SUSTAINABLE PUBLIC BUS TRANSPORT SERVICES IN THE NELSON MANDELA BAY

BY

MKHONTO MNTWINI

20661330

This case study research is submitted in partial fulfilment of the requirements for the degree of:

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Supervisor: Professor Chris Adendorff

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DECLARATION

Name: Mkhonto Mntwini

Student number: 20661330

Qualification: Masters of business administration

Title of the project: Sustainable public bus transport services in the Nelson Mandela Bay

By submitting this research report electronically I, Mkhonto Mntwini, declare that the entirety of the work contained herein is my own original work, that I am the owner of the copyright thereof (unless explicitly stated otherwise) and that I have not previously in its entirety or in part, submitted it for the purpose of obtaining another qualification.

Mkhonto Mntwini
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A heart felt thank you to all the individuals who have contributed towards the completion of this study. I would like to make special mention of the following:

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ABSTRACT

**Purpose** - Transport is a common constant variable found in just about every aspect of our lives as well as commercial activities; this is so because transport enables accessibility to people, places and goods. The effective management of public passenger transport operations is a more complex and all-embracing concept than what it may appear at first glance. Wider dispersed work place locations and urban sprawl is on the rise driven by among other factors the increased rate of globalisation. A unique opportunity is then presented in a developing country like South Africa for effective planning and management of public passenger bus operations. In the main, the purpose of this case study research was to develop a more sustainable public passenger transport bus operation to better connect people, places and goods. The organisation that will be studied is Blunden Coach Tours a luxury and semi-lux coach Tour operator, operating from the Nelson Mandela Bay.

**Design / Methodology / Approach** – This study employed the case study research approach which was based on the qualitative research paradigm as such allowed for in-depth description and analysis of the case as well as related phenomena in real world context. The researcher focused only on the public passenger bus transport operations in Nelson Mandela Bay thus assuming a single context focus with a single case namely the development of a more sustainable public passenger transport operations in Nelson Mandela Bay. An embedded multiple unit of analysis strategy was employed selecting a sample of key persons responsible for strategic operational areas at Blunden Coach tours, sub-contractors and suppliers. The case study employed an in-depth probing interview process in an effort to better comprehend occurrences within the actual context of the events observed. The secondary sources of information gathered were used to structure and backup the interview questions.

**Practical implications** – The case study enabled thought provoking insight which by virtue of South Africa’s historical socio-economic landscape offered an unusual perspective of the South African bus transport scene with a particular focus on environmental, regulatory and socio-economic sustainability considerations.

**A limitation to the study** – The lack of responses to the interview questions from some of the key role players in the bus industry who were contacted as well as some of the respondents interviewed. The lack of responses to some of the interview questions could be perceived as a limitation to validating the Summaries drawn from the study.
**Originality / Value** – This case study looks at the sustainability of bus operating ventures in the Nelson Mandela Bay.

**Research Type** – Case Study

**Key Words** – Sustainability, public passenger transport, accessibility, regulations, stakeholders, operations management, socio-economic, coach tour ventures.
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LIST OF ACRONYMS AND ABBREVIATIONS

ANC: African National Congress
BRT Bus Rapid Transit
CO2 Carbon Dioxide
CSIR Council for Scientific and Industrial Research
DMST Decision Making Support Tools
EIA Environmental Impact Assessment
EU European Union
IDZ Industrial Development Zone
IPT Integrated Transport Plan
IPTS Integrated Public Transport System
JNB Johannesburg
LDV Light Duty Vehicles
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>NMBT</td>
<td>Nelson Mandela Bay Tourism</td>
</tr>
<tr>
<td>NMIMM</td>
<td>Nelson Mandela Metropolitan Municipality</td>
</tr>
<tr>
<td>NDP</td>
<td>National Development Plan</td>
</tr>
<tr>
<td>NLTA</td>
<td>National Land Transport Act</td>
</tr>
<tr>
<td>NMV</td>
<td>Non-Motorised Vehicles</td>
</tr>
<tr>
<td>OP’s</td>
<td>Operation</td>
</tr>
<tr>
<td>UDM:</td>
<td>United Democratic Movement</td>
</tr>
<tr>
<td>PRASA</td>
<td>Passenger Rail Agency South Africa</td>
</tr>
<tr>
<td>PT</td>
<td>Public Transport</td>
</tr>
<tr>
<td>SAA</td>
<td>South African Airways</td>
</tr>
<tr>
<td>SSATP</td>
<td>Sub-Saharan Africa Transport Policy Program Discussion Paper</td>
</tr>
<tr>
<td>SERVQUAL</td>
<td>Service quality management model</td>
</tr>
<tr>
<td>VKT</td>
<td>Vehicle Kilometres Travelled</td>
</tr>
<tr>
<td>50 PPM</td>
<td>50 Parts Per Million</td>
</tr>
<tr>
<td>500 PPM</td>
<td>500 Parts Per Million</td>
</tr>
</tbody>
</table>
CHAPTER 1

1. INTRODUCTION

The South African luxury and semi-lux bus operators market tends towards an oligopoly as there are a relatively few major operators who are competing with similar product service features (Hirschey, 2009). The public passenger transport sector in South Africa is also characterised by low switching costs and is a commodity driven industry (Ugo, 2010). To remain competitive in an industry of this nature amongst other interventions, passenger public transport bus operators must continue to innovatively drive down operational costs (Tse-tung, 2010). Luxury public transport bus operators render a valuable service globally and in South Africa through providing accessibility to people, places and goods (Rolim, 2014). Globally, the tourism sector under which coach tour operators are classified contributes 9% to global GDP at 1,159 billion (US$) with an expected moderate forecast of 3.3% growth year on year toward 2030 (World Tourism Organisation, 2013). In South Africa tourism contributes R93.3 billion to GDP or 3% of GDP which still shows a significant room for improvement (House, 2014). To put this into perspective, mining contributed 524 632 jobs in South Africa on the other hand tourism contributed 617 287 direct jobs in 2012 (Chamber of Mines of South Africa, 2012).

Hill (2007) and House (2014) suggest that there is still significant potential for growth of the luxury coach bus sector in South Africa as a result of increasing globalization driven by failing trade barriers and costs of communication. Porter (2008) suggests that an organisation is able to gain a strategic advantage in the market through an effective sustainable operations management strategy. Operations management in public passenger bus transport is really concerned with the designing, overseeing and control of the process to deliver a pre-determined level of service to public passenger transport users. In fact emerging research proposes that there’s a more strategic view developing towards operations management as opposed to a tactical perspective (Halden, 2014). South Africa is a developing country characterised by increasing urban sprawl and wider dispersed workplace locations. An important gap then exists for research in South Africa, which illustrates the benefits of sustainable operations management practices in the luxury and semi-lux bus transport sector. This study will seek to address this gap by examining possible factors that may contribute towards an effective sustainable operations management strategy.
1.1. THE RESEARCH PROBLEM

Public passenger bus transport services and infrastructure in South Africa were designed initially to serve the purpose of bringing and assembling labour from outside town into central business districts and places of work (Anon, 2014). South Africa in the 21st century is a developing country competing in a global economic context and as such today the focus in passenger bus services ought to shift more towards improving accessibility, reducing per kilometre cost of transport, travel time, impact on the environment and to include socio-economic sustainability considerations (Halden, 2014). The transport sector as a whole globally ranks among the fastest growing economic sectors and is expected to continue growing (IEA, 2012). Sustainability concerns today have become increasingly topical and this is arguably no different in the bus passenger transport sector. The definition of sustainability in this instance is accepted to mean meeting the economic needs of the current and next generations without compromising the ecological, social and economic environments (Grunwald, 2012). To achieve this sustainability there is emerging evidence in literature calling for an introduction into transport planning sustainable operations management considerations (Andersen, 2009).

It is from this context therefore that the research problem was formulated as: As a result of increasing growth in the demand for public passenger bus transport services in Nelson Mandela Bay, bus operating ventures are increasingly facing a challenge of designing, implementing and monitoring of sustainable operations management practices which are cost effective, increase accessibility, address key environmental, regulatory and socio-economic developmental requirements.

1.1.2. Primary research questions

Pursuant to the transport revolution in the 1950s globally the transport sector has been amongst the fastest growing sectors and is projected to continue growing for the next 40 years (IEA, 2012). This is as a result of an increase in the total number of trips taken as well as average length per trip. There are contributing factors such as sprawling human settlements in the outskirts of cities and increasing household average income (Michael, 2015). In addition, demand for business travel in particular will continue to grow as the tertiary sector of the
economy which is responsible for a majority share of business travel than any other sector is projected to continue expanding (Litman, 2008; Cipriani & Gori 2012; Hensher, 2003).

There is further empirical evidence, which suggests that the response to this increased demand for travel will be addressed through unexciting good old fashioned traditional public passenger transport. This in the form of the bus and in the train and very much in the same form that they have existed in over the past half a century (Michael, 2015).

Therefore, it is against this background and noting that there is little prospect of radical technological solutions that would be a suitable alternative to mass public passenger transport in particular the bus, that the main research question which was addressed in this study is: How to develop a sustainable public passenger transport bus venture in the Nelson Mandela Bay to better connect people, places goods and services?

1.1.3. Secondary research questions

<table>
<thead>
<tr>
<th>RQ1</th>
<th>What is the demand for sustainability considerations to form part of public passenger bus operations planning in South Africa and in a global context?</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ2</td>
<td>How are public passenger transport bus venture operations currently being conducted?</td>
</tr>
<tr>
<td>RQ3</td>
<td>What is the impact of public passenger bus transport venture operations on the economy?</td>
</tr>
<tr>
<td>RQ4</td>
<td>What is the impact of public passenger bus transport venture operations on the natural environment?</td>
</tr>
<tr>
<td>RQ5</td>
<td>What personnel development programs are available to capacitate public passenger transport bus venture operators?</td>
</tr>
<tr>
<td>RQ6</td>
<td>What are the regulatory implications for public passenger bus ventures in South Africa?</td>
</tr>
<tr>
<td>RQ7</td>
<td>What infrastructure and financial capacity planning is required to establish a sustainable public passenger bus venture?</td>
</tr>
<tr>
<td>RQ8</td>
<td>Do the current public passenger transport bus ventures have the capacity to adopt sustainability considerations into their business?</td>
</tr>
<tr>
<td>RQ9</td>
<td>What is the impact of private vehicle use?</td>
</tr>
</tbody>
</table>
1.2. RESEARCH OBJECTIVES

1.2.1. Primary research objectives

Flowing from the main research question the primary objective of this proposed research study was: to investigate public passenger transport bus ventures operations management practices and factors that influence the success of bus ventures in the Nelson Mandela Bay in response to the projected growth in demand for sustainable public passenger bus transport.

1.2.2. Secondary research objectives

Table 1.2. Below the secondary research objectives are identified.

<table>
<thead>
<tr>
<th>RO1</th>
<th>To conduct a detailed analysis of the public passenger transport bus operations in Nelson Mandela Bay and determine whether there is a need for sustainability considerations for operators in South Africa and globally.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO2</td>
<td>To investigate the impact of public passenger transport bus operators on the natural environment where operators conduct their business in South Africa and globally.</td>
</tr>
<tr>
<td>RO3</td>
<td>To investigate the impact of public passenger transport bus operators on the socio-economic environment within which operators work in South Africa and globally.</td>
</tr>
<tr>
<td>RO4</td>
<td>To conduct detailed interviews and fill out questionnaires with relevant stakeholders in the public passenger bus transport sector in the Nelson Mandela Bay.</td>
</tr>
<tr>
<td>RO5</td>
<td>To investigate the regulatory environment which governs public passenger bus transport operations in South Africa.</td>
</tr>
<tr>
<td>RO6</td>
<td>To investigate the impact of private vehicular use in South Africa and globally.</td>
</tr>
<tr>
<td>RO7</td>
<td>To analyse the data collected and link this data to the research study propositions.</td>
</tr>
</tbody>
</table>
1.3. RESEARCH DESIGN AND METHODOLOGY

According to Yin (2014) research design and methodology is the logical scientific process that best illustrates how the empirical data collected will be linked to the studies research objectives and to the Summaries that will be tendered. It follows then from the definition that research methodology at heart is a blue print that will be employed during the entire research process that will assist the researcher navigate his way during the research process. As such, a number of factors were discovered through the literature, which have an influence towards the development of a sustainable public passenger transport bus operation in the Nelson Mandela Bay.

1.3.1. The research paradigm

This will be a social science study, which will be predominantly of the alternative approach and of the constructivism ontological perspective. Constructivism is a philosophical assumption of the view that phenomena and related issues cannot be seen to be independent of social actors (Grix, 2002; Yin, 2014). The epistemological philosophical assumptions in this study will be of an interpretivist epistemological position. This is a position that calls upon the social scientist to factor in and understand the subjective meaning of social actions (Bryman, 2001: 12–13). There is a relenting debate over the superiority of the quantitative and qualitative research methodologies, however, what is not arguable is that often the two methodologies may be used in combination appropriately to address the research question (Yin, 2014). Although quantitative data will be collected during the research process the dominant methodology of this study will be a qualitative research paradigm. The data in this instance will be collected from various sources such as interviews and archival documents. This may be done with the intension of developing an in-depth description and analysis of the case and related phenomena.
1.3.2. Secondary research

Secondary data provides important contextual information about phenomena which is not directly observable, this data will be in the form of documents and numeric data obtained from archival sources such as libraries or the internet (Yin, 2014). Literature is expanding with studies that illustrate the benefits of effective management of public passenger bus transport especially in the more developed intention socio-economic environment and towards reducing the negative impacts to the environment. Therefore, it was necessary to conduct a review of existing literature to summarize literature currently available on public passenger bus transport to respond adequately to the research problem and not to repeat what has been established already on the topic.

1.3.3. Primary research

According to Yin (2014) conducting empirical research involves collecting relevant data which implies dealing directly with the primary source of the data. The primary data collection method that was used in this study was interviews making use of semi-structured interview method. Key stakeholders in the sector and Blunden coach tours were invited to participate in these semi-structured interviews in an effort to solicit responses to get an explanation of the actions and behaviours in public passenger bus transport operations.

1.3.4. Data collection

Yin (2014) further notes that in qualitative research there are different types of data collection activities namely; conducting interviews, observing, collecting, examining, and feeling. This study as noted earlier made use of semi-structured interviews to collect primary data as well as a review of important numeric and historic data from archival documents such as financial records, journal articles and books. The study employed a purposive sampling method which allowed the researcher the freedom to select participants and sources of data based on their envisaged relevance to the case studies research question (Yin, 2014).
1.3.5. Data analysis

Research design as noted previously is a logical blueprint, which serves as a guide for the researcher and will address the logic followed in creating the links between the research questions. The research design addresses how the data will be collected. Relevant in this section is the strategy that will be used to analyse the data that is collected (Yin, 2014). In the analysis of the data collected the study used a combined technique of inductive and deductive thematic analysis (Fereday & Muir-Cochrane, 2006). Thematic analysis in this instance is understood to represent research for themes. This research for themes involves careful reading and re-reading of the data that emerge as important when describing phenomena under study. In instances where the themes emerge these then become the categories for the analysis and will further assist the researcher achieve better understanding of the overall case (Daly, 1997; Rice, 1990; Yin, 2014).

1.4. CASE STUDY RESEARCH PROPOSITIONS

In case study research Yin (2014) argues that it is imperative to link the data collected to the propositions of the research study. The dependent variable, which is also the primary purpose of this study, is to contribute to the subject of sustainable operations management in public passenger bus transport by improving the effective management of public passenger bus operators. A sum of six independent variables were identified through literature review which could have an influence on the dependent variable; these are namely economic considerations, environmental considerations, natural environment considerations, social environment considerations, regulatory environment compliance considerations, training and education as well as stakeholder relations. Chapter four of this study tested and illustrated the relationship between the dependent and independent variables.

Below are the propositions of this case study research which were tested.

P1: There is a positive relationship between protecting the natural environment and perceived success of sustainable bus ventures.

P2: There is a positive relationship between taking care of stakeholder interests and perceived success of sustainable bus ventures.
P3: There is a positive relationship between limiting of private car use and perceived success of sustainable bus operating ventures.

P4: There is a positive relationship between economic growth and perceived success of sustainable bus operating ventures.

P5: There is a positive relationship between personnel development and perceived success of sustainable bus operating ventures.

P6: There is a positive relationship between the regulatory environment and perceived success of sustainable bus operating ventures.

P7: There is a positive relationship between improved accessibility and perceived success of sustainable bus operators.
The figure below is an illustration of the propositions of this case study.

**Figure 1**: Propositions influencing the perceived success of sustainable public passenger bus transport operations in NMB

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting the natural environment</td>
<td>P1</td>
</tr>
<tr>
<td>Taking care of stakeholder interests</td>
<td>P2</td>
</tr>
<tr>
<td>Limiting private vehicle use</td>
<td>P3</td>
</tr>
<tr>
<td>Economic growth</td>
<td>P4</td>
</tr>
<tr>
<td>Personnel development</td>
<td>P5</td>
</tr>
<tr>
<td>Regulatory environment</td>
<td>P6</td>
</tr>
<tr>
<td>Improved accessibility</td>
<td>P7</td>
</tr>
</tbody>
</table>

Perceived success of sustainable Bus operating ventures
1.5. PRELIMINARY LITERATURE REVIEW

1.5.1. The impact of public passenger transport on the economy

Transport is responsible for connecting people, places, goods and services. As such there is hardly a facet of the economy which transport does not touch (Rolim, 2014). There is an emphasis in literature on improving accessibility, cost of transportation and reducing total travel time (Halden, 2014). Globally the transport sector ranks amongst the fastest growing sectors of the economy and is further projected to continue growing because of globalization augmented by falling trade barriers and urban sprawl (Litman, 2008; Cipriani & Gori 2012; Hensher & Stopher, 2003). Pursuant to this growth since the mid nineteenth century when the transport revolution occurred organisations such as European Commission (2004) have been calling for the introduction of sustainability concerns into transport planning and in this instance public passenger transport planning considerations. Sustainability for public passenger transport here is accepted to mean meeting the economic needs of the current and next generations without compromising the ecological, social and economic environments (Gruwald & Kopfmuller, 2012).

1.5.2. The impact of public passenger transport on the environment

Environmental sustainability concerns which permeate from transport related activities date back to the 1980’s; sustainability considerations in public passenger transport planning began to incorporate the natural environment into sustainability engagements (United Nations World Commission on Environment, 1987). Since then, environment considerations have become a strategic imperative for many organisations and may even establish a competitive advantage and improve overall competitiveness in the market (López-Gamero, Molina-Azorín, & Claver-Cortés, 2009). The impact of transport related activities manifests through greenhouse gases, health costs, agricultural degradation, damage to forests and climate change (NZIER Authorititative Analysis, 2008). In an effort to promote environmental sustainability in public passenger transport, stakeholders engaged in transport planning must assume an integrated strategy (Santos, Behrendt, Maconi, Shirvani, & Teytelboym, 2010). It follows then that transport considerations in development cannot be an afterthought but should form an integral
part of development and land use planning. This integrated strategic approach must go beyond simply satisfying regulatory requirements if it is to be relevant (Fátima, Freire, & Sousa, 2014).

1.5.3. The impact of using private vehicles

There is evidence in literature of the view that demand for private vehicle use is on an upward trajectory and will continue to grow for the next few decades (Hensher et al., 2003; Litman, 2008; Cipriani & Gori, 2012). This demand in private vehicle use is propelled by a number of factors which include but are not limited to increased household income, sprawling human settlements in the outskirts of cities and demand for flexibility by the travellers (Michael, 2015). From a sustainability perspective the impact of private vehicle preference by travellers in place of public passenger bus transport has exaggerated negative impacts as private vehicles users are the main contributors to congestion on the roads (Calcanhotto & Niehaus, 2014). Congestion as a result of increased demand for private vehicle use will result in wide ranging negative social, economic and environmental impacts such as degradation of the natural environment, noise pollution, reduced quality of life, reduced economic productivity, increased road accidents and CO$_2$ emissions (Honore, 2014). Therefore, there needs to be robust engagements among the relevant stakeholders such as governments, bus operators and private car users to effectively deliver an efficient public passenger bus transport solution which will talk to the needs of private vehicle users and in so doing lure them over to public bus transport (Ugo, PD, & Africa. 2010).

1.5.4. Stakeholder consideration

Transport is a common denominator on almost every facet of our economic and social activities through proving accessibility to people, places, goods and services (Rolim, 2014). It can be argued from literature that demand for transport has increased in the past half a century. This is due to improvements in technology, communication and falling trade barriers. Lastly, the increasing prosperity of societies have further contributed to an increase in the number and the average length of trips taken as well as the motorization index (Michael, 2015; Kiba & Jacek, 2014). In this instance stakeholders are accepted to be all those parties or representatives that
have an interest or will be in one way or another affected by the impact of material changes in the transport sector. These stakeholders or parties with interest in the transport sector are private operators, government, users or passengers, community or local residents as well as consideration for the social, economic and natural environment (Kiba et al., 2014).

1.5.5.1 Government and the regulatory environment

There is a consistent stance in literature of the view that governments have a strategic role to play towards creating a sustainable public passenger transport system (Suzuki, Cervero & Luchi, 2013). Pérez-martínez et al (2013) put forth a number of pertinent recommendations for policy makers. These will, for example, be policies adopted to govern land use and road transport planning. Such policies will talk to factors such as preference given to public passenger buses over private vehicles, accessibility into city centres during certain periods of the day and perhaps designated priority bus lanes, traffic light signals and right to turn into certain directions reserved for Buses to allow safe, reliable and expedited bus service provision (Pérez-martínez et al., 2013).

1.5.5.2 Private operators

Sentiments in literature tend towards the notion that there is really little prospect of a radical technological solution that would be a suitable alternative to mass public passenger transport in particular the bus (Michael, 2015). The objective, here, is to mitigate the negative impacts of travel demand which is further projected to continue to grow and that is because income levels will further continue to increase and so will demand for private car ownership (Michael, 2015; Nocera, 2014). There is evidence in literature of the view that if the challenges associated with increasing demand for travel are to be resolved, this will be achieved through really unexciting good old fashioned traditional public passenger transport (Michael, 2015; Musso & Vittoria, 2015; Nocera, 2014). This will be in the form of the bus and the train and very much in the same form that they have existed in over the past half a century (Michael, 2015). Public passenger bus operators both in the private and public sectors must come up with innovative ways to operate, reduce the associated negative impacts and at the same time increase the quality of the service that is rendered (Ugo et al., 2010).
1.5.5.3 Driver behaviour

Public passenger bus transport travellers needs are anchored on perceptions, attitudes and expectations (Litman, 2008). Quality in public passenger bus transport is widely accepted as how well does a service meet and or exceed the needs of the user (Nandan & Geetika, 2010). In response, many transport planners are looking at numerous variables with an inclination towards among others the impact of driver behaviour. The critical role of driver behaviour occurs quite regularly in the literature. This is because drivers are a common denominator to any strategy implemented towards better serving the needs of the consumer and mitigating the impact of car ownership as well as use of public passenger transport (Rolim et al., 2014). Therefore, there is a focus on reducing undesirable driving behaviour which is generally accepted to be undesirable driving events such as hard brakes, hard acceleration, hard turning and speeding which will naturally lead to higher levels of discomfort for the users, increased incidents of traffic accidents, increased emissions, reduced quality of life and burden the local economies (Rusco & Walls, 2001). To mitigate some of these undesirable driver behaviours and reduce the subsequent impact, there is an emphasis on driver education, training and real time feedback regarding driver performance (Rolim et al., 2014).

OUTLINE OF THE STUDY

CHAPTER ONE: The research proposal

This research study will have five chapters in total with chapter one serving as an introduction to the study in addition to setting the tone and direction of the study of public passenger bus transport operators. Chapter 1 illustrated the purpose of this research study, defined the research problem and objectives, contextualised the area of study, explained the research method that was used as well as a definition of key terms.
CHAPTER TWO: Literature review

Chapter two is a review of relevant literature which speaks to the research question that seeks to determine how to develop a sustainable public passenger transport bus operation in the Nelson Mandela Bay area to connect people, places and services. Chapter two therefore discusses the impact of public passenger bus transport on the natural environment, economy, society, relevant stakeholder involvement as well as sustainability considerations.

CHAPTER THREE: Research methodology and design.

Chapter 3 discusses in detail the research design and methodology that was employed in an effort to address the research problem of this study. The chapter will define the sample, method of data collection, measuring instruments and data analysis methods used.

CHAPTER FOUR: Data analysis and findings report.

In chapter four, the focus is to link the data that was collected to the research proposition. Making use of results from the primary and secondary sources of data that was collected inferences will then be made and results will be interpreted to allow drawing of Summaries and recommendations from the findings.

CHAPTER FIVE: Summary and recommendations.

This chapter five presents a summary of the research problem, the main findings of the study as well as an illustration of the limitations of the study for possible future research. The chapter then concludes with recommendations on sustainable bus operations management practices relevant to the areas that were identified in chapter 2.
SUMMARY

Chapter one set the tone for this study through an illustration of the purpose of this research study, defined the research problem and objectives, contextualised the area of study, explained the research method that was used, defined key terms and a preliminary review of literature was conducted. Chapter two which is to follow will be an integrative review of literature where the body of the review will attempt to summarise literature currently available on public passenger bus transport operations further highlighting agreements and disagreements in literature.
CHAPTER 2

LITERATURE REVIEW

2. INTRODUCTION

This review of literature will consider the perceived successes of effective management of public passenger transport operations with a focus on the impact of public passenger bus operations in the Nelson Mandela Bay (NMB). Globally operations management of public passenger transport is considered a complex discipline which has far reaching socio-economic and environmental implications as it will be illustrated in the content of this review of literature (Rolim et al., 2014). In South Africa this is no different as currently the public transport policies, strategies, planning and operations management are in a state of flux. This among other reasons, as is evidenced in literature is as a result of the fact that public transport services in South Africa really were designed initially to serve the purpose of bringing and assembling labour from outside town into central business districts and places of work (Anon, 2014).

At its nucleus however, operations management for public passenger bus transport is really concerned with the overseeing, designing and control of processes to deliver a pre-determined level of service to public passenger transport users (Halden, 2014). In fact, emerging research proposes that there’s a more strategic view developing towards operations management as opposed to a tactical perspective and that performance management has a strategic role to play in the management of the public transport sectors day to day operations (Kaplan et al., 1992).

In the public bus transport sector management will first get an understanding of what are the sector required operational inputs and the yield towards the desired end state. These inputs are generally financial, technological, human resources and in this instance this will be no different as the inputs for the bus operator in the public transport sector will be energy, labour, supplies as well as general supporting industries and services (Taylor et al., 2010).

It remains important for stakeholders like the government to spend on transport infrastructure, and equally so for bus operators to show a healthy profit. Often the temptation is to use profit and government spend as operations performance indicators which are arguably considered in literature insufficient performance measures (Bruns, 1998). The management of public passenger bus transport operations as demonstrated in literature ought to consider other
strategic operations management performance indicators that reflect not only traditionally cost based management indicators but also reflect on the strategic objectives (Kaplan et al., 1992). This review will consider literature that illustrates the positive and negative impacts of bus operators’ operations in the more developed countries on the areas of interest to be identified. This is done to eventually better understand the impact of effective management of public passenger bus transport operations in the NMB.

Transport as noted in the literature is a common and constant variable in just about every aspect of our lives and in commerce (Rolim et al., 2014). The management of public passenger transport is therefore really more complex and an all-embracing concept than what it may appear at first glance (Bruns, 1998). This review will consider against pre-postulated objectives in the specified areas the performance of the public transport sector. Successful management of the transport sector relevant to the geographical stakeholder’s needs and will require a pragmatic approach. The objective is to analyse the sectors’ effectiveness as well as efficiency and where there are interventions required. Effectiveness understood here to consider how things are being done and if there could be better ways to do things in the transport sector. On the other hand, efficiency will be accepted to demonstrate if what is being done is the right thing to do (Taylor et al., 2010).

Furthermore there is a developing trend in the literature introducing a more holistic and systematic approach to transport planning to promote effective management (Andersen, 2009). In addition, each sector of an active economy contributes in varying ways towards improving the general quality of life. The transport sector for example provides the infrastructure required to move people, goods and services. Thus in so doing transport facilitates commerce, cultural exchange as well as social activities (Taylor, 2010). Effective output management implies that there must be put in place quantifiable measures to gauge the management of the sector inputs towards the desired quality of life. Literature is expanding with studies that illustrate the benefits of effective management of public passenger transport especially in the more developed countries’ socio-economic environment and towards reducing the negative impacts to the environment. These illustrations will be of interest to the less developed countries particularly against the backdrop of intensifying competition augmented by increasing globalisation (Wang, 2007).

This will be an integrative review of literature where the body of the review will attempt to summarize literature currently available on public passenger transport and highlight
agreements and disagreements in literature further, the dominant methodology will be that of a qualitative nature in strategy (Yin, 2014).

The review will consider a combination of literature from various social science studies with the focus of developing an in-depth description and analysis of the case and related phenomena. There were dominant themes evident in the literature, which will be observed in the content of this review. It transpired as it will be discussed in the body of this review that investment into the development of public passenger transport as a whole is fundamental to economic prosperity (Wang, 2007). Moreover, the themes emerging from literature are the associated economic impacts, issues pertaining to sustainability, negative environmental impacts, and the regulatory environment. These themes will be considered and unpacked in the body of this literature review.

The emphasis will be on the impact of the bus operator’s activities on the natural environment, the local economy, society, the key stakeholders in the sector and lastly sustainability considerations. These will be considered in the literature review with the intention of successfully identifying means to effectively manage bus operators activities in such a way as to maximize benefits for bus entrepreneurs, mitigate the negative impact on the economy, environment, society and in so doing improve sustainability.

2.1 THE IMPACT OF PUBLIC PASSENGER TRANSPORT ON THE ECONOMY

The benefits of public passenger transport use, although often fragmented in literature, have a common area of convergence around lower carbon emissions and reduced travel times. Simulations however in literature continue to forecast increasing private car use. This is due to public passenger transport not meeting travellers needs for accessibility; bus trips are perceived to be longer and inflexible as compared to private car use (Hammadou et al., 2014). Today transport planning considerations are largely influenced by lagging implications of the 19th and 20th century approaches which in essence focused on building and developing the transport economy in isolation and without a holistic approach which takes into account as it will be discussed, for example sustainability and land use planning considerations (Halden, 2014). There is an increasing holistic emphasis however in the 21st century focused on improving
accessibility, cost of transportation, reducing environmental impact and initiatives focused on reducing total travel time (Halden, 2014).

Accessibility is a holistic concept that comprehensively considers route planning, innovative payment solutions, ticketing solutions, land use, sharing of private vehicles to allow transport to be more available to more people (Halden, 2014). There is a further consensus in literature that economic development and increased accessibility through transport hinges on rejuvenating of existing ailing transport infrastructure such as bus and rail which has the capacity to economically and safely effect large movement of people goods and services (Parida, 2014).

It is evident that there are various often conflicting interests, priorities and definitions in the literature on the topical issue of sustainability from a public passenger transport perspective (IEA, 2012). In the context of this review, the definition of sustainability will be adopted as, meeting the economic needs of the current and next generations without compromising the ecological, social and economic environments (Gruwald, A, Kopfmuller, J, 2012). This is often referred to as the three legged stool of sustainability (European Commission, 2004). To achieve this sustainability it may often call upon the genuine engagement with goodwill from various actors who are not always too eager to engage and compare long term possible growth projections. This loathsome enthusiasm to engage genuinely is further exacerbated by instances where certain parties to these engagements are faced with immediate urgent pressures of restoring confidence in the market for recovery of the economy (Meunier et al., 2014).

In recent decades, the transport sector ranks amongst the fastest growing economic sectors. This growth has augmented globalization and the expansion of cities in various parts of the world (IEA, 2012). The transport sector further enables and is a catalyst for economic development which is achieved through providing accessibility to regions, connecting people and movement of essential goods (Rolim et al., 2014). It is evident, therefore, that there is not a single sector of the economy which is not in one way or another affected by transportation. This economic development in essence is a consequence of satisfying human needs, activities and the transport sector ought to demonstrate suitability (Tischler et al., 2014). The motive for demand and needs for public passenger transport by bus vary from travelling for leisure purposes such as going on holiday with friends and family to business related travel, travelling to access education, health care and social services. Whatever their motive is people nonetheless have to travel from one point to another on a daily basis. Effective and efficient
public passenger transport is in effect therefore the backbone which supports and enables developing economies like NMB (Halden, 2014).

The transport sector as evidenced earlier is a section of the economy, which is linked to other sectors, and facets of the economic environment (Rolim et al., 2014). In addition, the world is constantly evolving and developing. Therefore, further to the intertwined nature of transport to the broader economy, this pre-postulates that when considering the impact of the transport sector with a specific focus on public passenger bus transport to the economy this consideration ought to be done from a systematic approach (Meunier et al., 2014). This is further supported and evident through the developing trend in literature introducing into transport planning factors or variables such as effective operations management considerations (Andersen, 2009). In Europe for example in the year 2011 the total energy consumption of the transport sector amounted to 33% of the total energy consumed with a slightly lower percentage at 20% in Portugal (Eurostat, 2012). In both these instances road transport accounted for just over 80% of that total consumption of energy.

It is suggested in transport planning literature that planning should consider associated costs of health care infrastructure to meet the increased demand for facilities to treat people with various sicknesses resulting from exposure to CO$_2$ emissions and the associated indirect costs to the economy associated with absenteeism from work as a result of pollutant uptake (Wang et al., 2014). It therefore becomes clearer that transport planning must be considered from a systematic approach as noted previously above. This approach should contrast and take into account all these considerations that talk to the direct and indirect impacts of the transport sector on the overall economy of South Africa. As noted earlier transport accounts for over a third of all total energy consumption in Europe. The consumption of this energy must be accounted for and alternatives considered, such as if this energy and resources could have been more efficiently spent or invested in different areas of the economy.

The rate of change and development in the 21st century particularly from a competitive stance for developing countries’ economies will continue to demand innovative, cross sector long-term view systems approach to public passenger bus transport. A systems approach in this instance is understood to imply and recognize that for example the impact of change in one area such as improved accessibility through public passenger bus transport will impact with other areas of public passenger bus transport and as well as the broader economy (ECOTEC, 1993). In addition, bus operators must engage business and authorities more vigorously with
modern solutions. This may be done with the objective of providing more efficient and effective access for the public to places of work, local services and also facilities in so doing encouraging an enabling economic environment for business to thrive (Halden, 2014).

2.2. THE IMPACT OF PUBLIC PASSENGER TRANSPORT ON THE ENVIRONMENT

The impact of an organisations’ operations on the environment in the 21st century will continue to be a strategic issue for many organisations particularly so for those operating in the transport sector of the economies (Fátima et al., 2014). Managers in organisations that are faced with environmental concerns must consider the needs of various stakeholders and fathom the reality that environmental considerations are a strategic imperative. These considerations have a direct impact on promoting sustainable economic success into the future (Fátima et al., 2014). In addition, there is an emerging pattern from authors who argue that environmental management may even assist organisations to improve their overall competitiveness in the market (López-Gamero et al., 2009).

When considering environmental issues there is a clear indication in literature that sustainability considerations ought to be part of all engagements pertaining to the environment. The concept of sustainable transport development therefore subscribes to the United Nations World Commission on Environment and Development. Sustainability is defined as meeting the transportation needs of the present without compromising the ability of future generations to meet their transport needs. This definition is often referred to as the 3 legged stool of sustainability. This concept of sustainable public passenger transport planning will take into account not only the environment but go on further to incorporate also economic and social sustainability concerns (United Nations World Commission on Environment, 1987). There are what may initially not be so obvious reasons which have emerged from literature which support this three legged stool to sustainability. The impact for example resulting from the cost of transport activity are in the main external in nature. These are external costs in that these are all those costs that business or consumers do not need to directly take into account however impose on the other. These will for example be costs of degradation to the natural environment and social costs resulting from congestion, costs of traffic accidents, vehicle emissions and noise pollution. The impact of the costs that are associated with transport operations are
observed further in greenhouse gases, health costs, agricultural degradation, damage to forests and climate change. In the more developed countries such as New Zealand these external costs, as alluded to previously when expressed in monetary terms were assessed at more than NZ$700 in 2008 alone (NZIER Authoritative Analysis, 2008).

Thanks to a number of factors but not limited to and including rapid development and economic growth in the past few decades there has been an increased demand for a more coordinated approach towards land use and transport planning (Calcanhotto et al., 2014). In an effort to promote environmental sustainability in public passenger transport, stakeholders engaged in transport planning must assume an integrated strategy (Santos et al., 2010). Transport considerations in development can no longer be an afterthought but form an integral part of development and land use planning. This integrated strategic approach must go beyond simply satisfying regulatory requirements if it is to strengthen relevancy (Fátima et al., 2014).

2.3. THE IMPACT OF USING PRIVATE VEHICLES

Private vehicle users are among the main contributors of congestion in road transport (Calcanhotto et al., 2014). Therefore, educating private vehicle users on the need to reduce vehicle use has recently emerged in literature as one of the softer measures formally known as voluntary travel behaviour change programs to reduce the negative environmental impacts associated with private vehicle use (Sottile et al., 2015). To put it into perspective transport accounts for more than 25% of the total CO$_2$ emitted globally and notably road transport was responsible for more than 93% of all total transport emissions with private vehicles accounting for more than 50% according to EIA, (2010; Matsumoto et al., 2014). Therefore private vehicle users will form part of any strategy towards mitigating the negative impacts of road transport such as related economic, environmental as well as social challenges which among other factors road congestion exacerbates due to increase private vehicles (Calcanhotto et al., 2014). There is however, a notable psychological cognitive dissonance illustrated in literature with the inconsistency between the attitude and behaviour. Although the private vehicle user’s attitude may be pro, the environment but their behaviour remains largely unchanged. They continue to use their private vehicles. This is as a result of a number of factors such as modern family life styles which cannot be catered to by public passenger transport, poor integration of public passenger network and more than one vehicle per household (Tertoolen et al., 1998).
Therefore, there is further incentive from an environmental perspective on the different stakeholders such as public policy makers, transport planners and private public passengers transport operators to work closer in an effort to deliver a reliable, safe, relevant and innovative public passenger transport. In an effort to entice private vehicle users to use public bus transport (Sottile et al., 2015).

2.4. TRANSPORT STAKEHOLDERS CONSIDERATIONS

In the context of this review, stakeholders are accepted to be all those parties or representatives that have an interest or will be in one way or another affected by the impact of transport as will be illustrated in the body of this review. These stakeholders or parties with interest in the transport sector are private operators, government, users or passengers, community or local residents (Kiba et al., 2014).

Transport as noted in research is a common denominator to almost every facet of our lives moreover, on the upside, transport has a positive significant impact on the quality of life experienced through providing accessibility to people, places and goods (Rolim et al., 2014). It therefore is acceptable to conclude that public transport can be viewed as an integral part of the majority of personal movement. There is also a notable trend in literature of a consistent and robust increase over the past century of personal movement as noted through the number of trips taken, average length per trip as well as the total number of kilometres (km) travelled per person. Initially travel was typically done on foot or on the back of donkey or horse. This movement to satisfy a relatively small set of different needs such as trips to the shops, church, work, school, pubs and the distances were kept relatively short to make these trips possible often by foot. It followed naturally then that with the increase in real income and infrastructure in developing countries came the travel explosion between the years 1948 to 1973. In Europe for example it can be noted that from the year 1950 that in under 20 years private vehicle ownership was multiplied by ten (Michael, 2015). In addition improvements in technology, communication, falling trade barriers and the increasing prosperity of societies have further contributed to an enormous increase in the motorization index (Kiba et al., 2014).

Although to different extents it is generally accepted in literature that public passenger transport especially the bus is where the solutions are to be found. On the other hand, the increase in use of private vehicles encourages negative socio-economic impacts. These are material negative
social impacts from accidents, congested roads, poor health and stress which are exacerbated by the increased use of private vehicles. In addition, there is notable associated negative economic impacts resulting from increasing prices and opportunity costs when considering funds invested into transport infrastructure for private vehicle use, which could have been invested elsewhere. Lastly, the subsequent degradation of the natural environment through increased noise pollution, air pollution and general ugliness (Michael, 2015). It is then arguable that the question that should linger in the minds of the relevant stakeholders is to what extent and how much further should this growth in travel and private vehicle usage as well as the subsequent impact be allowed to continue.

The following section will discuss the role of the identified stakeholders towards mitigating the negative impacts to the socio-economic and natural environment.

2.4.1. Government & Regulatory Environment

There is a consistent stance in literature that the government shoulders a strategic role towards a sustainable public transport system. The strategic role of government and policy makers particularly in the less developed countries has been extensively articulated in literature, therefore it will not be repeated in elaborative detail in this literature review (Suzuki et al., 2013). However, to contextualize and put the role of government and other major stakeholders into perspective it is perhaps worth noting the strategic role assumed by these stakeholders in the public passenger transport sector. There are further significant contributions in literature from various bodies such as the European Union (EU) which has put forth recommendations for policy makers in government relating to pertinent issues in road transport, land development and spatial planning (Pérez-martínez et al., 2013). These are recommendations on strategic issues, for example, which many of the less developed and more developed nations to an extent are still grappling with. These are for example issues such as climate change, accessibility, safety and reliability which are directly affected by local policy makers regulations which govern land use and road transport planning (Pérez-martínez et al., 2013). This section of the review of literature will among other areas touch on the National Development Plan (NDP) of South Africa. The Integrated Development Plan (IDP) of South Africa and flowing complementary to this IDP is the Integrated Transport Plan (ITP). What this means is that the land use development plans must now conform to the published IDP and similarly the approved
plans will now reflect the objectives as set out in the ITP. To illustrate, research in this area suggests that new settlement plans ought to show high density and mixed land use which is adjacent to, or a short distance from major public transport corridor nodes, facilities or interchanges.

2.4.2. The National Development Plan

It is perhaps worth noting that in the more developed economies between the year 1990 and 2010 the growth in km’s travelled has increased by more than 35%. With a further projected 30% growth between 2010 and 2044. This growth implies a myriad of social, environmental and economic opportunities as well as challenges such as sustainability concerns (Alessandrinis et al., 2015). As is evidenced in literature South Africa is progressing towards a green economy which must show growth and create jobs through a low-carbon development path. On the other hand, South Africa is a water scarce country with economy that is heavily dependent on fossil fuels such as coal and petrol and deepening inequalities, which could potentially constrain future growth prospects (CSIR, 2014). Therefore, it does not come as a surprise that more and more the government through land use and transport planning policies is seen to be sensitive to the strategic implications of public transport for South Africa’s competitiveness in the global economy. In addition, towards topical issues such as climate change, net benefit to local communities, economic development and improvement to the general quality of life (Fátima et al., 2014).

In the year 2010 the presidency appointed an advisory body which set out to determine successes since the advent of democracy in South Africa in 1994 and to determine shortcomings. The commission then released a diagnostic report in the year 2011 from which the draft national development plan (NDP) was anchored. The NDP is a broad strategic framework which provides guidance and to which all policy actions should flow pursuant (National Planning commission, 2011). The NDP seeks to among other strategic objectives facilitate the creation of a targeted 5 million jobs between 2010 and 2015 through microeconomic policy reforms in telecommunications, public services and transport. It is therefore imperative to consider the NDP when considering literature on policies, development and the current as well as future regulatory environment for the public passenger transport sector. The NDP’s approach to change is influenced by the notion of capabilities and public
transportation is a key consideration on the same level as education and healthcare. In an effort to accelerate development, the NDP has put in place immediate interventions. The NDP further, proposes significant investments into public transport in an effort to improve mobility thus accessibility particularly for low-income households.

2.4.3. Private Operators

There has been a substantial increase over the past century in the total number of trips taken as well as average length per trip illustrated in literature. There are factors such as those noted earlier for example sprawling human settlements in the outskirts of cities and increasing household income that contribute to this increased demand for travel (Michael, 2015). In addition, this growth in travel demand is projected to continue on this upward trajectory. This as demand for business travel in particular will continue to grow as the tertiary sector of the economy which is responsible for a majority share of business travel than any other sector is projected to continue expanding (Litman 2008; Cipriani & Gori 2012; Hensher et al., 2003). In addition, there is further evidence in literature, which is of the view that if this challenge of increasing demand for travel is to be resolved it will be achieved through unexciting good old fashioned traditional public passenger transport. This in the form of the bus and in the train and very much in the same form that they have existed in over the past half a century (Michael, 2015).

Where the real difference and exciting space for change is present is in the manner in which operators come up with innovative ways of operating. These innovations will obviously be augmented by better technology such automated vehicles, more effective communication platforms, general improvements in designs and efficiency of the vehicles that are available (Musso et al., 2015). The writers’ sentiments in literature tend towards the notion that there is little prospect of a radical technological solution that would be a suitable alternative to mass public passenger transport in particular the bus. This in an effort towards mitigating the negative impacts of travel demand which is further projected to continue to grow. This, as income levels will further continue to increase and so will demand for private vehicle ownership (Michael, 2015; Nocera, 2014).

Research reveals that government subsidies, incentives, reduced fares, accessibility, safety and so forth alone are not going to entice private vehicle users to switch to public passenger
transport. The recommendation from the available literature is that in an effort to increase the competitiveness of public passenger transport specifically the bus, bus operators both in the public and private sector must increase the quality of the service that is rendered (Ugo et al., 2010). The challenge that bus operators are facing and will face going into the future is that travellers’ needs are in essence anchored on perceptions, attitudes and expectations (Litman, 2008). With reference to the instance of mass public passenger transport the concept of quality is widely accepted to indicate how well does a service meet or and exceed the needs of the user (Nandan et al., 2010). These perceptions as research shows are generally located around reliability, accessibility, safety and security, journey time, general aesthetics, comfort inside as well as outside of the bus for example at the bus stops (Currie, 2008).

As noted in research by some of the contributors to quality management literature, quality management cannot be an afterthought. To be effective quality management much rather has to be a proactive organisation wide phenomenon, which must be pursued actively by each individual in the organisation. Further, quality must be driven from the top down by leadership in an organisation (Deming, 1982). There is an observable movement towards operations that are geared with the consumer needs and understanding of perceptions in public passenger transport operations planning. This movement of designing operations which is focused on delivering transport service that is fit for use is critical to achieving the often conflicting primary objectives of the different stakeholders such as society, government, environment and business objectives of operators in the transport sector (Nkurunzia et al., 2012).

The role that bus operators must assume towards mitigating urban transport challenges is indispensable and cannot be delegated. As noted previously this role of operators is further cemented by the fact that there seems to be no real alternative or solution other than the bus to reduce the impact of urban transport concerns such as reduced quality of life, congestion on road, increased accidents and environmental degradation. This, was noted in literature is as a result of an increased demand for travel. Bus operators must take a leadership role towards reducing the wide ranging negative social, economic and environmental impacts such as those emanating from traffic congestion, increased road accidents and CO2 emissions driven by the increased demand for travel (Honore et al., 2014).
2.4.4. Driver Behaviour

In the last 30 years through accelerated development and globalization of the world’s economy there has been a steady increase in real income of households, sprawling human settlements in fringe areas and wider dispersed locations of workplaces. Public transport on the other hand has not developed rapidly enough to keep up with the changing pace of the transport needs of the travellers. As a result it is well documented that these factors, as noted, have encouraged travel patterns that are better served through private vehicle ownership (Honore et al., 2014). In attempt to address this need satisfaction deficit, many transport planners are looking at numerous variables with an inclination towards among others the impact of driver behaviour. There is recently a fair amount of contributions in literature that recognizes the critical role of driver behaviour. This is because drivers are a common denominator to any strategy implemented towards better serving the needs of the consumer and in so doing mitigating the impact of private vehicle users through enticing them to use public passenger transport (Rolim et al., 2014). Travellers who make use of public passenger transport generally will be concerned about reliability, which is gauged by how often the published schedule is observed. The travellers will be concerned about the general aesthetics, which are reflected through the well-groomed and uniformed drivers as well as the appeal and cleanliness of the vehicles. Then other tangibles such as ramps to accommodate disabled people, communication, convenience, safety, security at the bus stops and while in transit are all the factors that increase the attractiveness of public bus transport and which the driver is directly involved (Yaya et al., F 2014).

There is further evidence in literature suggesting that poor driver behaviour by drivers, which is generally accepted to be undesirable driving events such as hard brakes, hard acceleration, hard turning and speeding both for heavy bus passenger vehicles and light public passenger vehicle. This driving behaviour will naturally lead to higher levels of discomfort for the users, increased incidents of traffic accidents, increased emissions, reduced quality of life and burden the local economies (Rusco et al., 2001). To mitigate some of these undesirable driver behaviours and reduce the subsequent impact there is a movement in literature towards a focus on driver education, training and real time feedback regarding driver performance (Rolim et al., 2014). It therefore as, is evidenced in research becomes critical to factor in driver behaviour when considering strategies to enhance user experience and reduce the negative impacts of transport operations in bus transport.
SUMMARY

Having observed the conversation on the developments in transport from the early years leading up to the transport explosion in the early 1950’s, with rapid growth and development in the sector, which in the early 1990’s ushered in social and environmental sustainability considerations. The author intends on entering the conversation from the perspective of the perceived success of effective management of public transport operations with a focus on bus operations in the NMB. Further, what will form the basis of the author’s contribution to the conversation of effective management of public passenger transport is to show the ‘perceived success’ of effective management of public passenger operations specifically bus operations in the NMB. The following chapter, chapter 3 will thus subsequently elaborate in detail on the methodology. This elaboration was done to demonstrate not only the integrity of the study but the logic of the scientific process as well as related philosophical assumptions adopted which will inform the research process.
CHAPTER 3

RESEARCH METHODOLOGY

3. INTRODUCTION

In the previous chapter, chapter 2 the study discussed a combination of literature from various social science studies. This was done to achieve a better understanding of the impact of public passenger bus transport operations in the NMB. Chapter 3 will discuss in detail the methodology that will be employed. This towards developing an in-depth description and analysis of the case and related phenomena. The objective of discussing the methodology is multi-pronged in that there needs to be a clarification of the different tools, assumptions, and terminology and to validate the selected research paradigm that will be employed during the entire research process. Having now defined the research tools, terminology and underlying assumptions of the study, chapter 3 will further seek to present the logical interrelationship between the core concepts of the applied social science studies such as ontology, epistemology and methods (Grix, 2002).

Research design and methodology according to Yin (2014) is defined as the logical scientific process that best illustrates how the empirical data collected will be linked to the studies research objectives and also to the Summarys that will be tendered. From the definition of research methodology by Yin (2014) it follows then that research methodology at the core is a blue print that will be employed during the entire research process which will assist the researcher navigate his way during the research process. Chapter 2 discussed and illustrated the impact of bus operators’ activities in the NMB. Chapter 3 will then validate the paradigm employed to critically analyse the impact of bus operators’ activities as identified in Chapter 2. This will be a descriptive social science case study which is predominantly of the alternative approach and is of the constructivism ontological perspective (Yin, 2014).
3.2. QUALITATIVE RESEARCH PARADIGM

The selection of a relevant research methodology in the study will be critical towards gaining a better understanding of the impact of bus operators activities in the NMB (Yin, 2014). It is therefore against this observation that the discussion below of the characteristics of the philosophical assumptions becomes important.

This will be a social science study, which will be predominantly of the alternative approach and of the constructivism ontological perspective. This is a philosophical assumption of the view that phenomena and related meaning cannot be seen to be independent of social actors (Grix, 2002). The epistemological philosophical assumptions in this study will advocate an interpretivist epistemological position. This is a position that calls upon the social scientist to take into account and understand the subjective meaning of social actions (Bryman, 2001, pp. 12–13). In as much as there’s still a debate over the superiority quantitative and qualitative research methodologies, what is not debatable is that often the two methodologies may be used in combination appropriately to complement efforts to address the research question (Yin, 2014). It then follows that although quantitative data may be collected during the research process the dominant methodology of this study will be that of a qualitative nature in strategy. The case study method will be employed in this study. The data in this instance will be collected from various sources such as interviews, surveys and documents. This is done with the intention of developing an in-depth description and analysis of the case and related phenomena.

Chapter two discussed literature from various social science studies and engaged in current conversations on literature pertaining to the impact of public passenger transport. The constructive ontological approach is of the view that social reality is subjective and as such cannot be seen independent of social actors. Therefore, as it will be illustrated in this chapter this will be a descriptive research case study, which is of the interpretivism paradigm thus employing a qualitative research method.

3.3. CASE STUDY RESEARCH APPROACH

According to Yin (2014) an interpretive descriptive case study research method to conducting research subscribes broadly to the qualitative research paradigm. This study will thus be
predominantly based on the qualitative research paradigm and as such, the selected research method accordingly is the case study research approach. There are four types of case studies as identified in literature. These will be discussed at a high level in the following section aligned to the objective of each type of case study approach. The first type of case study research is a descriptive case study and the objective here will be to describe current practices and will be restricted as such to only describing phenomena as they are observed by the researcher. The second type of case study method is illustrative case studies. The objective of the researcher in this instance is primarily to illustrate often innovative or new practices, which a particular organisation in an industry may have adopted. The third type is an experimental case. Accordingly, the researchers’ objective in this instance is to really examine challenges, for instance, in the implementing of ground braking systems, techniques or procedures in an organisation and evaluating resultant benefits from these. The last type is exploratory case studies where the objective of the researcher is to use existing theory to perhaps understand and further explain what is currently taking place as it is being studied (Collis, J. Hussey, 2009).

Yin (2014) further suggests that a case study approach will be relevant in varying degrees and may be used in different situations including but not limited to the bulleted illustrations below:

- Social science studies such as management studies, business administration, social work and academic disciplines.
- Sociology as well as community psychology research.
- Public administration, policy and political science research.

This study will be predominantly in the social science instance and tend more towards management as well as business administration. The upside of conducting a case study research as noted by (Yin, 2014) is that a case study enables the researcher to investigate phenomena within a real life setting or context; below are bulleted some of the material characteristics of a case study enquiry.

- A case study allows the researcher not only to explore but also to understand phenomena within a specific context.
- A case study allows the researcher to ask pertinent explanatory ‘Why’ and ‘How’ questions which enable the researcher to probe further.
- A case study illumes decisions that were reached and enables the researcher to study how, why and the results of these decisions.
Accordingly therefore a qualitative research paradigm employing a case study method to social science will enable a better comprehension and problem solving of often complex issues in real world cases such as those within organisations and business administration (Bryman, 2001).

3.4. CASE STUDY RESEARCH DESIGN

As noted earlier drawing from Yin (2014) research design seeks to provide a logical scientific framework which informs the research process and best illustrates how the data will be collected, linked to the research objectives and then to the summaries that will be drawn from the findings. The research methodology therefore will guide the researcher towards meeting the objectives of the research study. The purpose of this study is to contribute to the management of public passenger transport operations by improving the management of public passenger bus transport operational activities. As noted earlier this will be a descriptive case study and the design methodology which will be followed, adopted five components listed below as proposed by (Yin, 2014).

- Case study questions.
- Case study propositions’.
- Data collection design and methodology.
- Data validity and reliability.
- Criteria for interpreting the findings

3.4.1. Case Study Questions

The benefits of conducting case study research is that the researcher is able to investigate phenomena within a real life context. The researcher as such is able to then better comprehend phenomena within a specific context as the case study approach allows the researcher to ask critical explanatory questions such as ‘why and ‘how’ (Yin, 2014). The study will contribute to literature through providing insight into more sustainable management practices of public passenger transport operators in the NMB. To achieve this, the case study will examine sustainability considerations and the impact of the operator’s activities on the natural environment as well as the socio-economic environment. To address the research proposition
of the case study the investigative research questions below will be addressed through interviews and will be supported by the following researched secondary sources of information:

The transport sector provides the infrastructure required to move people, goods and services, in so doing facilitates commerce, cultural exchange as well as social activities (Taylor, 2010). South Africa is progressing towards a green economy, which must show growth and create jobs through a low-carbon development path and in addition, South Africa is water scarce country with an economy that is heavily dependent on fossil fuels such as coal. South Africa is further characterised by deepening inequalities, which could potentially constrain future growth prospects (CSIR, 2014). Transport planning policies must be sensitive to the strategic implications of public transport for the South Africa’s competitiveness in the global economy and in addition towards topical issues such as climate change, net benefit to local communities, economic development and improvement to the general quality of life (Fátima et al., 2014). Public passenger bus transport operations planning considerations should begin to adopt a more strategic approach. An approach that could introduce sustainability considerations to operations management. This in an effort to improve accessibility, cost of transportation, reduction of total travel time and environmental impacts (Halden, 2014; Andersen, 2009). Therefore, the formation of research question 1: What is the demand for sustainability considerations to form part of public passenger bus operations planning in South Africa and in a global context?

Although gradually operators are moving towards integrating both strategic and financial targets, many operators and policy makers are still reporting on short-term financial targets. Operators and government still use profit and spend as operations performance indicators which are arguably considered insufficient performance measures (Bruns, 1998; United Nations World Commission on Environment, 1987). Therefore, the formation of research question 2: How are public passenger transport bus venture operations currently being conducted?

The transport sector is a sector of the economy that is intractably linked to almost all other sectors and facets of the economic environment (Rolim et al., 2014). Although there is often apathy from the various actors linked to the transport sector to engage genuinely and to compare long term possible growth projections as the parties are often faced with urgent immediate pressures to perhaps restore confidence in the market, public passenger bus operations still have far reaching economic implications (Meunier et al., 2014). Therefore, the
formation of research question 3: What is the impact of public passenger bus transport venture operations on the economy?

Environmental impact of public passenger transport operations on the environment are external in nature because the operators do not directly and immediately account for these costs, however, these costs are generated none the less. These are costs such as general ugliness, vehicle emissions, noise pollution, greenhouse gases, water pollution, agricultural degradation, damage to forests and climate change (Calcanhotto et al., 2014; Fátima et al., 2014; López-Gamero et al., 2009; NZIER Authoritative Analysis, 2008). Therefore, the formation of research question 4: What is the impact of public passenger bus transport venture operations on the natural environment?

The impact of public passenger transport by bus varies and arises from travelling for leisure purposes such as going on holiday with friends and family to business related travel. The impact in a social environment context will be significant to the extent that transport affects access to education, health care, social services and connecting people with places of work (Halden, 2014) Therefore, research question 5: What is the impact of public passenger bus transport on the socio-economic environment?

The impact of training programs will be relevant to the extent that these programs are tailored to the organisations strategic intent (Porter, 2008). In public passenger bus transport often the focus will be on operations managers’ capacity building training programs as well as driver behaviour in an effort to enhance user experience and reduce the negative impacts of transport operations in bus transport (Rolim et al., 2014). Therefore research question 6 should be: What personnel development programs are available to capacitate public passenger transport bus venture operators?

The Companies and Intellectual Property Commission (CIPC) guides the registration and governance of companies in South Africa, companies then operate within the ambits of the Companies Act 32 of 2008. Companies in the bus passenger transport sector will further have to meet specific market demanded and statutory requirements as set out in the traffic management act of South Africa that will speak to the required accreditations, permits and insurances, which an operator should possess prior to operating. Therefore research question 7 should be: What are the regulatory implications for public passenger bus ventures in South Africa?
Infrastructural and financial planning for public passenger bus operations are currently tailored towards profit driven performance management considerations. Therefore sustainability considerations will have to be introduced into financial and infrastructural planning for bus operations management planning (Andersen, 2009; Grunwald et al., 2012; Halden, 2014; IEA, 2012). Therefore, research question 8 should be; what infrastructure and financial capacity planning is required to establish a sustainable public passenger bus venture?

Bus transport operators would have to be capacitated and the organisations strategy reworked to adopt sustainability performance targets (López-Gamero et al., 2009). Bus operators must be equipped and capacitated to include sustainability performance measurements alongside the bus operators existing performance measurements such as profit and growth (IEA, 2012; López-Gamero et al., 2009; Rolim et al., 2014). Therefore research question 9 should be: Do the current public passenger transport bus ventures have the capacity to adopt sustainability considerations into their business?

The credibility of the research findings relevant to the propositions can be augmented by trustworthy research design, data collection and analysis. The researcher will use the measurement tools that will be employed to satisfy concerns pertaining to validating the propositions relevant to the research findings (Collis, J. Hussey, 2009; Yin, 2011). Therefore, research question 10 should be: How the propositions will be validated by the research findings?

Therefore research question 11 should be: What Summarys for bus operating ventures can be drawn from the research findings?

3.4.2. Case Study Propositions

The research study propositions direct the attention to the specific area of the study that requires investigation within the scope of the study (Yin, 2014). The primary objective of this case study was to determine how to establish sustainable bus ventures in the NMB through an integrative review of literature as well as interviews.

The secondary propositions of this case study research were to investigate the perceived success of establishing a sustainable public passenger transport bus operation by examining the requirements of sustainable bus operations, their objectives and stakeholder implications. The
said secondary propositions were achieved through investigation of the following independent variables of the case study research, namely: economic environmental considerations, natural environment considerations, social environment considerations, regulatory environment compliance considerations, training and education as well as stakeholder relations. Yin (2014) advocates that propositions are critical issues in case study research and serve as a guide for the researcher to link the data collected to the research propositions.

3.4.3. Unit of Analysis

Yin (2014) makes the suggestion that in research design methodology the unit of analysis is a key consideration and this is related to the manner in which the research question is initially defined. In addition, the unit of analysis ought to appropriately, reflect the main topic of the research study. Sustainability in public passenger bus transport is concerned with ensuring that transportation needs of the present generation are met without compromising the ability of future generations to meet their transport needs (Andersen, 2009; Grunwald et al., 2012). Yin (2014) also notes that a case study can follow either a holistic or an embedded design. This research study adopted a holistic case study design approach as it attempted to acquire an understanding through theory construction of the phenomena within a real life context and thus gain an in-depth understanding, description and interpretation of the phenomena (Collis, J. Hussey 2009). Thus, at a high level the unit of analysis is a public passenger bus operating venture in the NMB. Pertinent data was collected from key stakeholders in the transport sector via in-depth, semi-structured interviews and archival documents in an effort toward strengthening the relationship between the data collection units and the studies main research topic (Yin, 2014).

There were ten interviews conducted. In defining the case therefore, the unit of data analysis for the study was each of the ten interviewees. There were therefore ten units within a single case context namely public passenger bus operating ventures in the NMB. The technique employed in this study to analyse the data that was collected is the logic of pattern matching where the data collected is linked to the research proposition (Collis, J. Hussey 2009; Yin, 2014).
3.4.4. Data Validity and Reliability

In case study research there are certain tests that have to be performed in an effort to satisfy credibility requirements of the research findings. There are two aspects regarding the credibility of the research findings which must be addressed and these speak to the validity and reliability of the research studies findings (Collis, J. Hussey, 2009).

3.4.4.1. Validity

Validity within the context of a qualitative case study is concerned with how well the measuring tool that is employed measures what is required to be measured. The question here really is concerned with to what extent is the data that is collected and interpreted really representative of the real world, and thus the data is credible, trustworthy and reliable (Collis, J. Hussey 2009; Yin, 2014). Validity of studies research findings Yin (2014) argues can be strengthened by adequate research design, data collection and analysis of the data.

In case study research the different types of validity that will be considered here below are construct validity, internal validity and lastly external validity (Cooper, D.R and Schindler, P.S. 2011; Riege, A.M, 2003).

- **Construct Validity**
  Riege (2003) suggests that through the use of different sources of information the researcher will establish a chain of supporting evidence to objectively confirm what is being measured by establishing appropriate measures for the phenomenon under study.

- **Internal Validity**
  Yin (2014) suggests that in a descriptive case study effort the internal validity is in fact concerned with the credibility of the research findings. This is established through highlighting material themes in the research findings and the required instruments to produce these.

- **External Validity**
  Cooper and Schindler (2011); Riege (2003) make the suggestion that the external validity addresses concerns pertaining to the transferability of the research findings through to different settings, periods, organisations and persons.
Validity concerns in this case study research effort were addressed through collecting of rich data from the in-depth semi-structured interviews, which were also recorded to further strengthen the validity. The researcher went into great effort to ensure that the respondents understood what was being ask through follow up questions to establish whether they were responding to the asked question.

3.4.4.2. Reliability

Reliability concerns seek to establish whether when applying similar research techniques and processes by a separate researcher the same research findings will be achieved. Therefore, the concern around reliability is whether the research results can be consistently replicated (Yin, 2014; Riege, A.M, 2003).

Thus, the objective of reliability considerations when conducting research is to minimize researcher biasness and reduce errors, subsequently in this research study this was achieved through application of multiple unit of analysis as illustrated in research design (Yin, 2014).

3.5. THE LOGIC LINKING THE DATA TO THE PROPOSITIONS

In a case study research effort there is an added requirement upon the researcher to analyse within the context of the case a few events or phenomena and linking the data obtained on these phenomena to the research proposition (Cooper and Schindler, 2011). In addition Yin (2014) also makes reference to the notion that in case study research the researcher is required to gather and combine data which reflect the original case study research propositions. Therefore, the case study design, the case study questions and literature review will be structured around the initial research propositions, which will form the basis of the research and guide the case study analysis.

There are some techniques available to the researcher to assist with analysing and testing of the research propositions. Yin (2014) suggests that in case study research pattern matching in essence juxtaposes empirically based patterns with a predicted pattern. This done to establish if there are any similarities between the evidence collected and the predicted pattern. In the
event that there are similarities, these similarities will augment the internal validity of a case study effort.

The information that was gathered during the research via in-depth interviews and secondary data collected from archival sources such as financial records, journal articles and books was used to establish the empirically based pattern in this research study. The predicted pattern was formed from the propositions and put in place before collecting of the data for the case study.

3.5.1. The criteria for interpreting the case study findings

Yin (2014) makes the argument that statistical estimates are augmentative criteria towards interpreting research findings. Case studies are the exception in this instance as case study research results analysis does not rely on statistics. Researchers conducting case study research thus have to adopt alternative strategies that involve identifying and addressing rival explanations of the research findings. This was the strategy that the study adopted towards interpreting the case study finding in specific instances where a significant relationship was not established between the dependent and independent variable.

SUMMARY

Chapter 3 provided insight into the research methodology that was adopted in this study. This was a descriptive case study research and the study focused on a single case adopting ten components as illustrated in the case study research design. This chapter went on to further discuss these in detail. They were the research study questions, propositions, unit of analysis, data collection design and methodology. The method used to strengthen the validity and reliability of the data was discussed in this chapter. Lastly, the criteria that were employed to interpret the data were illustrated. Chapter 4 that is to follow will discuss in detail the findings of the data analysis that was conducted.
4. INTRODUCTION

Chapter 2 of this research effort was an integrative review of literature where the body of the review attempted to summarize literature currently available on the propositions which are believed will have an impact on the dependent variable.

The propositions as suggested in chapter 1 are protecting the natural environment, taking care of stakeholder interests, limiting the use of private vehicles, economic growth, personnel development, regulatory environment and lastly improved accessibility. The dependent variable was identified as the perceived success of sustainable bus operating ventures in the NMB.

The subsequent chapter 3 went on to discuss the research methodology, design as well as how the data will be collected, thereafter linked to the research propositions of the study. The method that was adopted to link the data to the propositions was pattern matching employing multiple unit of analysis to achieve the objectives of the study effort.

This chapter will attempt to illustrate how the data that was collected will be analysed and then interpreted. In so doing chapter four will therefore satisfy RQ10 as well as RO7 of this study.

4.1. DESCRIPTION OF THE UNITS OF ANALYSIS

The research design strategy of this research effort employed semi-structured interviews to collect primary data. This data collected with the intention of gaining an in-depth understanding of the phenomenon under study from the rich information which may not be necessarily obvious from the data being collected (Collis, J. Hussey 2009, Yin, 2014). The interviews with the relevant stakeholders were conducted in 2015 through a purposive sample strategy which allowed the researcher the freedom to select the participants illustrated below according to their relevance (Yin, 2014). Thematic analysis was used in the study which involves reading and re-reading of the data for themes in the data that emerge as important when describing phenomena under study (Daly et al., 1997; Rice et al., 1990; Yin, 2014). The primary data was collected from the respondents below:
4.2. PRESENTING THE QUALITATIVE FINDINGS OF THIS RESEARCH EFFORT

The primary research objective of this case study research was: **How to develop a sustainable public passenger transport bus venture in the Nelson Mandela Bay to better connect people, places goods and services?**

In an effort to address the given primary research objective of this study, primary data was collected from semi-structured interviews guided by the secondary research questions and in line with case study research methodology, the pattern matching technique was used to link the data to the propositions.

4.3. INTERVIEW RESPONSES

The listed respondents are actively involved in or connected with the public bus transport and were selected to participate in the study with the objective of addressing the research questions as illustrated in Table 1.1. Four of the selected ten respondents are working as full time
employees at various bus companies including Blunden Coach Tours; the Department of Transport in the Eastern Cape and the Nelson Mandela Municipality.

All of the ten respondents were interviewed individually and were asked assorted questions from the research questions relevant to their daily functions. The responses to the questions are provided below. Further, it is worth noting that the responses to the interview questions were recorded and then transcribed below in verbatim. The objective was to emulate the mood and enthusiasm of the respondents.

4.3.1. Research question RQ1

- What is the demand for sustainability considerations to form part of public passenger bus operations planning in South Africa and in a global context?

Unit 1:

“Our public passenger transport at large in its current state is definitely not sustainable economically and from environmental perspective as you will know with the likes of Algoa Bus, AB350 and Mayibuye who are depending more and more on government subsidies, are not run efficiently and government is just being squeezed tighter and tighter for funds from a host of angles. Therefore sustainability planning considerations must begin to take centre stage in our public passenger transport system”

Unit 2:

“I believe there is a need for it in the sense that our vehicles that we are using are emitting carbon dioxide so the best thing for us to do is to purchase vehicles that as environmentally friendly as possible. We have done that by purchasing the euro 3 spec engines which are now currently available is South Africa, which are the best vehicles currently available in the South African market. We have done this looking at the future as well as international trends, this is where everyone must go and it helps to reduce our carbon footprint also. It also assist with tax as we are using more environmentally friendly vehicles. All the euro 3 spec vehicles are very expensive compared to other older engine spec especially for businesses that are starting up
that do not have a strong balance sheets. Route planning is also a key consideration for which should form part of sustainability considerations as if you plan the shortest or quickest route possible you will be saving on fuel and tax emissions, the last thing you want to do is to select a route with a lot of traffic, which then means a lot of stops start which means you are using more fuel in first and second gears thus planning your route becomes very important from a business economics, environmental perspective and swifter more pleasant journey and service for the client”

Unit 3:

“Bus transport still plays a very small role in actually transporting people if you look at how people are transported, I would say most people are transported by taxis and private vehicles are the preferred. Now, environmentally that is not sustainable. Therefore now what you get is this BRT system and I think that is where cities like Johannesburg and Cape Town is far ahead of the rest of the country where you have a total integrated transport system where you have feeder routes into main transport hubs, that transport hub might for instance be Gautrain PRASA or on rail so you basically have a situation where you have Buses running from literally your front door to a train station and that train takes you to where you need to be, even if you look at Algoa bus service, which is fairly limited to a profit driven outlook not really concerned with the individual needs for transport and times convenient for travellers rather focus on profitability of routes, for example If I want to travel from Park Drive to Greenacres but I do not want to use my car I can walk to the bus stop let’s say which is 200m from my house but that bus only runs every hour. So immediately it does not make it convenient for me, to actually use the bus so I would rather get into my vehicle, here is another prime example if you look at the development of Coega, here they developed a whole industrial zone without any consideration to public transport infrastructure what is sustainable about that so what happens now in Coega is that each investor uses his own transport to get his staff on site, there is no coordination some use taxis, some have their own buses, some people use their own vehicles. ”

Unit 4:
“There is definitely a need for sustainability considerations, as I have observed through the clients that book with me especially from overseas they are starting to get fussy now as noted through requests for proposals and quotations specifications”

Unit 5:

“The government through legislation realises the need to improve the industry prospects through densification, increasing accessibility, reducing the total km’s travelled and the costs of travel. This is well articulated in the provincial integrated public transport master plan of the Eastern Cape”

Unit 6:

“You see this is a challenging issue especially when you look at the practicality of the whole thing. You know people and operators in our areas for example are not only under resourced but also are not informed of these issues of sustainability in their business. I believe that there is a need for these consideration however, the people and business must be informed as to why and how to go about it and where possible incentivised as these are often perceived as additional costs and time wasted if it is not addressing the tangible day to day needs for the business.”

Unit 7:

“The public passenger transport sector will catch up and move with the times and development. If you look for example before Greenacres shopping centre was built. There were no taxis or buses riding people there. Even with Walmer Park, soon after the developments there, public transport soon followed to allow the masses whom often are the biggest percentage of the shoppers to access these place. So yes, public transport does soon catch-up with development. In addition, yes, there are consultations to an extent like you had with the Baywest developments were we were approached by the developers. However, you must remember for us it is predominantly about profit unfortunately and at the end of the day you will run the most profitable routes as far as it is possible. Unless off course you are an Algoa Bus who is subsidized then, they can afford to drive the less profitable routes. But you must remember
something though even with all these developments taking place without public passenger transport for the masses they will have nothing. Workers need to get to work, kids need to get to school, there is always if not the majority of people need transport to get to shopping centres, hospitals and so forth. So transport really is a lot more than just getting people on a bus or taxi therefore there is a big need I believe to ensure that there is available for the people public transport through proper planning and consultation with the industry players”

Unit 8:

“For example when you land in Cape Town, for less than R100 bucks, you can my city which can take you and drop you off at various key points in town. When you come to PE you are forced to hire a vehicle or a meter taxi, which are also not regulated, you don’t even know what you are going to pay until you have to get off. You go to Johannesburg you have the Gautrain, you climb off the airplane and jump on the train to your meetings in Sandton and Pretoria within a 30 min time frame. So you have some options, there’s the Gautrain bus, Rea-via and you know up front what are the schedules and costs and you are able to plan your trips. Come to the Bay, you don’t have any of the above options which I have now given to you. Accessibility is an issue even before you get to PE and worsens when you get to PE. SAA for example has stopped the six am flight, now you are presented with complexity where there are limited flights coming in and these are at a cost easily higher than flying Johannesburg to Cape Town. How do you then bring in tourists or a family of four for a holiday when airlift is either too expensive or not available and once they are here they climb into cabs that are unregulated each charging its own fares and doing their own thing. It is therefore very important to begin to look at public transport from a different angle. This thing is so severe that you know if you stay in JOHANNESBURG it can be cheaper for you to go on holiday to Phuket fights and accommodation included”

Unit 9:

“As far as I am concerned we are to an extent. Bearing in mind that everyone is at the same time trying to save costs which can sometimes lead to perhaps pushing the barriers often to the limit and to the detriment of the environment. You may find that instead of sometimes saying no to a job because your vehicles have to go in for service you take the job and delay the service
as a result may sit with vehicles operating out service parameters and perhaps which are not fit to be on the road or how can I say, sailing rather close to the wind because of wanting to get in more work to increase your income at the end of the day. This if the players in the industry were closer together and worked together for the benefit of the whole industry instead of each one looking only after their narrow interest is a job that could have been passed on to another operator and the vehicles allowed to go in for service. There needs to be a lot more talking and attempt made to get the different players in the industry to work better together, this would advantage the industry at the end of the day and a plus for the owners who will have a better industry to operate in for years to come.”

Unit 10:

“Passenger transport planning and sustainability considerations should be intractably part of all developmental planning. You know from a developmental planning perspective right across the board it is clear that densification has a number of benefits including a reduction in the negative environmental and other associated costs of development. We as the municipality through integrated transport corridors and densification objectives seek to promote a seamless public passenger transport sector”

4.3.2. Research question RQ2

- How are public passenger transport bus venture operations currently being conducted?

Unit 1:

“It differs from one place to the next and relevant to the needs of the areas. For example in Johannesburg you find that they are using a combination of gas and electric driven vehicles, taxis and buses to curb negative impacts of the public transport system and promote accessibility through more affordable and reliable bus rapid transport system which promotes economic activity and creates jobs also. Furthermore, bus ventures are primarily concerned with hard financial targets. The public passenger transport sector currently has ailing to non-existent infrastructure such as bus stops and as such broadly speaking is being run in a manner
that is really unattractive with a focus on short term gains with little genuine engagement between facilitated by the government with the industry operators, users, big business across the affected sectors and construction planning and development initiatives”

Unit 2:

“You find that each operator is focusing on ensuring the success of his business. Then you have other competitors in the market whom are not paying taxes and do not have all the right papers to operate. These companies are allowed to continue to trade. The market is not benefiting from this type of industry. There must be more done to try to better manage the needs of the different stakeholders and the suppliers”

Unit 3:

“With the current transport service providers, they part of their route costs are being subsidized to improve accessibility for people that need to get to places of work, hospitals or access entertainment. What they will still though is they would measure success thought the economic sustainability but I think what they also definitely look at is passenger numbers and the amount of passengers that would use the service on a specific route at a specific time, I think in terms of that again you have a perfect example, initially for example with Coega the idea was that Algoa bus would extend their service into Coega IDZ but Algoa bus company is looking at two things, that route is not on their subsidized routes so if they run that route there would be no subsidy involved and would have to ask Coega IDZ to apply for a subsidy, secondary to that what they would also say to you is that there is just no critical mass into Coega IDZ to actually make it worth their while to run a service into Coega. The operations of both the subsidized and private operators like Blunden are geared towards reducing operating costs on routes so as to yield maximum returns on these routes. This is especially the case for private operators as they unlike and Algoa Bus Company do not received any government subsidies. That is the two main factors that these guys are using to measure the success of their operations critical mass and frequency”

Unit 4:
“Currently you are sitting with a situation where because we are running charted routes where the client specifies the pickup points and times, including dealing with 3rd parties for example the taxis on the NMMU routes, there’s so much chopping and changing as a result of issues with the taxis and also from the clients that constantly operations and admin is running the whole day just to keep up to date. This easily take up the whole day. Operations and the admin office do not have a live system which communicates you know which of the fleet is available, which are book and when, you find that all these things are written in a diary in the ops managers office and for you to see what is happening if the ops manager is not available you have to page back and forth in his diary. There’s just a need to be put into place communication systems between operations, workshop and the admin office”

Unit 5:

“Our interest Bhuti is ensuring that commuters are able to get to their places of work and schooling then at the same time grow and better for example the individual taxi operators and the sector at the end of day. To this there is a need you know for robust engagement among the different stakeholders, speak to some of these thorny issues and spheres of government as well as implementation of the transport plans of the province”

Unit 6:

“A lot of this depends on the circumstance where the business is operating from and the market that is being serviced. In my market you find that these are people that really do not have much and cannot afford to pay the same prices as what a client in your more affluent areas. For this I blame the government for not doing enough to level out the different environments or and even perhaps subsidize these people in these markets. I was also approached by certain schools who said to me please ferry our kids to school at half the normal price charged by taxi, because I was trying to help I agreed to subsidize in a manner of speaking their kids transport and charge them only half price. But then the taxis came in and said I was taking their business away from them and the government did not see it fit to intervene and bring all the stakeholders together and assist these kids with accessing education. I understand these kids’ issues as I too had to travel 30km a day by foot to school every day. Also if you look at this from the other side, the government is shutting down schools across the country where there are too few kids,
now some of these teachers get shipped out to go and teach in the Transkei if they are fortunate which then introduces a lot of financial and social difficulties for them or they are simply retrenched. But you find that this government is really scared of these taxis and as such the public passenger transport sector is really being run in a way that these people are allowed to get away with too much even at the expense of other key stakeholders, there is really window dressing order in the sector and everyone is doing their own thing. The government must get more involved here”

Unit 7:
“You see because of our business and how they are run ultimately with a profit driven outlook. Unfortunately, you find that the different stakeholders in the sector are one too far away from each other and have different agendas. So you find that there are really reduced interest further than what is good for your business. Take for instance with Algoa bus, how many Buses do they have that can take people on wheelchairs or have limited mobility etc. access the service of an Algoa bus to get to a hospital, work or school. Whilst we profess that you know we consider the users, different sector’s needs, stakeholders and so on, this is really only to the point that it is inconvenient or a requirement for tenders, clients etc. to sustain our business in the short term. Where things are left up to each and individual operators as you currently have at the moment we will continue to focus on profits unless almost forced to do otherwise as I said if it is a requirement on a tender.”

Unit 8:
“From where I am sitting as a stake holder who from time to time is part of some of these engagements I can tell you now the perception is that these guys first develop and think after and not the other way around. For example look at the stadium, most of the people that flock to the stadium do not have their own vehicles, so where are the demarcated taxis and bus parking areas, nowhere to be found except for make shift parking on pavement and lawns. Even in places where they are building new developments, there’s no transport in those areas, I know of a friend whom was mugged twice walking with kids to the main road where the bus is available in the morning. Now you find that be it the taxis or buses will either drive on the routes that bring them the most income or in the case of the scheduled Algoa they are driving
on certain routes as they receive subsidies and will not drive on other less profitable routes especially which are not subsidized. So you tell me now, what does this tell you, everyone is working in parallel and doing their own things with no concerted effort to consult and engage genuinely. I went to a city overseas, just can’t remember the name now, anyway the point is I met with the head of tourism in the city, he took me into a big hall, they had a scale model of how the city will look like in 2010, 20120, 2030 and 2040. A complete detailed scale model in 3D. Even if a new mayor coming from the ANC, UDM etc. the plan remains the same and does not change. Last example for you, try driving to Addo, one of the most important hubs in the region from a farming and tourism perspective, the road is full of potholes, the road is narrow, dark and year in and year out we raise this issue, has anything been done about it yet now. It is just unsustainable the way things are being done in the sector”

Unit 9:

“Unfortunately when it comes to stakeholder considerations too often everybody has different agendas and there is not you know not a partnership kind of approach from the different players in the market. At the end of the day everyone is pulling in different directions and the industry does not benefit from this type of approach”

Unit 10:

“Our stance as the municipality is informed by the need for densification of public transport corridors. We have gone and identified routes that are main public passenger transport corridors and promoting through integrated public transport infrastructure development planning to ensure that we reduce the average length of trips, the overall cost of travel for the users and the system and generate more income through a reduction of costs. This will have to include not only be the bus, it must be trains, bus, mini buses or taxis. You will have to agree with me that it really does not make sense because the longer you travel the more costs and bigger the negative impacts. For this to be effective we believe that our public transport system although currently not the case need to move towards more densification of public transport corridors and this will have to include all the relevant role players for example department of human settlements when it comes to development of residential areas. There are number of other critical stakeholders here you have the public as the main stakeholders here, taxis, state
owned enterprises, airlines your business, you can just imagine how people would have to get to these areas. The challenge however that we are sitting with here is there is inconstancies between the stakeholders interest. For example people are looking for safe, reliable and affordable transport. On the other side the bus companies are looking to maximise their profits. With all these different expectations it becomes challenging to get everyone to be happy at the same time. So often we have to engage with the different stakeholders at different levels. The municipality is pro each of the stakeholders based on objectives of the expected outcomes. With the touted Motherwell hotspur train, we are looking at ensuring that the taxis that we operating on these routes are compensated, the public has access to affordable and reliable transport. Business on the other have access to labour. So each stakeholder in the sector is engaged with a different mind-set. With transparency and genuine commitment in engagements we can reach an amicable position.”

4.3.3. Research question RQ3

- What is the impact of economic activity on public passenger bus transport ventures?

Unit 1:

“There is a direct impact on the industry as you find that majority our business is coming from corporates. Then the sector is further commodity driven you find that fuel is the biggest operating expense in the business. Another factor is the cost of financing and importing of equipment and parts which is directly informed by the movement of the economy. Bus operators provide a critical service therefore government must do more to create a fertile environment for the operators to trade”

Unit 2:

“The different sectors within the transport industry all play a very important role in part to stimulate and upkeep our economy. As a country at large if tomorrow we did not have bus companies the vast majority of the workers in the country would not be able to get to work and in doing so a lot of companies will be affected as there would be no labour available and I
believe it would hamper our economy. For interest sake 95% of miners get bussed in from various residences to the mine and that is one of the bigger sectors in our economy now can you imagine the mines without miners there would be no activities. Besides the fact that the transport sector creates many jobs, the tax collected from the transport sector also contributes to the economy. It is also much cheaper to use bus transport as compared to perhaps taxi and private vehicles. Equally important is the other way around, there must be vibrant economic activity for bus ventures to thrive also. I mean most of our business today comes from corporates and if these corporates are not doing well because the economy is not growing then the bus business will also be affected”

Unit 3:

“You know I think firstly if you do not have a reliable transport system what is happening to the rest of the city is that the economic activity of that city basically fails. Because you can’t get people on time to where they need to be the reality of that situation again is that people coming constantly late might lead to people losing their jobs, as a result in this case of something that is totally out of their control. For example with our clients in the citrus packing industry we have been involved in now and guys like GM there’s is all about being on time as these are guys that are running shifts, some of these business are running 24 hour shifts, some of these business are running production lines that literally cannot shutdown so if you don’t have your people there on time that production line shuts down and could take you the whole day to get that production line going again, so you have a whole days production out of the system. If you look at GM for instance they cannot be 5 min late, to drop the people off, the lady explained that say for arguments sake we transport 100 people to the GM plant in Coega, now they are 5 min late for 7 am, they work on a time and clocking system, and cannot clock in, they must now go and line up at HR, HR must manually write up the time that they arrive there, which would be another half an hour, then they spend another half an hour getting dressed so they basically start their shift an hour later because you were 5 min late, so that’s the impact of a reliable transport system. If you at the university, classes tests, all those kinds of this, if you look at the times we run there, right up to 10pm to accommodate learners sitting at the library, the bus does not pitch up, now you have students stranded on one campus, who need to get to another campus, how do they actually get there, what is the security dynamics in terms of having a person stranded at 10 o’clock at night, so there’s all these dynamics, if you
look at for instance to give you another example of issues of reliability which dovetails on to that, if you look at the Uitenhage students, the Uitenhage bus services was instated specifically because metro rail was unreliable and the students were not getting to varsity on time, because of metro rails dysfunctionality they had to put in a subsidized bus service, so you have in example economic costs where these funds could have been better used elsewhere in the university. There is a clear win, win situation here, where the economy is growing the bus market will thrive and can begin to introduce better quality service and products on to the market and then market will enjoy a modern and reliable bus service on the other hand. Lastly, consider the Algoa bus strike for the past two weeks for example, taxis are on average twice the costs of bus, now with the strike people had to use taxis, now you have some households that cannot even afford an additional R10 per day, one increase in transport cost, where must they get this money from”

Unit 4:

“You don’t have a choice you have to have bus service otherwise you have to use taxis and they don’t care, they play with your life. For example we were driving to work and it is bumper to bumper, he thought nothing to drive on the oncoming lane because he was rushing to collect a potential passenger standing a little ahead of the road, there are people in the vehicle that need to get to work and schools safely, you never know if you will make it to work and back home. Whereas with a bus you know you will get to work on time compared with the taxis whom are reckless, rude and just concerned with filling up the taxi with no consideration for the customer’s wellbeing or needs. Therefore the bus service plays a big role not only by creating jobs for the drivers and administration jobs but also allows other people to get to their places of work so that they can work”

Unit 5:

“Without a reliable and affordable transport service a domestic worker from Motherwell cannot get to work in Summerstrand. Her kids and the members of her family that she supports will then suffer. The spaza shops and local business in Motherwell will then begin to also suffer. It is always important to take a step back and just reflect on these things and not just look at them at face value. As a department we are tasked with ensuring that we provide safe and affordable transport for people to get to their places of work and access social services.
Unit 6:

The economy here in the bay is not growing if anything it is going backwards I would want to believe. I find also that the population here in Port Elizabeth is growing however the jobs are not growing. Today you can go for more than 3 years searching and scanning the market for new contracts and work and there is nothing out there. There was a time during my early days for example that taxis could cash in R600 per day this was around 2004 and today the same taxi is cashing in R500 per day so that is a telling for me that the economy really is not growing at a pace to sustain the sector looking also at the amount of new entrants on to the market. There is perhaps too much hype by certain organisations to want to make people believe that there is real growth but I can tell you there is no such thing, look at Johannesburg for example there you have tangible growth, drive through Johannesburg you will find 2 to 3 Mercedes Benz garages in PE, you have had one Maritime for how many years now. Look at the recent bus strike for example in the past month by Algoa bus driver, if you drove around the city there were no people stranded, everyone got to work on time no issues, my vehicles average income for the month of the bus strike remained relatively unchanged whereas back in the day people would be stranded, my cash sales for the day would shoot up by more than a third. So you will find that the impact of the bus sector to the economy cuts both ways. If you look around and listen people are being retrenched and driven to early retirement, you find that most of these particularly the black people, with a little cash, are now buying taxis to attempt to sustain their livelihoods and most of them operating illegally as it is such a mission to acquire permits. Back in the day they would perhaps open spaza shops however, the Somalis have now taken over that industry. I used to own a supermarket but I was forced to close down because it simply was getting tougher and tougher to compete with these Somalis on pricing therefore I too ventured into public passenger transport.

Unit 7:

“The growth of the economy in PE is not keeping up and there is not sustainable economically as things are going. There are a number of reasons for this including the fact that corporates out there are just not doing well and this then flows through to us the operators and now for a number of years in our negotiated long term contracts, when it comes to the time of the year where we have to put up rates as agreed by say 10% then they don’t want to give you the 10%
as they too are struggling and are looking to make costs savings. What do we then do, is we will also have to start reducing costs, cut corners here and there you then have a situation where you may have to cut jobs, reduce staff, perhaps not service and maintain vehicles as regulatory resulting in the long term less reliable service which means bus may be prone to more frequent breakdowns. This then means people can’t get to work on time, people will lose income”

Unit 8:

“On the one hand PE is definitely growing, you just have to look at the development taking place however, with increase accessibility there could be stronger growth. Once again take the example of flights, it is easier and more convenient to do business in Johannesburg because it is easier to travel to and in Johannesburg through public passenger transport. For any region’s economy to growth access through roads and transport infrastructure is critical. People need to come in do business and leave. Look at the FNB stadium in Johannesburg, there are trains going through the stadium. During soccer games the trains are activated, the public flock to the stadiums and need not worry about transport availability and accessibility through costs. As a result during big soccer derbies these stadiums are working hard as they are packed to capacity, because the trains are activated and people are able to get to the stadiums. Come to PE, it is a schlep to come to the stadium no wonder that stadium is never full, how do people get to the stadium during big games, meter taxis, via taxis and private transport as a result you sit with congestion around the stadium and uncertainty as taxi are unpredictable. PE currently is heavily reliant on the automotive sector to drive the economy, look at what is happening there, the impact of this flows through to the supporting industries such as parts manufactures, accommodation establishments that hosts people coming to the factories and transport which would then ferry these people to and from the hotels, thus we need to diversify and perhaps tourism could be the future but we need and effective and efficient public transport sector without this our economy will go backward”

Unit 9:

“As far as I am concerned the city is growing definitely. Unfortunately at the same time we are also crippling our own sector because of accidents, faults and these other related issues, which
has a negative impact on our economy. So what I am saying is that yes it is good to grow but the sector must also be propped up and have in place regulations and assistance provided to the sector to facilitate the growth and achieve maximum net benefits from the growth.”

Unit 10:

“I think firstly although PE is much smaller than Johannesburg and CPT, then you have the issues of the number of people staying and working in certain areas reduce the benefits of economies of scales from the number of people whom use the system. PE is broken down into four quadrants, in the east you have Coega with is growing indeed, you go to the west you see the new shopping centre with has come up with the developments around it, towards the South you have your Summerstrand and the touted Waterfront after the removal the manganese plant to Coega. The north yes, but not so much however broadly speaking you notice that overall there is growth and planned developments, the public transport sector must just be ready and proactive rather than reactive which has been the case previously I would argue.. The growth is there especially over the next 10 to 20 years but the sector must be prepared to augment the growth because without this sector that support the economic growth there will be short term lived growth in the economy.”

4.3.4. Research question RQ4

- What is the impact of public passenger bus transport venture operations on the natural environment?

Unit 1:

“Currently the impact is really worsened by the ailing infrastructure and the type of vehicles that are currently being operated. There are no regulations that govern the age of Buses for example that can be on the road. In a world class public transport system there must investment into policies that determine what vehicle ages and technology that must be on our roads as you find that majority of the impacts to the environment is from vehicle emissions”
Unit 2

“I believe that the impact varies, you find that the majority of bus owners entering the market are buying old vehicles from the 90s to mid-2000’s in general the bus sector still has a major impact on the environment because of these business whom do have in place emissions control or strategies in place to minimize the impact to the environment and are using old outdated engine technology and dirty fuel which makes not provision for environmental concerns. It is usually the more established companies that can afford these new vehicles and diesel technology, which is a problem as it gives the whole transport sector a bad image such as Algoa bus, PATCO which use vehicles as old as 15 to 30 years”

Unit 3:

“Take Algoa bus, they have got 500 vehicles they have a full circle solution in terms of how they sort their vehicles out, they have got a machine shop where they can recondition engines, so if a bus engine fails they recondition the engine themselves and basically the bus runs again, the problem with that is this, that environmentally that means that they are keeping Buses running for 20 and 30 years, they have got vehicles in their fleet that were built in 1980 and if you look at the diesel engine technology, it is old technology, it not environmentally friendly the vehicle are much dirty, they use much more fuel than what the norm is today, so it is basically an expensive dirty environmentally unfriendly. With the production of the new vehicles what most bus companies are doing is that they are looking at bringing in vehicles with that they call a euro specification in terms of the diesel engine technology, what that tells you is how clean that engine is, the problem for South Africa is that the euro specification in the rest of the world is that the euro specification is euro 6 and seven already, in South Africa the highest specification is euro 4, the reason for that is the diesel fuel that we use, we are only starting now to convert to 50ppm and most of our vehicles are still using 500ppm. Therefore, the facing of environmentally friendly vehicles is taking much longer. What is interesting is this though that your larger bus companies, the oil that they syphon off during the service they sell to a company that will collect the oil from site, the company will take the oil, filter the oil for hard particles which is then sold to mining companies who then use it to run their boilers on the oil engine oil, in that regards, they actually recycle the oil”
Unit 4:

“Some of the big companies like Springbok Atlas that I used to work for there is a big focus on reducing their carbon footprint. We dealt and I still do now in reservations here at Blunden with a lot of the big overseas tour operators and sometimes when our vehicles are sub-hired the tour operators will ask you know questions relating to our make of vehicles and what plans we have in place in the business to promote the natural environment, this is also in programs like responsible tourism”

Unit 5:

“You see the different departmental agencies must come together to address some of these issues. Currently through legislation to reduce the air pollution the government has already in place legislation to reduce some the impact to the environment such as the vehicle emissions. As noted earlier in the long term a densification strategy and moving commuters over to the public transport system in the long term can dramatically reduce the negative impact of transport to the environment”.

Unit 6:

“You see this is a difficult one more especially for us black operators in the townships as we are not subsidized by the government which leads to us really to struggle to perhaps curb other things for example our vehicles are really old and we only service our vehicles well after reaching the service intervals as we often lack the financial resources and cash flow. Unlike big companies we really work from our pockets and often from hand to mouth, then you may perhaps look at environmental issue when you have met your more urgent needs of the business. Further you know when I had just started out, we would take the dirty oil after a vehicle service in my workshop and simply dispose it on to the streets and drains. As the times went on we then went on to sell the oil and as I acquired more capital and better cash flows I could then afford to perhaps look at other issues such as better vehicle engine technology, I acquired newer vehicles and disposed of the older smoking engines”

Unit 7:
“No, not at all, there is currently not enough being done by government, the bus companies and the people using the Buses to protect the natural environment. If you take the ageing of vehicles for example. Vehicles are simply allowed to age too much. So obviously if you look a vehicle bought 20 years ago which we have on our roads you must remember then that the amount of carbon dioxide that bus emits is a lot more than newer spec vehicles available today in the market. For example in PE we do not have dumping ground for oil and tyres what do some of these owners do with these items. Some us still make an effort and put our oil into drums and give it off to the drum refinery people. And also remember that especially your black operators who are still up and coming including some of the established ones do not know about all this going green business and protecting the environment. Public awareness is still very small and it is not made a priority by the government. At the same time all of us are trying to save costs and we should not be saving costs at the expense of our environment. Therefore, there must be a lot of education and recommendations on these issues and people can then better appreciate the fact that you cannot simply dispose a 20l container of oil into the drain. Where is this oil going to, into the ocean and rivers and kills fish and so forth!

Unit 8:

“I think once again this goes back to the lack of planning. The city of Cape Town was in the news 2 years back and people were up in arms. The city declared that in the water front area which is one of the main tourist hubs in Cape Town no private taxis could operate with old beat up Mazda from 1980! They set standards. People came up with all different types of emotional reasons as to why they should be allowed to carry on trading with these old vehicles. But no, the city came with standards for example your car must be this old to operate in this present. Come to PE you can bring in whatever skoroskoro you want to bring in anywhere in the city and trade. Yes, there are big implications for the environment and as it is it is unsustainable however, this goes further that just environmental considerations for emissions and so forth, there are a host of other issues such as safety, brand image of the city and so forth from operating in this way. Whether you like it or not, agree with it or not, global warming is here and the vehicles are a significant contributor, look at Johannesburg and the inland areas currently under water restrictions as a result of the drought. PE this time of the year is normally hot and tourists flock to the city for the summer, but look it is rainy and cloudy. Go to Sweden,
if you use alternative fuel vehicles they incentivise you in a number of different way for example can park anyway and won’t get fined”

Unit 9:
“Realistically you see, although we often have the best of intentions and conduct our business as ethically as possible in business unfortunately especially in a cut throat economy you find that as I mentioned a little earlier that some of us may push the limits as far as we can. This is once again due to a number of reasons such as the fact that everybody is trying to save as much costs as possible without jeopardizing the quality of the offering and then you will consider environmental issues maybe in that order. You know it would be a big plus if the environmental issues could be addressed as the vehicles are the main contributors to air and noise pollution for example”

Unit 10:
“Environment constraints or impacts however we can call it, looking at the vehicles we bought for the IPTS, looking the fuel consumption and emissions these were implications which we the municipality were cognisant of at the time that we purchased the vehicles. These were considerations that were seen coming through the specification of the vehicles now five years or so ago today, this done with the intention of reducing the impact to the environment through in this case carbon emission and so on. Linking also to issue of environment we as the municipality are advocating for a seamless transportation system that the end objective. The logic here and this is nationally is that people need to move away from private vehicles indirectly then you are reducing the negative impacts of transport to the environment, for example if you have 10 people, driving 10 vehicles, can be reduced into one bus, which from an environmental view took into account already as mentioned issues of impact to the environment into the specification of the vehicle prior to purchase.”

4.3.5. Research question RQ5
What personnel development programs are available to capacitate public passenger transport bus venture operators?

Unit 1:

“There are different programs that are available out there to send staff on training and upskilling. We encourage the upskilling of staff as you will know we deal with a lot of corporate and international companies who expect a high standard and professional service. The type of personnel development training will depend where the member of staff is in the business and where there is a need. Some of the staff coming through the system now from university come with a fair amount of skill and we would then send them on service excellence training to prepare them for work and how to deal with our customers.”

Unit 2:

“There are programs out there that are available however, accessibility might be a problem because as far as I know there only one institution in the whole of South Africa that offers a transport management programme and that is the University of Johannesburg and now that is obviously easily accessible for the people staying in Johannesburg but for the people in the coastal provinces it is not all that accessible such as business in the Western Cape, Eastern Cape and Kwazulu Natal and as far as I know that is at tertiary level the only recognized programme. With regards to drivers there’s short course such as professionalism course, driver course, for admin staff customer care course that can be done which deals with how to deal with customer and service providers”

Unit 3:

“Let’s start with the driver, currently in the public sector there are no programs currently available to capacitate driver training, what is available is that there is private companies for example Kempston whom have a driver simulator, that can be brought on to your site, and you can test your drivers competencies where different scenarios will be presented to the driver such as emergencies, breaking and then you can identify deficiencies from there and provide training to the driver. Then you look at the ops managers training, here you have UNISA and
UJ who would offer short term courses in transport management and then NMMU who can offer a degree in transport managements. Also you have soft skills and firefighting training which is very important and also first aid training. you cannot put a driver in a vehicle whom has not had first aid training in a bus, then you look at when dealing with clients that soft skills comes in very handy, when you look at the most common complaints on the NMMU route for example often relates to drivers who are rude and this has a direct implication on the service.”

Unit 4:

“How can I say, with our line of work there’s a lot of admin and record keeping required, if your staff is not familiar in general with office administration then you will sit with a lot of problems and issues where customers are not picked up on time and general problems with the fleet maintenance and record keeping. The staff must be well trained with general customer communication to give the clients better service and even better service of the internal clients and everyone in the business as well as outside of the business such as suppliers and customers. To me it is even more important to ensure that the drivers receive more upskilling and training as it is really not of much use to build all these great relationships with the client and the driver only ruins them by being rude or not friendly or not being helpful so the drivers must have good peoples skills, make the client feel safe on the bus, be helpful and be pleasant otherwise that client will not come back”

Unit 5:

“The Transport Education and Training Authority ‘TETA’ is a leading authority in the transport sector focusing on skills development and training programs. The vision of the government through the TETA is to advance skills development in the transport sector for a better society and improve the economy”

Unit 6:

“Personnel development is extremely important especially here where we operate in the locations working with staff whom are from poor, poor backgrounds whom are struggling with real daily challenges of poverty and have received little or no education. Even in others and
especially public transport sector, more so among the black operators operating in the less affluent geographical markets, you find that there is little to no effort made by the owners to upskill their drivers, operators and even admin staff who all deal with his clients on a daily basis. However, I take a lot of pride in that I have made an effort to formalise my operations, people are not getting paid in brown envelopes here, everyone’s wages is deposited into their banks, and people are making UIF contributions, where I see potential I take the staff through training such first aid training and other softer skills such as peoples skills training for the staff and drivers. You know it is a completely different thing to drive a 15 seater vehicle and a 60 seater vehicle. You find that there is often a heightened sense of things in your bigger vehicles which the driver needs to deal with. When stopping at a garage the driver in a 60 seated vehicle must have a whole lot more patience, courtesy and temperament than a driver in a 15 seater vehicle. However, I strongly believe that it remains imperative that we continue to develop staff as it will be to the benefit of the business and industry as a whole in the long run. Take these people to computer course, take them for first aid training so they know what to do during accidents, upskill them so that they are able to deal with the pressure of their positions and deliver better results. Yes, it may be that it costs you both cash and time, some people may even leave having trained them but the cost of not training and upskilling them far outweighs the cost of training staff. I do find that you know there are no programs out there that are tailor made to training and equipping us in this sector like you would have for example in other sectors such as the hospitality sector”

Unit 7:

“You will have a lot of value when you train staff and staff do require training from time to time and upskilling. This will be very beneficial to your business and assist with getting more co-operation in your business because without co-operative staff or staff who do not know how to and what to do, you will have a big problem on your hands. However, unfortunately in PE there is not much of these programs available especially for the drivers. I mean a driver is not just a driver, he must know and be skilled in how to handle people and challenging situations. Take drivers with poor driving habits for example such as hard braking, take this person through a programme which can assist improve his driving and those types of things and this will help him become a better person and you will have a better employee”
Unit 8:

“I will give you a simple example, Gomotso has a driver, an usher at all times, if he has a bus he then has two ushers. While the driver is focusing on the driving the ushers are well trained and ensure that the tourists on and off the vehicle are not at any time vulnerable and have someone to consult. This could be at any time for instance when the driver is looking to park the vehicle or the tourists have disembarked for whatever reasons such as to go to the bathroom. The tourists are safe, the ushers are well trained, skilled and knowledgeable on how to handle people. As a result the tourists will come back to the city for a holiday and even perhaps go back and spread a good one of the city”

Unit 9

“Absolutely, it is useless for me to get the big jobs secure contracts, hand the client over to the driver for the trip or tour. While on the tour the drivers are rude and unhelpful. Therefore training and development are critical to assist ensure that everyone from the back office staff right through to the driver is well vested on what is required of them and how to execute.”

Unit 10:

“Training and upskilling is critically important for the future of the public transport sector. To become better at what you do you, will have to go on training and perhaps even back to school to acquire new skill, better ways of doing things and increasing the value of the sector. Also with skills development comes equally important benefits of ethics during the training. Look we have to be honest, ethics are an issue in the public sector transport especially if you look at how taxi owners and the drivers themselves conduct their business. The driver is in the wrong but they will verbally abuse and be inconsiderate on the road however with proper skills development and critical training a lot of these things can be remedied”

4.3.6. Research question RQ6

- What are the regulatory implications for public passenger bus ventures in South Africa?
Unit 1:
“Government must put in place and enforce regulations that create an environment for private entities to operate in the market. Government must further put in place regulations for example back in the day I don’t know if you will remember you found that there were park and rides facilities near cities and you were not allowed to drive in the city centre thereby reducing congestion in the CBD’s, creating employment, increasing accessibility through regulations”

Unit 3:
“The government can still do a lot more to better regulate the industry. I mean there are so many operators out there, maybe not bus operators but mini bus operators that are currently just operating without the right documentation. The mini bus taxi operators are also a law unto themselves and just bulldoze their way in the industry. Government must through the regulation like the transport board and other government agencies play a bigger role to ensure that the industry players are able to compete fairly in the market for work, stamp out corruption and put in place incentives for the bus operators as we play a critical role in the upkeep of this economy”

Unit 3:
“At the moment we only have the permit system in place, which is advertised in the government gazette where you plead your case at the transport board whom approves or does not approve the permit following a hearing. The problem there is that I don’t think there is any scientific process to which is used to issue the permits apart from objections from the local permit holders or parties to the application. For example they are not aware of how many permits are out there, which is problematic. There is also a huge amount of operators currently operating without permits on different routes as there is not really enforcement particularly among the smaller operators from the transportation board. There is just too many operators such as cab companies, taxis and so forth which often very well leads to some of the tension you have in the public transport sector such as the taxi industry. The bus guys to a lesser extent because of the amount of monies involved in the purchasing of the vehicles and issues relating to financing of vehicles such as permits for insurance and application for finance from the banks”
Unit 4:

“I am not really sure if the government should really be getting involved here. From where I am involved in the business my personal opinion is that the only thing that the government must really do is to use the regulations and law to stop corruption and punish offenders who do not respect the rules of the road and this industry. This way then the business will be able to work and create jobs”

Unit 5:

“You see Bhuti we would need to go back and do a reflection, now the point that I am coming to is that currently the manner in which some of the operators in the industry such as taxi operators you will find that they are all individual operators. They only organise themselves into an association only for the sake of belonging. Now you will find that no one among them operate outside of these associations, never mind the fact that the act makes provision for anyone to actually do exactly what they are doing without belonging to their associations and structures. However, the taxi associations are against that although no one up to today seems to be interested in challenging this as per legislation at the court.

What the legislation is now trying to do is to force them and get these taxis to improve and better them and take them a level up hence the term BRT, commonly known as IPTS the integrated public transport system here in the Metro as they do not want this term BRT, to them BRT is bus, which then means they are excluded, now here what is supposed be happening in the Metro is that the small bus operators are supposed to be coming together with Algoa bus. Now Algoa bus is seemingly a ghost owned entity, where you have your executive management also sitting at board level and you can never know who the actual owners are. A little while back you must have seen the strike at Algoa bus where the drivers were striking and demanded to receive a share ownership of Algoa bus. Now Algoa bus seems to be refusing to get the small bus operators on board, saying they are the ones running these bus routes and the mini bus operators can sort themselves out elsewhere. Currently Algoa Bus receives more than R200m from the department per annum which then mutes Algoa bus.
Now the mini bus owners organised themselves into co-ops and eventually forming laphumilanga as their business wing. Now the mini bus taxis ferry over 60% of people daily to and from school and work and receive no subsidy from the government. However, the co-op was abandoned due to issues of governance and relating to governance with co-ops for what they wanted to do and have now currently embarked on forming PTY’s and other forms of companies to then beginning to drive the engagements again. Now the intention with the legislation really asks and seeks to find and put in place means that can help improve these mini bus operators and bring them a level up and has less to do with burdening them. In time the intention is to eventually consolidate all these individual operators into a single entity where they are then shareholders and receive income. However, they cannot then go back and have mini bus running and competing against this established entity. However, these taxi drivers are not aware of this, as the municipality has not been upfront with the mini bus operators and told them that once this entity has been established they will lose the rights to operate on these routes and the now established entity will be given the routes. From a departmental perspective the department has come up with a concept document an integrated master plan master plan because we have discovered that in spite of all these service that are provide be it bus or mini bus services they still lack transportation. Now we drafted this master plan that address issue of synergies between these operators and the intention is we have identified routes to pilot this concept.

I’ll tell you what also, what we find is that too often transport and accessibility planning is an afterthought. If you for example look at the Bay West shopping centre, they went and built that centre there, now the problem is that no said that in terms of the transportation and consulted with us as a department what is going to happen with transport. I mean we are paying per annum more than R200m to subsidize routes in the Metro.

The ideal scenario it seems is that they are targeting people whom have means to get there, then people whom do not have means for transport then becomes a secondary issue. Then you find that you now have to increase the budget for subsidization because you find that some of the people going there are going to a place of work, subsidization you must remember is to subsidize the traveller to allow the passenger to access their places of work.

Apart from that you find that the municipality also, just takes people and builds settlements on the outskirts of the city you know, so you have kids there that need to get to schools which there aren’t any in this settlements or nearby areas are unable to accommodate them as they are
overcrowded already and not the department once again the department must come in at this late stage and it then becomes a burden of the department to try and implement legislation correct all of these things which then really becomes a major problem.”

Unit 6:

“When you talk about this issue of regulations the government really is also causing the industry to stagnate in how they do things. I am sitting here now and could have bought 10 new vehicles, however there is a law that say you cannot buy a vehicle if you do not have a permit and these permits take easily up to six months. Business cannot afford to wait that long and you find that operators end up circumventing the law. The government must begin to make it easier for operators to trade, acquire permits and grow their business. As it is currently it is just far too difficult and is fraught with challenges where the department sometimes does not have money to advertise and the systems and how the law is applied changes all the time. For example an operator in East London will not know how the issue of regulations of the industry here in PE will affect their business because things are done differently and there is no consistency which results in a lot of uncertainties.

Unit 7:

“Why do we for example need a permit? This is just a piece of paper that simply puts restrictions on what we do. We must apply, we must wait, we must be gazetted and in the mean time I cannot trade if I do not have a permit. Here you are talking about a legal bus owner and operator who already has some permits. As long you have your first permit that going forward you must be automatically granted your permits. Nobody in their right minds will go and just continually buy Buses. The market will always dictate who and how much vehicles you have. Yes perhaps the new entrants must apply but existing business must be allowed to grow their business and create jobs, contribute to the tax of the land. You know how many people are out there operating without permits because it such a mission to get these operating permits. So does permits stop people from operating no! Does it make it difficult for legitimate business like ours to grow and expand yes? As it is the regulation are not creating a conducive environment which supports the industry in the long term. You struggle and eventually say you get your permit, now you go back to the bank, eventually get your loan, then you collect your
buses, the following day you go and register your Buses and guess what, you walk out of the post office between R18 000.00 and R38 000.00 less in your pocket just to register a bus. This is before you have even started trading. Now, go back and look further, who are the people that we are carrying up and down, these are poor people whom cannot afford their own vehicles. Now then you have the diesel going up and up every so often and a little down again but more up. Why can the government not introduce regulations to subsidize our diesel costs as operators carrying these people, back in the day the apartheid government subsidized the farmers diesel costs, or is public transport perhaps not a priority then for our government.”

Unit 8:

“Again you simply have to take to the airport, look at some of the taxi cabs there that are servicing the people coming of the planes. You can take 3 cabs and pay 3 different pricing going to the same destination. Driver gets into an accident with some of the bus companies and who gets jailed the driver. There was recently in the news where a driver was involved in an accident where the brakes failed, this guys was new in this company and only drove the vehicle once and why must he take the fall. Where are the owner should they not be ensuring that the vehicles are safe and good to be on our roads. Where is the law to ensure that they are held accountable to this extent? Go to the location, you have jikeleza’s as an acceptable mode of transport in the location to ferry people around. When they get stopped, the driver is fined, these drivers don’t even have drivers licence and the vehicles are not roadworthy. Yet this is allowed to carry on as it always has. The focus of the government is misplaced. These people are more concerned with trapping us speeding than ensuring a conducive public passenger transport sector through the law. Instead you find them deployed hiding behind pillars that are supporting bridges on freeways or under bushes trying to catch you speeding”

Unit 9:

“Allow me to put it into one word for you, the word corruption! In majority of the times corruption just comes through and beats the system. You know I think we have a great system out there as far as regulations are concerned however, it is just being corrupted by the people whom are meant to implement it. You know if things were done according to the spirit of the regulations put in place we would have a far better sector well into the future.”
Unit 10:

“You see some of the legislation I believe would still have to be relooked at. Go to the location for example and demographically this is where most of our transport challenges are sitting. You have an old Gogo who needs to get to a clinic which is not within walking distance, she then must get a bus. The legislation says then that the walking distance to the nearest bus stop must be within 800m on average. Now really a sickly old woman cannot have to travel 800m to get a bus stop and being exposed to the elements and issues of safety. We also need to maybe introduce non-motorised transport also. It may seem contradictory but this is perhaps just a case of infrastructure and education that needs to take place. Introduce and regulate regulations to have bicycles used as an alternative mode of transport which has various benefits for the people themselves. You see once again you find that there are laws and regulations that were either inherited or inspired by a system working elsewhere in the world and the country which can be better amended to suit the local situation. Secondly although the regulations yes to an extent are conducive and are there however, the implementation is some else. Legislatively yes there are certain things that can still be tweaked and amended however the implementation of some the things that are listed in this legislation is a totally different story. Often you find that people will actually be criticising the legislation but actually are criticising the implementation because the people that are implementing are not correctly implementing the spirit of the law.”

4.3.7. Research question RQ7

- What infrastructure and financial capacity planning is required to establish a sustainable public passenger bus venture?

Unit 1:

“Substantial investments from the government in the form of infrastructure and policies to increase accessibility with reduced or less input. Critical also here is the involvement and investment from the private sector as it will not come cheap in the short term and may be met
with a lot of resistance initially. Throwing away money through subsidies will not solve the problem”

Unit 2:

“You would have to be in the industry for a while, have built good credit records, good relationships within the market and with suppliers and customers including serious assets to your name as costs are rather an impediment, in this instance, it can even sink your business as you want to focus on your profits in the short term and sustainability concerns broadly speaking become almost a nice to have after having seen to your more pressing and urgent considerations. Staff also perhaps may also have to be further trained and skilled to think further than today’s current activities and take into account future possible outlook”

Unit 3:

“If you look at a company like Blunden, Khuboni, Van Rensburg and all these people realistically speaking if you don’t have guarantee of fixed income it is virtually impossible to venture out and begin to look at sustainability concerns beyond your immediate concerns for viability of the business for example making a profit. Where then the operator has the luxury of fixed contracts over extended periods they will then begin to look at purchasing new vehicles and process that enhance the long term sustainability concerns of the business and incorporate things such as you know high quality bus driver training programs and so forth. However if you are a start-up business you don’t have that luxury as you don’t know where your next job will come from inevitably you enter that market with vehicles and systems that you can afford, which often are much older, dirty and so on. If you look at Van Rensburg Buses, for instance there is not a single vehicle that is less the 10 year old. For the price one new vehicle you can get three times as much Buses. Costs therefore are a massive issue in this regards. Even operators that can afford new vehicles, there are still cost consideration and this whole thing about buying specific brands which often can be R600 000.00 more expensive have gone out of the window”
Unit 4:
“Look at a company like Algoa bus, they are subsidized by the government. Then you look at a company like a Springbok Atlas who is not subsidized by the government. Which of these two companies do you think is more sustainable looking at their fleet and now recent strikes? This tells me that there is more that needs to be done here and not just increase subsidies or budgets”

Unit 5:
“The government has in place great policies to ensure that there is in place the right infrastructure to support the public passenger transport system. What I can tell you though is that the execution and political will to ensure that these infrastructure development projects are put in place is something else”

Unit 6:
“I must be honest with you these are really last on the list on in the market we are operating in. The prices that we charge are simply not enough to include other considerations with the available funds and where there is excess cash there is just too often more pressing issues such as relating to vehicle maintenance. As a result we often cannot afford to put away money and save to improve our infrastructure”

Unit 7:
“This is not a case of being disgruntled or anything. But now ask yourself honestly, are the bus operators receiving any support from the government. The answer is not. If anything the bus operators are made to pay and pay and pay even before you do your first km. remember that majority of people in South Africa do not have vehicles and are either unemployed or unemployable. When they look for transport obviously they will source the cheaper options with mass movements. Who must ferry these people around we the private bus operators. Therefore if there is a genuine commitment both from government and the operators themselves we need to come closer and ensure better access to financing, reduce the red tape and support the private operators. I mean as an up and coming operator and even the more developed
operators, for you to even start thinking of issues of sustainability and long term you have to build solid cash reserves’’

**Unit 8:**

If you go to London for example, their trains go everywhere all the time. When I was there now two weeks ago they were about to introduce the 24 hour service. What does that mean for me, I can go clubbing and shopping right across London well into the night. Can you do that in PE, no you can’t, try going clubbing and you are forced to drive home in the morning drunk and get caught in road blocks and end up in prison. Nobody needs that so we stay at home or in the case of tourist just go and visit another country or city. The benefits for the economy are that through improved and reliable public passenger transport system their economy will benefit over and over. Therefore what I am saying is that don’t just invest into the bus only, look at a holist investment into the infrastructure of public passenger transport to improve accessibility. The bus cannot access some of the narrow roads in the townships, therefore have smaller vehicles that will bring those people out perhaps to the main roads where the bus will be ready to take them through closer to their destination and perhaps have the same arrangement on the other side’’

**Unit 9:**

“You simply must just look at how much the IPTS infrastructure cost the city, this was a multi-billion rand which sadly is not being utilised today. Further look at what infrastructure is there, clearly far from being attractive. So where did all the money go? You see what needs to happen to get the industry moving forward in a better way is a genuine engagement with the different role players such as bus owners, taxis, authorities and the public. From there better planning using the different inputs and invest in a system that seems the best value for money system. Corruption, I can tell you now, with the best plans drawn up, if you have corruption in the system, ultimately this will mean that billions are spent on and the system does not do what it is meant to achieve because all these monies are not going to where they were meant. I might be contradicting myself here, but I must tell you, I don’t think there is much wrong with the systems and laws that we have in place however once again it is corruption by some of the bus companies, taxis and even government officials that is the problem here.”
Unit 10:

“The infrastructure in place currently to address the objectives of seamless transportation including other alternative modes of transport such as designated bicycle lanes is insufficient to non-existent. Take for example in New Brighton there are no bicycle lanes so even if we want to promote the use of alternative modes of transport the infrastructure simply would not allow. The municipality as indicated earlier aspires towards densification and integration of transport modes currently available in the market to promote seamless transportation. To do this well, will require significant investment, education and training and commitment”

4.3.8. Research question RQ8

- Do the current public passenger bus ventures have the capacity to adopt sustainability considerations into their business?

Unit 1:

“Yes I do however, it will require investment both from government and the private bus companies to succeed from a rand value perspective as well as political will from the government entities such as municipalities to put in place and enforce legislation to drive issues of sustainability. There must be a political will from the government and buy in from the private sector”

Unit 2:

“If you want to be an established player in the market you have to begin to adopt sustainability consideration which includes purchasing the right vehicles spec and it is not easy to get funding and capital from banks. You would also need to train your staff and targets to speak to your objectives. Also it becomes about which sector of the bus transport you are wanting to operate in the different levels such as contract work for staff and scholars or at a higher level such as inbound international tours therefore depending on where the business is going sustainability concerns will differ and will be adopted by different companies at different levels”
Unit 3:

“Again you sit with a situation where unfortunately a lot of this will depend on the business model that is being used to service the route for instance if you look at the business model for instance which Blunden is using where they get a fixed rate for their vehicles, the much more freedom there to develop a sustainable service in terms of what times they run, how many times they run, they can effectively work with the students to develop the best service to actually service them. That then not only boils down to times that they are running but also the routes, the type of vehicles that they are running, and so terms of what the actual add ons on the vehicle and using technology and application to better adopt sustainability considerations through making information of the vehicle to user and so on.”

Unit 4:

“Maybe not as things are at the moment. We are really busy as it is on a normal day where would you fit in some of these additional responsibilities. However, I do believe that this is the right way to do things going forward. People are also used to doing things in their own set ways so introducing some of these things that you speak of into the business and day to day routine will take time and require some training so that everyone knows what is expected of them”

Unit 5:

“I believe that there needs to be legislation in place and incentives to encourage not only the bus operators but also the mini bus taxi operators to introduce these considerations into their business. Too often you find that there needs to be awareness created through public participation. The owners are sometimes not aware of their actions thus education and training could be the best place to start”
Unit 6:

“Yes, perhaps for your more established bus companies whom have been in the business for a long time and have acquired skills, resources, suppliers and funds can be said to have the capacity. However, speaking for my business as well as those similar to whom as you know most of them staff and owners included here, come from rural backgrounds with little education and skills would have first receive the training and skilling necessary to carry out these initiatives. Therefore it is a yes and no depending on where the business are geographically located and the markets they service”

Unit 7:

“We the operators know very well that we have a responsibility to ensure a sustainable bus sector. However, you find that we easily and almost permanently are caught up in the rat race where we are focusing on getting work at the right price to keep our business afloat. Unfortunately we are also still very much profit driven and other factors come thereafter. We would have to make investments into our business and systems to incorporate other objectives and unfortunately this often comes at a cost”

Unit 8:

“Yes, definitely they do! Remember there are small things that although incremental the sum is greater than the parts and these seemingly insignificant changes add up at the end of the day. If you think about it by simply sensitizing your staff and clients of the dangers of unsustainable behaviours, they are not aware of and the benefits of a sustainable long term perspective you might find that by changing mind sets you change attitudes and how people do things. You don’t necessary have to spend money all the time”

Unit 9:

“You see once again I have to go back to what I mentioned earlier on. Everyone in the sector is doing their own thing and competing to get as much of the business for themselves. Then you still also have your taxis that are continuously moaning and complaining about how we the bus companies are taking their business. The different players in the market must begin to come
together and genuinely work together and then only you will begin to see changes and it will definitely be a big plus towards contributing to a better industry for all”

Unit 10:
“The challenge here goes further than just the capacity of your bus operators be it privately owned or subsidized, in fact including some of the semi-governmental owned entities such as PRASA. The issue really at heart is that we are sitting with a public transport system that is not integrated. This is what needs to be spoken to as mentioned earlier through strategies to densify your identified public passenger transport corridors, you see it has to be a holistic approach and not just a responsibility of a section of the sector”

4.3.9. Research question RQ9

- What is the impact of private vehicle use?

Unit 1:
“In countries with first world public transport systems which use a mix of transport modes such as mini buses and or, Buses, light rail and mid Buses inside city centres there’s really no need for privately owned vehicles because the public transport system is safe, reliable and on top of that there is regulations which are enforced to limit the use of privately owned vehicles. Now these countries like Brazil have seen the benefits of reducing the number of privately owned vehicles on their roads such as reduced congestions, traffic accidents air pollution and more active economy through improved accessibility and jobs created to monitor the system”

Unit 2:
“If sixty people each drive their own vehicles, that is sixty vehicles on the road, sixty vehicles emitting all sorts of gases into the atmosphere, whereas if you take all those people put them into one bus, you now have one vehicle on the road, it is less emissions, it is cheaper to operate, it also drives the economy because you create a job for the driver, stimulates the company that
would be paying more taxes which means more money for the government which ultimately drives the economy. I would use my private vehicle more for afterhours and leisure purposes such as visiting family and going out as a bus is not going to drop off sixty people at their individual places however, for travelling to and from work a bus is the cheapest alternative”

Unit 3:

“Using my own vehicle is better, I can get there much quicker, I don’t have to stand and wait, whereas with public transport yes there is less vehicles and reduced damage to the environment and roads itself, however then you find that you have to walk far to get to the bus stop, get up very early to get to work on time, it might be still dark if it is in winter and now you get mugged either on your way to or at the bus stop. I feel that yes using my own vehicle maybe will increase the negative impacts to the environment such as air pollution and maybe vehicle accidents because there’s now more vehicles on the road and so on but because of these concerns especially for me as a woman and for my little kids when they go to school I still prefer to use my own vehicle”

Unit 4:

“Using my own vehicle is better, I can get there much quicker, I don’t have to stand and wait, whereas with public transport yes there is less vehicles and reduced damage to the environment and roads itself, however then you find that you have to walk far to get to the bus stop, get up very early to get to work on time, it might be still dark if it is in winter and now you get mugged either on your way to or at the bus stop. I feel that yes using my own vehicle maybe will increase the negative impacts to the environment such as air pollution and maybe vehicle accidents because there’s now more vehicles on the road and so on but because of these concerns especially for me as a woman and for my little kids when they go to school I still prefer to use my own vehicle”

Unit 5:

“Go to Colombia, look at the public transport system in Bogota you will understand why we as the government are pushing for a reduction in the total number of privately owned vehicles
on the road and moving people over to the bus and mass public transport. The benefits of less vehicles on the road speak for themselves. This is why therefore there is such an emphasis on the identified public transport corridors and densification at local government level in our provincial integrated public transport plan”

Unit 6:

“Take a country like China for example you can see even without going there that it is misty and there is reduced quality of air because of increased emissions from the amount of vehicles on their roads. Now what I am saying is that lets not wait for this thing to happen here in South Africa before we do something about it. Let us now already put in place means to ensure that we do not find ourselves in the same position down the line. We can see that we need to reduce privately owned vehicles on our roads from the other bigger countries and move towards mass public passenger transport. Firstly, the government must intervene, buy out the taxis or something, formalise the public passenger transport sector. But the issues of corruption I believe must be overcome firstly as you might find a scenario like you have here in PE before 2010 the IPTS was introduced, big investments were made into infrastructure but 5 years later the system sits unused. The transport sector in South Africa is just fraught with greed and corruption, look at the trains that were recently purchased by PRASA look at the issues at Volkswagen can these things just be a coincidence or is the environment in South Africa permitting for these things to take place”

Unit 7:

“There needs to be a genuine commitment and do away with corruption and different agendas. You can’t even begin to look at reducing private vehicle use if you do not have a proper functioning public passenger transport system in place. Look at how long this BRT system has been in progress. Today it has not come off the ground. What I am saying is there is a lot of benefits from limiting and even incentivizing people to use the bus. We see what is happening in other countries and even closer to home here in Jo’burg. Look at the amount of accidents as a result of all those vehicles on the road just as an example. Develop a good system, reduce the vehicles on the road get the people to use buses you create jobs, stimulate the economy and solve other issues all at the same time”
Unit 8:

“Yes, but realistically, I am planning to go home now with the wife, but now if you don’t have your own vehicle to drive around in you are completely screwed. Yes, the issues of emissions, congestions, for business such as couriers it takes a whole lot longer to deliver goods and services and others factors but you can’t just want to remove the vehicles but do not have a proper functioning public passenger transport system in place yet. It is a problem Bro, if you go to Jo’burg where the congestion complications are there for all to see as, it is a problem, and it is not sustainable. But the reality is that you must first fix the public transport system before you can even think of attracting more passengers”

Unit 9:

“It is definitely a plus factor on the whole to move as much of the public over to the public passenger transport system. You know the benefits are bountiful however, before you even think of moving people from their vehicles over to the bus there must be a complete revamp of the public transport system. Really you need not even think about is, having 120 vehicles on the road or just two buses big, big benefits not only to the natural environment but also you create more jobs for the business in and supporting the transport sector”

Unit 10:

“Precisely why we are focusing on densification and reduction of the total vehicle count on the road. Parallel to that I believe is the need to educate and drive awareness through the existing structures such as councillors on the need to reduce the use of private vehicles, increase the use of non-motorised vehicles for shorter distances. The less private vehicles on our roads and more people you have on the public transport system will result in reduced emissions, increased accessibility through a more developed transport system for more people, reduction in road accidents and benefits the economy through the revenue generated and creates jobs at the same time”
4.4. SUMMARY FROM QUESTIONS ANSWERED

It can be summarised based on the collected perspectives of the different stakeholders and individuals in the public transport sector that there is a need for bus operating ventures to design and implement sustainable operations management practices which are cost effective, increase accessibility, address key environmental, regulatory and socio-economic developmental imperatives. There also is a need to introduce a more integrated public passenger transport system that effectively makes use of the different modes of transport such as trains, buses, taxis and even alternative non-motorised modes of transport such as bicycles. Corruption was a constant concern, which was raised consistently as a key detrimental issue that must be spoken to prior making any financial investments into the sector. There was a significant gap noted between the different stakeholders needs which ought to be reduced. It was further noted that transport-planning considerations are often an afterthought and not part and parcel of developmental initiatives in the NMB when looking at for example the Coega Industrial Development Corporation and Chetty housing development.

4.5. PATTERN MATCHING

A predicted pattern was formed from the propositions put in place before collecting of the data for the case study. This predicted pattern was informed by secondary data and experience acquired by the researcher in the transport sector. Yin (2014) makes the suggestion that in case study research pattern matching compares empirically based patterns with a predicted pattern to establish if there are any similarities and if there are any, these similarities will augment the internal validity of a case study research.

4.5.1. LINKING THE DATA TO THE PROPOSITION

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<td>3</td>
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</table>
### 4.5.2. SUMMARY FROM PATTERN MATCHING

The patterns from the primary data that was collected could be linked back to the propositions of the case study as suggested from secondary data sources and proposed in chapter 1 of this research effort. There was insightful evidence gathered which would assist towards improving the future prospects of the public passenger bus transport operators.
There was a notable perception from some of the role players in the sector that there is a need to strengthen the enforceability of the regulations in the sector. Secondly, that there was perhaps not enough incentive in the market for bus operating ventures to include key sustainability operations considerations in place of addressing more urgent considerations for meeting their short term obligations. Thirdly, that the transport sector in its current form is unattractive and not sufficiently reliable to encourage travellers to switch from private vehicles to the bus or public passenger transport. Lastly, a more pragmatic approach is required to sustain the industry. This approach must take into account integrated modes of transport.

As guided by Yin (2014) based on the prior proposed research study propositions as derived from the review of literature, patterns were identified in the data collected, the research problem and questions were addressed.

4.6. SUMMARY

Chapter 3 of this case study research effort gave insight into the research methodology discussing in detail the research questions, propositions, unit of analysis and data collection. This chapter 4 went on to give insight on the research propositions of the case study through collecting and documenting of the data as per the proposed research questions. Following the adopted research design methodology strategy and in effort to strengthen the internal validity of the study the data that was collected was linked to the propositions of the study.

The following Chapter 5 will report on and interpret the empirical findings of the study as guided by the primary and secondary data. Then based on the findings of the empirical evidence recommendations will be tendered.
CHAPTER 5

SUMMARY, SUMMARY AND RECOMMENDATIONS

5. INTRODUCTION

The objective of a descriptive case study research is to report on the phenomena under study and will be restricted to only describing phenomena as they are observed by the researcher relevant to the research propositions (Yin, 2014). This was a case study research on the perceived success of sustainable bus operating ventures operating in the NMB. There were a number of instruments employed in effort to test the propositions of the study and towards finding an answer to the research question of this case study.

This chapter 5 will address RQ10, which relates to the Summary that can be drawn from the research findings. The empirical evidence gathered will be interpreted herein and recommendations made guided by the propositions. Lastly, this chapter will conclude with proposals for future research as well as general Summary.

5.1. SUMMARY

This case study set out to establish the need for sustainability considerations to form part of planning in public passenger transport ventures and the role that these sustainability considerations can play towards the competitiveness of these public transport bus ventures in the market. Hence, the main research problem as articulated in chapter 1 of this study as follows:

*Because of increasing growth in the demand for public passenger bus transport services in Nelson Mandela Bay, bus-operating ventures are increasingly facing a challenge of designing, implementing and monitoring of sustainable operations management practices, which are cost effective, increase accessibility, address key environmental, regulatory and socio-economic developmental requirements.*
That the main research problem that was stated above was developed into a primary research question stated as: *How to develop a sustainable public passenger transport bus venture in the Nelson Mandela Bay to better connect people, places goods and services?*

In the process of addressing the research problem there were areas of interest to the researcher that were identified as: the regulatory environment and natural environment; accessibility; transport stakeholders and driver behaviour.

Chapter 2 of this research effort consisted of an integrative review of literature where the body of the review attempted to summarize literature currently available on public passenger transport.

The literature review considered a combination of literature from various social science studies with the focus of developing an in-depth description and analysis of the case and related phenomena. The objective was to unearth the factors from literature that influence the success of bus operating ventures and then test these factors.

The primary research objective of this case study research was given in chapter 1 which was: *to investigate public passenger transport bus ventures operations management practices and factors that influence the success of bus ventures in the Nelson Mandela Bay in response to the projected growth in demand for sustainable public passenger bus transport.*

Secondary research objectives were formulated which in turn supported the primary objective of the case study. These secondary research objectives are given below under table 5.1.

The dependent variable was given as: The *perceived success of sustainable bus operating ventures*: There was a total of seven independent variables that were identified which could possibly have an influence on the dependent variable and these were: *Improved accessibility, economic growth, personnel development, regulatory environment, protecting the natural environment, protecting stakeholder interests.*

In the previous chapter of this study effort, chapter four the significant relationships between these variables were presented. Having illustrated these relationships chapter four went on to empirically test these relationships in so doing achieving the primary research objective and secondary research objectives - one to seven of this research effort.
| RO1 | A detailed analysis of the public passenger transport bus operations in Nelson Mandela Bay to determine whether there is a need for sustainability considerations for operators in South Africa and globally. |
| RO2 | An investigation into the impact of public passenger transport bus operators on the natural environment where operators conduct their business. |
| RO3 | An investigation into the impact of public passenger transport bus operators on the socio-economic environment within which operators work. |
| RO4 | Detailed interviews and filling out questionnaires with relevant stakeholders in the public passenger bus transport sector in the Nelson Mandela Bay. |
| RO5 | An investigation into the regulatory environment that governs public passenger bus transport operations. |
| RO6 | An investigation into impact of private vehicle use. |
| RO7 | A detailed analysis of the data collected and linking of this data to the research study propositions |
| RO8 | An interpretation and discussion of the results as well as recommendations based on the findings. |

Table 5.1. Secondary research objectives achieved

5.2. SUMMARYS FROM THE RESEARCH METHODOLOGY

This study employed the case study research approach, which was based on the qualitative research paradigm and accordingly the interpretivist epistemological position. As such, this allowed for in-depth description and analysis of the case and related phenomena in real world context. In an effort to test the propositions put forth, semi-structured interviews were conducted. Purposive sampling was employed to select the participants and sources of data based on their envisaged relevance to the study. The respondents that participated in the interviews included the owners and managers of the following bus operating ventures; Blunden Coach Tours Mr. - Shawn Blunden, Ntando Travel and Tours - Mr. Ayanda Ntando, Williams Coaches - Mr. F Williams, Van Rensburg Shuttles and Tours - Manager Ms Shane Kilian. Interviews were also conducted with relevant stakeholders Mr. T Chuene Marketing - Manager Nelson Mandela Bay Tourism. Mr. Z Kele - Director Transport planning: Engineering, Mr M Siwa – Regional Manager Dept. of Transport Eastern Cape.
The interviews noted above were initiated, conducted and documented by the researcher. As noted previously each interview was considered as a unit of analysis within a single case context of the Nelson Mandela Bay public passenger transport bus-operating ventures.

To adequately address concerns pertaining to validity rich data was collected during the research process through in-depth interviews. The respondents could be validated during the interview process through voice recording. Further, in effort to reduce the likely probability of misinterpretation of issues the researcher adopted semi-structured interview strategy. The semi-structured interview strategy is such that it allowed the researcher to ask clarifying questions during the interviews. The researcher used the pattern matching technique to link the data collected to the propositions and subsequently confirm the independent variables as criteria towards sustainable bus operating ventures in the Nelson Mandela Bay.

Reliability concerns were addressed as the second consideration towards strengthening the credibility of the research findings through the application of a multiple unit of analysis. The research questions were well articulated explained and could be linked back to the features of the research effort. As such, the raw data collected from the interviews touched on similar areas as was predicted and subsequently expected by the researcher. As such forming a notable relative pattern of the respondents’ accounts. The data collected was organised and a database produced which can be referred to in table 4.

5.3. CASE STUDY RESEARCH PROPOSITIONS

Because of increasing growth in the demand for public passenger bus transport services in Nelson Mandela Bay, bus-operating ventures are increasingly facing a challenge of designing, implementing and monitoring of sustainable operations management practices, which are cost effective, increase accessibility, address key environmental, regulatory and socio-economic developmental requirements.

The below given case study research propositions were tested:

P1: There is a positive relationship between protecting the natural environment and perceived success of sustainable bus ventures

P2: There is a positive relationship between taking care of stakeholder interests and perceived success of sustainable bus ventures
P3: There is a positive relationship between limiting of private car use and perceived success of sustainable bus operating ventures

P4: There is a positive relationship between economic growth and perceived success of sustainable bus operating ventures

P5: There is a positive relationship between personnel development and perceived success of sustainable bus operating ventures

P6: There is a positive relationship between the regulatory environment and perceived success of sustainable bus operating ventures

P7: There is a positive relationship between improved accessibility and perceived success of sustainable bus operators

The empirical evidence collected resulted in the acceptance or decline of the propositions made as indicated on the below Table 5.2.

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Significant / Non-significant</th>
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<tbody>
<tr>
<td>There is a positive relationship between protecting the natural environment and perceived success of sustainable bus ventures</td>
<td>Significant</td>
</tr>
<tr>
<td>There is a positive relationship between taking care of stakeholder interests and perceived success of sustainable bus ventures</td>
<td>Significant</td>
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<tr>
<td>There is a positive relationship between limiting of private vehicle use and perceived success of sustainable bus operating ventures</td>
<td>Significant</td>
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<tr>
<td>There is a positive relationship between economic growth and perceived success of sustainable bus operating ventures</td>
<td>Significant</td>
</tr>
<tr>
<td>There is a positive relationship between personnel development and perceived success of sustainable bus operating ventures</td>
<td>Significant</td>
</tr>
<tr>
<td>There is a positive relationship between the regulatory environment and perceived success of sustainable bus operating ventures</td>
<td>Significant</td>
</tr>
<tr>
<td>There is a positive relationship between improved accessibility and perceived success of sustainable bus operators</td>
<td>Significant</td>
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</tbody>
</table>

(Source: Researchers own contribution, 2015)
5.4. INTERPRETATION AND SUMMARY OF THE RESEARCH PROBLEM AND QUESTIONS

The identified factors that have an influence on the success of sustainable bus operating ventures in the Nelson Mandela Bay formed the foundation of the research problem. The limited academic research on the success of sustainable bus operating ventures with a focus in the Nelson Mandela Bay context informed the basis of the research gap for this study.

<table>
<thead>
<tr>
<th>Table 5.3. Interpretation and summary of the secondary research questions</th>
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<tbody>
<tr>
<td><strong>RQ1</strong></td>
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<td><strong>RQ3</strong></td>
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<td>RQ10</td>
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<td>RQ11</td>
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</table>
The aim of this research effort was to address the factors that influence the establishment of sustainable bus operating ventures in the Nelson Mandela Bay. These factors were then identified and documented in the previous chapter four of this study. The relationship between the factors perceived to have a significant impact on the variables are duly summarised in table 5.1. The secondary research questions of this study are answered and recorded in the preceding Table 5.2.

The below section will be a discussion of the findings that address the propositions which are documented in table 5.1. The relationships between each of the variables will be interpreted and recommendations will be tendered as guided by the research problem and supplementary research questions.

5.5. THE DEPENDENT VARIABLE: THE PERCEIVED SUCCESS OF SUSTAINABLE BUS OPERATING VENTURES.

5.5.1. Protecting the natural environment

In the case study, the natural environment is accepted to include the quality of air, water, general appearance and noise levels. Protecting of the natural environment is a strategic consideration and may increase the competitiveness of bus operating ventures in the market. The increase in household incomes that has gone hand in hand with economic growth has resulted in increased congestion and exacerbated negative environmental impacts. Although demand for public transport is projected to continue growing, studies on the possible future of public transport show a reduced impact on the environment. This as the sector will show less reliance on fossil fuels and increased dependence on renewable sources of energy.

*Therefore, it was established during the research that there is a significant relationship between protecting of the natural environment and the success of sustainable bus operating ventures in the Nelson Mandela Bay.*

5.5.2. Taking care of stakeholder interests

In the context of this study, stakeholders are accepted to be all those parties that have an interest in the public passenger transport sector. These stakeholders or parties with interest in the
transport sector are private operators such as taxis and bus ventures, government, users and the community. Potential political and economic pressures show towards a possible increase of conflict and tension between these stakeholders. It therefore is imperative for decision makers to continue to strengthen relations between these stakeholders. Although these stakeholders often present conflicting interests there remains a need to find common ground to prevent total collapse in relations and thus the sustainability of the public transport sector.

*Therefore, it was established during the research that there is a significant relationship between taking care of stakeholder interest and the success of sustainable bus operating ventures in the Nelson Mandela Bay.*

5.5.3. Limiting private vehicle use

Because of an increase in household income, sprawling human settlements on the outskirts of cities resulting in urban sprawl as well as the demand for increased flexibility by travellers there has been in increase in the number of private vehicles on the road. The impact of increased private vehicle preference by travellers in place of public passenger bus transport has exaggerated negative impacts of transport activities to the environment, economically and socially. Private vehicles are the main contributors to congestion on the roads. This congestion in turn encourages wide-ranging negative social, economic and environmental impacts such as degradation of the natural environment, noise pollution, reduced quality of life, reduced economic productivity, increased road accidents and CO2 emissions.

*Therefore, it was established during the research that there is a significant relationship between limiting the use of private vehicles on the road and the success of sustainable bus operating ventures in the Nelson Mandela Bay.*

5.5.4. Economic growth

Sustainable economic growth here is accepted to mean meeting the economic needs of the current and next generations without compromising the ecological, social and economic environments. There is a symbiotic relationship noted in the study between economic growth and the growth of the public passenger bus transport sector. The growth of bus ventures is intractably linked to other sectors and facets of the economic environment and vice versa.
Therefore, it was established during the research that there is a significant relationship between economic growth and the success of sustainable bus operating ventures in the Nelson Mandela Bay.

5.5.5. Personnel development

Personnel development in this case study describes the extent to which the staff of the bus operating ventures received training, education and upskilling. In public passenger bus transport often the focus will be on capacity building training programs as well as driver behaviour in effort to enhance user experience and reduce the negative impacts of transport operations in bus transport.

Therefore, it was established during the research that there is a significant relationship between development of personnel through training and upskilling and the success of sustainable bus operating ventures in the Nelson Mandela Bay.

5.5.6. Regulatory environment

For the purpose of this case study the regulatory environment incorporates more than just satisfying the regulatory requirements to include policies on settlement plans, densification strategies, mixed land use which is within distance to major public transport corridor nodes, facilities or interchanges.

Therefore, it was established during the research that there is a significant relationship between a progressive regulatory environment and the success of sustainable bus operating ventures in the Nelson Mandela Bay.

5.5.7. Improved accessibility

Accessibility for the purpose of this case study is accepted to mean better connecting of people with places goods and services. Accessibility is a concept that comprehensively considers route planning, innovative payment solutions, ticketing solutions, land use, to allow transport to be more available to more people. Thanks to the advancement of technology autonomous vehicles are no longer considered likely or and wild cards but a tangible reality with companies like
google leading developments in this area. Real time quality information with advancements in technology are further expected to optimize traffic flow, reduce congestion, on the road and related negative impacts into the future.

*Therefore, it was established during the research that there is a significant relationship between improved accessibility and the success of sustainable bus operating ventures in the Nelson Mandela Bay.*

**5.6. SUGGESTIONS FOR FUTURE RESEARCH:**

South Africa is a developing country confronted with various challenges. The public passenger transport sector and supporting transport infrastructure when compared to the more developed countries will require major investment from government and the private sector. Bus operating ventures will have a critical role to play in the progress towards seamless public passenger transport services. In the public passenger, transport sector the researcher proposes that opportunity for future research is in the development of a training programme for sustainable bus operating ventures.

**5.7. GENERAL CONCLUDING REMARKS**

The case study revealed that a safe, reliable and affordable public transport system is synonymous with development and promotes a better life for all. This as bus operating ventures enable access to basic essential services such as schools, hospitals, shopping centres and places of work. Although there is no real alternative to mass public transportation such as the bus and train in the plausible future. Conventional fuel motorised vehicles will be replaced by lighter more efficient vehicles which use a mix of renewable fuels for vehicles that still use internal combustion engines. There is also forecasted a significant introduction of vehicles that use electricity and hydrogen fuel cells. There is further emerging consensus that people are becoming increasingly aware of the actual costs of unsustainable transportation towards the environment as well as human beings. Although a material cognitive dissonance between attitude and behaviour persists, people are more than ever before willing to adapt their behaviour towards a more sustainable life style. Sharing systems and collaborative consumption is on the rise particularly in the more developed countries. What this means is that the demand for public transport is forecasted to continue to grow as peoples preference for
private motorised vehicles is moving towards more shared, sustainable and integrated modes of transport that will include walking and public bike-sharing facilities.

There is a need for a novel pragmatic approach to transport planning as articulated by social scientists in the debate on transport planning policy outlook. That whilst transport engineers are arguably obsessed with the technocratic approach to transport planning. As with other choices that humans make mobility decisions are entrenched in symbolic and social values. Transport therefore must be viewed as more than simply moving from point to point to include symbolic and emotional issues which are a manifestation of the self. Social relevance and individual tastes that are observed to be moving towards more sustainable and alternative modes of transportation which are set to revolutionise the automotive sector, as the sector attempts to remain relevant. This as technological achievement in transport are further framed within a broader picture that incorporates societal attitudes and beliefs.

This chapter five addressed research question eleven as well as research objective eight. The findings of the research effort were interpreted and tested against the propositions and the researcher tendered the relevant recommendations. This study added value through identifying factors that promote sustainable bus operating ventures in the Nelson Mandela Bay.
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ANNEXURES

Ethics clearance form

Permission to submit form

Declaration for the receipt of a manuscript / Article form to be noted at FPGSC Meeting