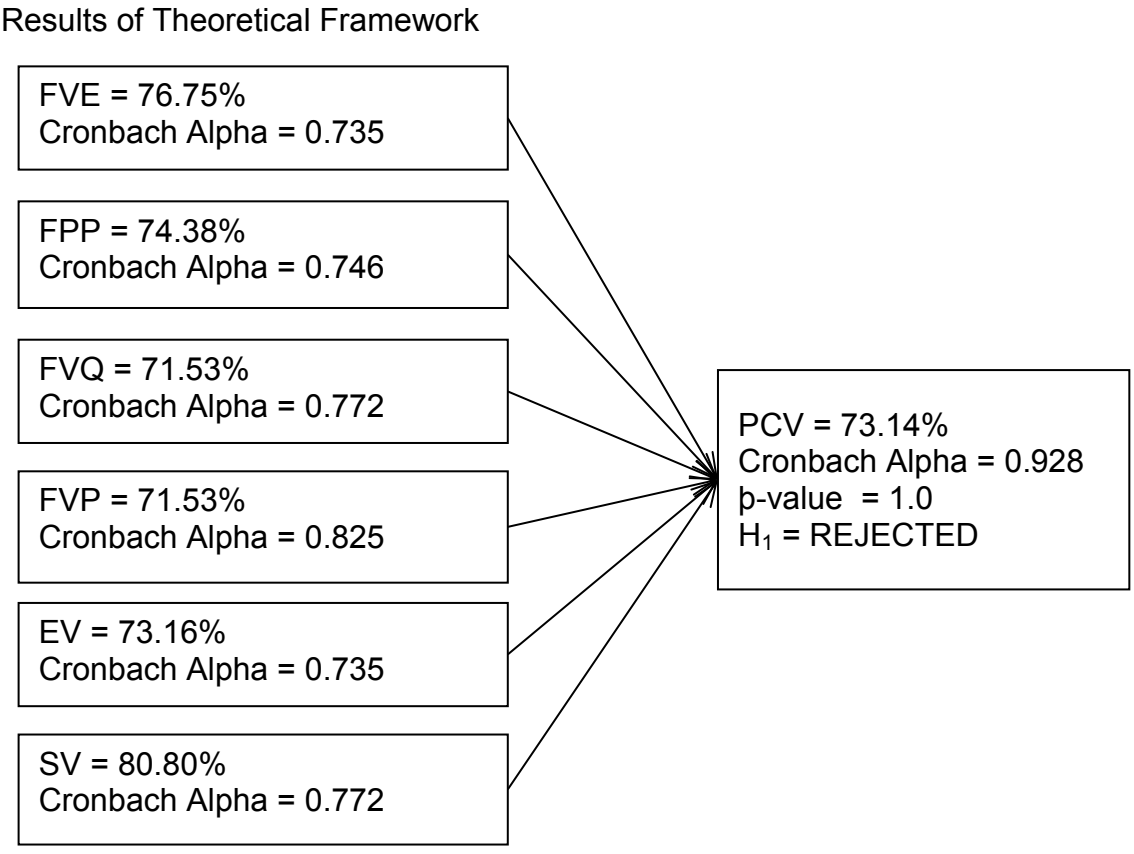

Figure 4.10: Review of Results Using the Theoretical Framework

The six objectives of this research, as set out in Figure 4.10, were to be used to determine PCV of the sample mean. The results of this research have been able to test each one of the dimensions, together with the hypothesis, as discussed below.

The FVE was computed to have Cronbach alpha of 0.735, a PCV at 76.5% and a total gap of 23.25%. While the terminal representatives consider the FVE as the most important contributor to PCV, the CPD needs to reduce the performance gap to within 20%. Matters such as the CPD organisational make-up structure, the project execution philosophy and the broader departmental responsibilities may not be well understood by the terminal representatives, resulting in some questions with low scores.

The performance results of FPP (at 74.38%) show a Cronbach alpha value of 0.746. The mean FPP value was close to the target threshold of > 80%. The judgement from the sample was that FPP is the second most important value for the sample. In order to improve and/or enhance performance in this regard, the issues that showed weakness in this area were the findings where the personnel may not be working to their capabilities in the manner they execute the projects.

The FVQ questionnaire tested for the Cronbach Alpha, which was 0.772, proving the internal reliability of the questions. The FVQ was tested for PCV and, surprisingly, showed 71.53%, given its importance to quality, in general. It was equally surprising that the respondents did not think it was one of the most important influencing factors towards the determination of PCV. The respondents did not think that FVQ was the most important dimension in terms of tangible quality dimensions.

The FVP showed that the Cronbach Alpha was acceptable at 0.825 and a performance value of 71.53%. The questions associated with this dimension tell us that there were high levels of uncertainties from the terminal representatives in terms of what projects cost terminals and how those costs related to the available budgets. FVQ dimension is the single dimension, where CPD could make the

biggest impact in terms of improving PCV to the terminal representatives by ensuring that the project deliverables, quality of the deliverables and project delivery lead-time are within customer expectations. Similarly, the terminal representatives need to take more interest in the cost impact to their viability as a result of the project delivery. This could be explained by the low finance representation to the research, with only 2 respondents in the sample representing finance.

EV tested with a Cronbach Alpha result of 0.825, with an acceptable reliability statistic. The PCV test proved to be 73.16%. The notable issues related to the point that, though the terminals seemed to indicate that they felt good about projects, in general they were entirely happy and relaxed about the products finally being delivered

For the last objective (SV), the Cronbach Alpha result of 0.772 was acceptable, together with the highest PCV measurement of 80.80%. The respondents clearly indicated that the intended social impact they expected from the projects was evident. The terminal representatives indicated that external parties thought positively of the terminals as a result of the projects delivered. Improvements in other dimensions such as quality and price could improve the social impact to even higher levels than what is already demonstrated in this research.

The outcome of these six objectives has resulted in the consolidated testing of the 25 items from the questionnaire to determine the reliability of the 25 item questionnaire and if it is indeed measuring PCV. The Cronbach Alpha result proved to be acceptable, at 0.928. The PCV result was, however, lower at 73.14%, than the hypothesized value of > 80%. The H_1 alternative hypothesis was therefore rejected, on that basis.

This chapter has enabled the research to test all the objectives of the research, together with the hypothesis. The results shown in this chapter will be the main basis for Chapter Five, which will seek to make recommendations and conclusions

5. CHAPTER FIVE
Conclusions and Recommendations

5.1 Introduction

This chapter continues from the outcomes of Chapter Four in which the results of the research were presented and analysed. Chapter Five reflects on the broader literature covered in this study and the holistic outcomes of each of the research objectives. The objectives are therefore tested from the context of the literature reviewed, the outcomes of the fieldwork, the conclusions reached and the recommendations made from this process. It then draws conclusions concerning the research question, before stating the main implications of the research. Recommendations to solve the research problem are then proposed. These are followed by recommendations for future studies. The chapter is concluded with a summary of what the chapter and the research revealed.

5.2 Conclusions Based on the Literature Review

The literature review indicated that, for the purposes of this research, value was defined in the context of the customer as the judge for products and service attributes (Zeithaml, 1988). This judgement was subject to change over time, depending on the continuously unfolding experiences (Woodruff, 1997, Sanchez et al., 2004). PCV measurement gave managers the understanding of the quantum of the value generated from a purchasing experience. The measurement thereof should be based on a clear value approach among the options available (Korkman, 2006). The *cognition-affect-behaviour* approach was found more suitable for this TPT case. It became clear that value measurement had often been measured in external instances, and the *cognition-affect-behaviour* method that was relevant to this study was the GLOVAL system. However, there was no basis preventing the measurement of this, to internal customers. PCV measurement must be based on the measurement of FVE, FPP, FVQ, FVP, EV and SV, as the six limiting dimensions forming PCV (Sanchez et al., 2004, Roig et al., 2006, Fiol et al., 2007, Ivanauskienė et al., 2012). The measurement of PCV must be based on the measurement of the full concept, taking into account the

strength of research by others. The present research aimed at advancing a methodology that not only quantifies the influence of the PCV dimensions, but also literally measured it.

The project managers executing projects must be armed with the relevant skills, competencies and professionalism to execute projects such that customer expectations can be met or exceeded (Patanakul and Shenhar, 2011). Projects require that the science of delivering the projects is utilised to deliver the value it intends to achieve. Project managers need to acquire the art of handling socio-cultural issues. Even more importantly, is that it is necessary for project managers to be able to balance both of these items (Patanakul and Shenhar, 2011). In order to create value for its customers, establishments (i.e. Project Management Offices) must provide environmental conditions that promote the successful delivery of projects (Sanchez et al., 2004, Roig et al., 2006, Ivanauskienė et al., 2012). The price of the assets delivered must be justifiable for value to be realised. The realisation of a desired end state after a consumption experience increases social value to customers.

5.3 Objective One (FVE)

•Objective one tested how much FVE the respondents believed was as a result of the project(s) delivered. There were five elements used to determine the magnitude of the FVE created, by utilising questions 1 to 5 from section B of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the FVE (Ivanauskienė et al., 2012, Fiol et al., 2007). It recognised that, while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV, in general, was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The respondents indicated that FVE was the most important contributor (at 18.62% ranking influence) to PCV, in this case. It showed that 76.8% of the FVE was received (against a target of 80%) on projects delivered. Respondents agreed that they found value in only two of the five elements (namely project methodology and contribution to the organisation) under the FVE. There was a notable increase in uncertainty and disagreement to the other three questions on the remaining two elements.

Conclusion: It is clear that FVE was important to the respondents. The performance on this dimension was slightly below the expectations of the customers. There were three areas that respondents demonstrated increasing disagreement and uncertainty. These were the capacity to deliver projects, whether CPD was representative to a modern Project Management Office and the accessibility of the CPD.

Recommendation: It is recommended that the CPD critically reviews its matching of capacity in relation to its delivery programme, quality and cost. This should be done in the context of project management best practices (such as the Project Management Body of Knowledge) and the TPT business context (e.g. safety, environmental, risk, etc.). The CPD also needs to critically review how the understanding of their role as Project Management Office can be transferred to the terminal representatives. Initiatives such as internal alerts, roadshows and internally published print articles could be used to transfer such knowledge. In addition, the accessibility of the CPD needs to be enhanced. A clear plan that shows how terminals can access CPD, regardless of their location, needs to be published. Such a plan should include the chain of command to be followed to address problems.

5.4 Objective Two (FPP)

•Objective two tested how much FPP the respondents thought was a result of the project(s) delivered. Four elements were used to determine the magnitude of the FPP, created by utilising questions 1 to 4 from section C of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the FPP (Fiol et al., 2007, Ivanauskienė et al., 2012). It recognised, however that, while recognised that while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV in general was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The results showed that respondents thought that FPP was the second most important contributor (at 18.54% ranking influence) to PCV. It was found that 74.38% of the FPP was received (against a target of 80%) for projects delivered. Only one of the four elements (i.e. personnel experience) under the FPP successfully achieved value.

Conclusion: The FPP was found to be very important to the respondents given its marginal difference from the highest contributor (0.04%). The performance on this dimension was clearly below the expectations of the customers. Job knowledge, up-to-date work and whether the CPD personnel made the project process smooth or not were the three areas in which respondents demonstrated increasing disagreement and uncertainty.

Recommendation: It is recommended that the CPD evaluates how its personnel compares to the best practices such as the 10 Project Management Knowledge Areas, the critical applicable laws to the TPT project environment, etc. The gaps therein would

direct the development of its personnel. In turn, the personnel would perform their duties with the necessary due diligence. The CPD management team should monitor how its personnel are adhering to the completion of commitments during the project progress stages in order to improve the service received by the terminals. In order for the CPD personnel to be seen to be making the project process smooth, it may need to utilise internal communication tools to share more knowledge about the governance under which projects are managed within TPT.

5.5 Objective Three (FVQ)

•Objective three tested how much FVQ the respondents thought was as a result of the project(s) delivered. Four elements were used to determine the magnitude of the FVQ created by utilising questions 1 to 4 from section D of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the FVQ (Fiol et al., 2007, Ivanauskienė et al., 2012). It recognised that, while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV in general was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The respondents indicated that FVQ was the third most important contributor (at 16.98% ranking influence) to PCV. It showed that 71.53% of the FVQ was received (against a target of 80%) for projects delivered. Respondents could not find value in any of the four FVQ elements, though the mean value representing quality of the project deliverables was close

to an acceptable level (i.e. 3.98 compared to 4 on the likert scale).

Conclusion: Clearly, the FVQ was below the respondents expectations. A significant number of the respondents found the correctness of the deliverables, the quality of the deliverables, the delivery of the project within the required time and the acceptability of the deliverables by the market to be questionable. The respondents demonstrated some of the highest numbers of disagreement and uncertainty per question in this dimension.

Recommendation: Notwithstanding the existing controls in terms of scope agreement at the start of the project, it is recommended that the CPD implements check sheets that tests the project deliverables against the project scope for sign-off at the project hand-over stage. The quality methodology utilised by CPD should be reviewed against the best practices such as International Organization for Standardization (ISO) 9000 to identify gaps in order to align the TPT quality methodology to international best practices. These practices would, in turn, assure terminal representatives of the quality. The CPD should assess if the late delivery of projects is due to internal CPD-related reasons or other broader TPT processes such as insufficient funding from pre-feasibility work to procurement delays, which would, in turn assure terminal representatives of the quality. The CPD should utilise independent Post Implementation Review to assess if the unacceptability of the deliverables by the market is due to incorrect scoping, deviations from the scope agreed with the terminal representatives, supplier design, or manufacturing quality, in order to determine the necessary actions.

5.6 Objective Four (FVP)

•Objective four tested how much FVP the respondents found as a result of the project(s) delivered. Three elements were used to test the magnitude of the FVP created, by utilising questions 1 to 3 from section E of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the FVP (Ivanauskienė et al., 2012, Fiol et al., 2007). It recognised that, while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV, in general was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The results showed that respondents thought that FVP was the least important contributor (at 14.12% ranking influence) to PCV. It was found that 59.23% of the FVP was received (against a target of 80%) for projects delivered. None of the three elements under the FVP successfully achieved value.

Conclusion: Clearly, the FVP was not achieved and the respondents indicated high levels of uncertainty on this dimension. The respondents thought it was of least importance. This could be explained by the limited participation of respondents from finance. The service does not match the price paid. Prices were not the main motivation for investing.

Recommendation: It is recommended that the CPD utilises the project progress meetings to focus specifically on cost reporting, to make all stakeholders fully aware of cost of the project. The implementation of the proposed recommendations for other research objectives would give the better value, relative to the

project costs. The terminal representatives should consider the project cost impact more carefully on the viability of their terminal. Reduction of project costs will boost terminal profitability.

5.7 Objective Five (EV)

•Objective five tested how much EV the respondents found as a result of the project(s) delivered. Five elements were used to test the magnitude of the EV created by utilising questions 1 to 5 from section F of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the EV (Ivanauskienė et al., 2012, Fiol et al., 2007). It recognised that, while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV, in general,was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The results showed that respondents thought that EV was the second least important contributor (at 14.88% ranking influence) to PCV. It was found that 73.16% (third best performance) of the EV was received (against a target of 80%) for the projects delivered. None of the five elements under the EV successfully achieved value.

Conclusion: Clearly, the EV was not achieved. There were mixed feelings in terms of whether respondents were happy with the products delivered, whether they were relaxed about the products delivered, whether they felt positive about the project execution, whether they felt positive about the project communication and whether they felt good about projects.

This indicates that the general delivery of projects produced relatively inconsistent emotions within the terminals representatives.

Recommendation: It is recommended that CPD utilises the recommendations discussed under different objectives to introduce changes that will produce more consistent results. The CPD should analyse if there are specific patterns between the EV and terminals or departments.

5.8 Objective Six (SV)

•Objective six tested how much SV the respondents found as a result of the project(s) delivered. Four elements were used to test the magnitude of the SV created, by utilising questions 1 to 4 from section G of the questionnaire.

•Findings

Literature: The literature indicated that PCV was formed of six main factors, amongst which was the SV (Fiol et al., 2007, Ivanauskienė et al., 2012). It recognised that, while there may be other factors that could contribute to PCV, they were of such insignificance that their inclusion in representing PCV, in general, was not justifiable (Sweeney and Soutar, 2001, Sanchez et al., 2004, Roig et al., 2006).

Fieldwork: The results showed that respondents thought that SV was the third least important contributor (at 16.86% ranking influence) to PCV. It was found that 80.80% of the SV was received (against a target of 80%) for projects delivered. Only one of the four elements (namely project delivery as a positive indicator about the terminal to customers) under the SV did not successfully achieve value. The question about the project

delivery as a positive indicator about the terminal to competitors achieved a similar score. However, its mean value from the likert scale indicates that it achieved 4.04 out of 5, and such it was judged to have achieved SV.

Conclusion: SV proved to be achieved by the CPD. Although it was judged to be of the third least importance, the CPD performed the best on this dimension.

Recommendation: It is recommended that the implementation of the recommendations from other objectives would positively impact on the SV dimension.

5.9 Conclusions on the Research Question

This research sought to determine the extent to which the internal delivery of capital projects was perceived to be yielding customer value in order to assist the CPD to determine areas of its service that need improvement. The research therefore hypothesised that "the PCV received by the terminal representatives for the internal capital projects in KwaZulu-Natal is more than 80%".

The testing of the research hypothesis showed that the actual mean value of the PCV measured was 73.14%, compared to the hypothesised value of more than 80%. The alternative hypothesis (H_1) was therefore rejected and the null hypothesis (H_0) was not rejected. This result was supported by a statistical significance value (*p*) of 1.0.

It can be concluded that the research found that there was not enough statistical evidence to infer that the alternative hypothesis is true.

5.10 Implications of this Research

This research has made it possible for the following to occur:

- It has identified several problems for the management of CPD to identify priorities and weaknesses from a customer perspective. Therefore the CPD can respond more effectively to the challenges identified.
- TPT executives and the Capital Investment Committee can now understand how their investment decisions have been implemented. They can assess whether their efforts are yielding good value for the business or not.
- Terminal representatives were now able to see whether or not the views they hold on an individual basis are commonly felt by others throughout various terminals.
- Similar Project Management Offices delivering internal projects within Transnet, in other SOCs or in other industries would now be able to adapt this tool for using it to measure PCV in their environments.
- The research was a cross-sectional study at this stage, but it can be used as a basis for future annual longitudinal studies.
- Project Management Offices now have a tool to measure PCV for their internal customers that can also be adapted to external customers.

5.11 Recommendations to Solve the Research Problem

It is recommended that the CPD prioritises the recommendations that are associated with FVQ and FVP given their tangible nature, their visible change implementation activities and results. While recommendations such as implementing ISO 9000 may require a mid- to long-term period, their process will provide visible progress that would not only motivate the terminal representatives, but even the project personnel and the suppliers. The recommendations that are associated with intangible dimensions such as FVE, FPP and EV have short-term action, such as the utilisation of communication platforms that can be implemented with no cost impact. Other dimensions will require longer-term activities that will impact over a lengthy duration, such as the development of personnel, as suggested in section 5.4. The costs of implementing these changes should be viewed against the cost of incorrect, unusable or inferior products and services.

The financial losses associated with these reasons cannot be recovered once incurred (sunk costs). It is therefore important for TPT to eliminate such risks.

In conclusion, these recommendations must be implemented with due care in terms of gradual implementation, in consideration of the organisational capacity and the project roll-out plan within the CPD.

5.12 Recommendations for Future Studies

The following outcomes should be considered for future studies:

- The current study was limited to the internal customers concerned with PCV of the projects delivered by the CPD. A much broader study should, for instance, test for the PCV received by the external customers for TPT in terms of executed projects.
- The CPD may want to test for performance from within their organisation as a more pragmatic measurement than the PCV. In such a case, the Project Management Knowledge Areas, among others, should act as a reference base for measuring project performance.

5.13 Summary

Chapter Five presented the conclusions and recommendations of this research. It reviewed the main points that were identified in the literature for research objectives and the hypothesis. The chapter summarises each of the six research objectives, by reflecting on the key points of the literature review, the findings, fieldwork results, conclusions and recommendations. This process showed that only one of the six dimensions (i.e. SV) achieved the targeted value measurement (80%) and measured just 80.8% of SV.

In addition, 73.14% of PCV was measured against a hypothesised value of more than 80%. The alternative hypothesis (H_1) was rejected and the null hypothesis (H_0) was not rejected. The data from the survey therefore did not prove the

hypothesis that it aimed to prove. However, a simple PCV testing model called the Case Research PCV Equation was formulated and successfully utilised.

The implications of the research were then reviewed. After which, recommendations for this study and future studies conclusions were made.

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APPENDICES

Appendix 1: Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

18 June 2013

Mr Andile Benedict Madlala 210512550
Graduate School of Business & Leadership
Westville Campus

Protocol reference number: HSS/0505/013M
Project title: Perceived Customer Value in the Internal Delivery of Capital Projects at Transnet Port Terminals

Dear Mr Madlala

Expedited approval

I wish to inform you that your application has been granted Full Approval.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Professor U Bob (Chair) & Dr S Singh (Deputy Chair)

/px

cc Supervisor: Dr Willem Bester
cc Co-Supervisor: Alex Bozas
cc Academic Leader Research: Dr SA Bodhanya
cc Post Graduate Administrator: Ms Wendy Clarke

Humanities & Social Sciences Research Ethics Committee
Professor Urmilla Bob (Chair) and Dr Shenuka Singh (Deputy Chair)
Westville Campus, Govan Mbeki Building
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Website: www.ukzn.ac.za
Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

Appendix 2: Informed Consent Letter

TRANSNET

28 May 2013

To Whom It May Concern

RE: **Letter of consent to use the company name in the fulfillment of a Masters in Business Administration Degree dissertation (Topic - *Perceived Customer Value in The Internal Delivery of Capital Projects at Transnet Port Terminals* for Andile Madlala)**

Dear Sir/Madam

Kindly be informed that Andile Madlala (Co. No. 52302) is an employee within Transnet Port Terminals and is sponsored by the Transnet Bursary Scheme for his Masters in Business Administration Degree with the University of KwaZulu-Natal (Student No: 210512550).

As part of his studies, Andile has requested permission to use our company name (i.e. Transnet Port Terminals) on the above-mentioned dissertation topic. I have therefore granted permission on behalf of Transnet Port Terminals for this study to be carried out.

Kind regards

Karl Sociwa
Chief Executive, Transnet Port Terminals

A division of
Transnet SOC Ltd

Registered Office Park
Stokkiaan Simelane Street
Durban 4001

PO Box 33124
Naval Hospital, Durban
South Africa 4065

www.transnet.net

Directors

Appendix 3: Questionnaire

A) SAMPLE PROFILE

1. Which terminal do you represent?
   - ☐ Durban Container Terminal Pier 1
   - ☐ Durban Container Terminal Pier 2
   - ☐ Maydon Wharf Terminal
   - ☐ Durban RoRo Terminal
   - ☐ Richards Bay Terminal

2. What is the current role of your department?
   - ☐ Operations
   - ☐ Planning & Logistics
   - ☐ Technical
   - ☐ Finance
   - ☐ Human Resources
   - ☐ SHEQ –Security-Sustainability
   - ☐ Communications
   - ☐ Other

3. What is your role within TPT?
   - ☐ Supervisory (Below F)
   - ☐ Junior Manager (E+F)
   - ☐ Middle (D)
   - ☐ Executive (C or higher)

4. How long is your experience within TPT? _____yrs

5. How many capital projects have you been involved within TPT?
   - ☐ 4 or less
   - ☐ 5 or greater but less than 10
   - ☐ 10 or greater but less than 15
   - ☐ 15 or greater

6. What is the size of the largest TPT project you have been involved with?
   - ☐ Less than R5m
   - ☐ R5m or greater but less than R10m
   - ☐ R10m or greater but less than R50m
   - ☐ R50m or greater but less than R100m
   - ☐ R100m or greater

B) FUNCTIONAL VALUE OF DEPARTMENT (i.e. CAPITAL PROJECTS DEPARTMENT)

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. The Capital Projects Department organisation and structure seems capacitated enough to effectively deliver projects. 1 2 3 4 5

2. The methodology used by the Capital Projects Department enables the effective delivery of projects. 1 2 3 4 5

3. The Capital Projects Department is not a representation of modern project management offices. 1 2 3 4 5

4. It is easy to see the contribution that the Capital Projects Department provides internally within the organization. 1 2 3 4 5

5. The Capital Projects Department is inaccessible (it is not easy to find their staff when you need them). 1 2 3 4 5

C) FUNCTIONAL VALUE OF PROJECT PERSONNEL (PROFESSIONALISM)

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. The Capital Projects Department personnel know their job well and the options available to me within TPT. 1 2 3 4 5

2. The Capital Projects Department personnel is not experienced enough for their job. 1 2 3 4 5

3. The Capital Projects Department personnel's job is not up to date. 1 2 3 4 5

4. The Capital Projects Department personnel made the project management process smooth and clearer. 1 2 3 4 5

D) FUNCTIONAL VALUE OF PRODUCTS AND SERVICES PURCHASED (QUALITY)

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. The project deliverables / products and services as a whole is / are correct. 1 2 3 4 5

2. The quality of the project deliverables / products and services is /are correct. 1 2 3 4 5

3. The delivery of the project(s) is not within the required time. 1 2 3 4 5

4. The quality level of the project deliverables / products and services is not acceptable even to the general market (i.e. competitors and customers). 1 2 3 4 5

E) FUNCTIONAL VALUE OF PRICE

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. The price we are paying / have paid for the deliverable(s) is not fully justifiable. 1 2 3 4 5

2. The service is good for the price it has cost. 1 2 3 4 5

3. The price we are paying / have paid is the main reason for TPT deciding to invest. 1 2 3 4 5

F) EMOTIONAL VALUE

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. I am not happy with the product(s) delivered to me. 1 2 3 4 5
2. I feel relaxed about the products delivered. 1 2 3 4 5
3. The delivery of the project(s) gave me (a) negative feeling(s) in the manner it was executed. 1 2 3 4 5
4. The communication about the project(s) was two way and it left a positive feeling to me. 1 2 3 4 5
5. In general, I feel good about the project(s). 1 2 3 4 5

G) SOCIAL VALUE

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Using the above Likert scale, state the extent to which you agree with each of the following statement by circling your answer.

1. The delivery of this / these project(s) is a positive indicator about our terminal to other TPT terminals 1 2 3 4 5
2. The delivery of this / these project(s) is a negative indicator about our terminal to our customers 1 2 3 4 5
3. The delivery of this / these project(s) is a negative indicator about our terminal to our competitors 1 2 3 4 5
4. The delivery of this / these project(s) is a positive indicator about our terminal to the broader industry 1 2 3 4 5

H) PERCEIVED CUSTOMER VALUE

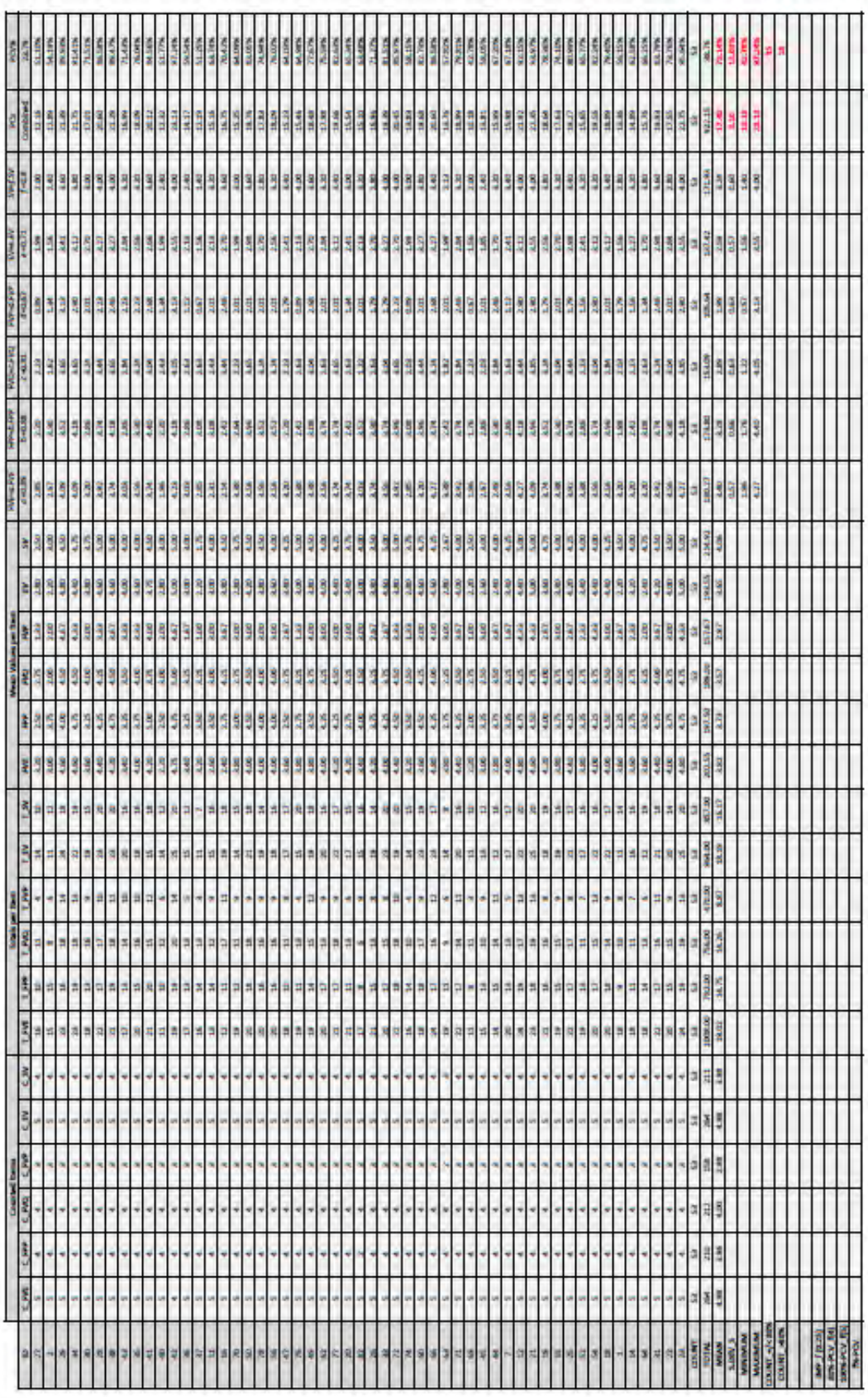
Indicate the extent to which you agree with the following statements as they relate to value in the delivery of capital projects. Circle the appropriate number against each, using the scale below.

Strongly Disagree	Disagree	Neither agree / Nor Disagree	Agree	Strongly Agree
0	1	2	3	4

The following attribute is **very important** to me:

a)	The contribution from the projects department (i.e. The Capital Projects Department) to projects	0	1	2	3	4
b)	The professionalism of the projects personnel (i.e project managers / project planners / line managers)	0	1	2	3	4
c)	The quality of products and / or services received in projects.	0	1	2	3	4
d)	The prices paid on projects	0	1	2	3	4
e)	The emotions I experience in the process of project delivery	0	1	2	3	4
f)	The social impact that I find in the delivery of project	0	1	2	3	4

Appendix 4: Detailed Calculations



Appendix 5: Gatekeepers Letter

TRANSNET

28 May 2013

To Whom It May Concern

RE: **Letter of permission from the Gatekeeper *iro* the dissertation for Masters in Business Administration Degree (Topic - *Perceived Customer Value in The Internal Delivery of Capital Projects at Transnet Port Terminals* for Andile Madlala)**

Dear Sir/Madam,

Kindly be informed that Andile Madlala (Co. No. 52302) is an employee within Transnet Port Terminals and is sponsored by the Transnet Bursary Scheme for his Masters in Business Administration Degree with the University of KwaZulu-Natal (Student No: 210512550).

As part of his studies, Andile has requested permission to conduct research on the above-mentioned dissertation topic. I have therefore granted permission on behalf of Transnet Port Terminals for this study to be carried out.

Kind regards.

Karl Sackwa
Chief Executive, Transnet Port Terminals

A division of
Transnet SOC Ltd
Kingsmead Office Park,
Stalwart Simelane Street
Skymall 4001
PO Box 10124
Marine Parade, Durban
South Africa 4065

Appendix 6: Turnitin Summary

Document Viewer

Turnitin**Originality Report**

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Appendix 7: Editors Certificate

r

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TO WHOM IT MAY CONCERN

This is to certify that I have checked the spelling, punctuation, grammar, syntax and clarity of language of this thesis.

I have not changed the meaning in any way and have not added my own opinions or thoughts. Where the meaning of a sentence or paragraph was not clear, I have marked it for the author's attention.

Richard Adrian Bell
B. Sc. Agric. (Natal)
M. Sc. Agric. (Natal), editor.

Appendix 8: List of Figures

Number **Description** **Page**

Appendix 9: List of Tables

Number **Description** **Page**

Appendix 10: List of Abbreviations

Keyword, Description **Page(s)**

C

CPD
Capital Projects Department2, 3, 4, 5, 6, 8, 46, 47, 50, 51, 65, 66, 68, 69, 71, 72, 74, 78, 83, 87, 88, 90, 94, 95, 96, 97, 98, 100, 101, 102, 103

CVM
Customer Value Management 37, 39, 43, 44

D

DCT
Durban Container Terminal.....7, 48, 63

DRT
Durban RoRo Terminal 48, 60

E

EV
emotional value.....40, 41, 42, 59, 78

Emotional Value..... 6, 40, 43, 53, 75, 76, 77, 78, 82, 83, 84, 86, 88, 91

F

FPP
Functional Value of Personnel 6, 42, 47, 53, 54, 67, 68, 69, 78, 82, 83, 84, 86, 87, 90, 92, 95, 102

FVE
Functional Value of the Department / Establishment 6, 53, 64, 65, 66, 82, 83, 84, 86, 87, 88, 90

FVP
Functional Value of Price 6, 53, 72, 73, 74, 75, 82, 83, 84, 86, 87, 88, 90

FVQ
functional value of quality.....70, 71, 72, 82, 86, 87, 90, 92, 96

Functional Value of Quality .. 6, 42, 47, 53, 69, 71, 82, 83, 84, 87, 88, 96, 97, 102

G

GLOVAL
Global Purchase Perceived Value 41, 43, 44, 45

M

MWT
Maydon Wharf Terminal.....48, 60

P

PCV
Perceived Customer Value . 4, 5, 6, 7, 8, 9, 12, 13, 14, 15, 20, 22, 30, 35, 37, 39, 40, 43, 44, 45, 46, 47, 50, 51, 53, 54, 55, 56, 58, 59, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91, 92, 93, 94, 95, 96, 98, 99, 100, 101, 102, 103, 104

PERVAL
Perceived Value Scale 40, 41, 43

PQ
Perceived Quality 19, 20, 38, 39, 40, 42

R

RBT
Richards Bay Terminal 48, 60

RoRo
Roll-On Roll Off 2, 48, 113

S

SHEQ-SS
Safety, Health, Environment, Quality, Sustainability and Security 63

SPSS
Statistical Package for Social Sciences 56, 58, 60, 64, 67, 69, 72, 75, 78, 81, 82, 83

SV
Social Value 6, 40, 41, 42, 53, 78, 79, 80, 81, 82, 83, 84, 86, 87, 88, 91

T

TPT
Transnet Port Terminals 2, 4, 5, 6, 7, 8, 16, 43, 44, 46, 47, 48, 50, 59, 62, 68, 82, 102, 113, 114, 115, 116