

THE REVIEW OF THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

by

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ABSTRACT

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The development of a specific sector could enhance a country's economic growth by facilitating its global positioning. However, some sectors may require government support to enable meaningful economic contribution. The South African government has invested significant amounts of tax revenues in cultivating the potential of the South African automotive industry. Since 1995, support has been given to the industry via the Motor Industry Development Programme (MIDP).

The MIDP will be concluding in 2012, and will be replaced by the Automotive Production and Development Programme (APDP). The APDP will extend support to the South African automotive industry until 2020. The question is whether the revised framework of government's support to the automotive industry will improve its achievement of policy objectives.

The present study aims to answer that question by measuring the performance of the MIDP and the anticipated performance of the APDP against formulated critical success factors (CSFs).

In order to develop the specific CSFs, it was necessary to identify the objectives for both programmes. This was to facilitate the formulation of common benchmarks to enhance the comparability of research results. A knowledge base in the form of a literature review was created focusing on the objectives, policy instruments and performance of both the MIDP and the APDP. A quantitative approach was followed in executing the benchmarking process. A survey was chosen as the data collection instrument for obtaining the perceptions by the South African automotive industry stakeholders of the performance by the MIDP and the anticipated performance by the APDP.

Research results indicated that most of the MIDP's objectives have been achieved. Despite some uncertainty concerning the anticipated performance of the APDP, it appears that there is an expectation that the APDP will continue building on the MIDP's performance and that it has been successfully transformed into a World Trade Organization compliant programme.

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CHAPTER 1

1 BACKGROUND AND INTRODUCTION

1.1 INTRODUCTION

The motor industry started its South African journey in the 1920s, when the first motor assembly plants were established in the country (Kaplan, 2003:15). High import tariffs encouraged a highly inward-orientated industry, resulting in the production of a large number of low volume vehicle brands and models (Black & Mitchell, 2002:1-2).

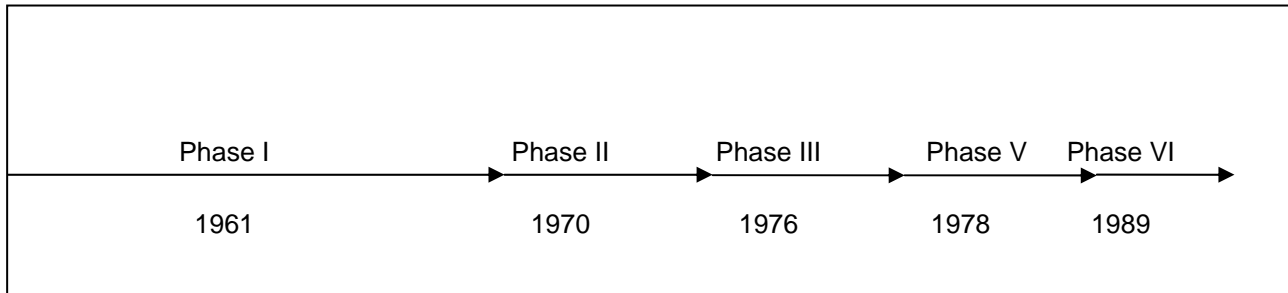
Low volume vehicle production resulted in high unit costs (Barnes, Kaplinsky & Morris, 2003:5; Black & Bhanisi, 2007:133). This can be explained according to the concept known as economies of scale. Economies of scale are said to be achieved when the average unit cost of goods or services decreases owing to an increase in the scale of production (Ammer & Ammer, 1977:375).

Apart from the fact that the industry was inwardly-orientated, a profusion of other issues, such as poor-quality products, outdated products and inefficient supplier chains arose. The high production unit costs meant that consumers had to pay exorbitant sums for the privilege of driving a motor vehicle (Barnes & Kaplinsky, 2000:799-801; Flatters, 2005:8-14; Kaplan, 2003:21). It also meant that local motor assembly plants did not have to compete with other internationally competitive plants. Consumers had no other choice but to buy from the available range of products. The only competition was between different vehicle brands and models. Even though motor vehicles were assembled locally, most of the components used in the assembly of these vehicles were imported (Black & Mitchell, 2002:4-6).

By 1960, a shortage of foreign exchange was increasingly constraining the South African economy. The local content of locally assembled motor vehicles amounted to only 20%. Industrial policy was altered to address this issue by imposing local content programmes. Phase I of these programmes was initiated in 1961 and evolved to Phase V by 1987

(Black & Mitchell, 2002:1-2). Figure 1 depicts the timeline of key amendments made to these local content requirements.

Figure 1: Timeline of major amendments to the automotive industry local content programmes



Source: Adapted from Black and Mitchell (2002:1 & 4).

As a penalty for not meeting the local content requirements, assemblers would be subjected to prohibitively high import tariffs on components. This encouraged the emergence of the local components market (Black & Mitchell, 2002:2).

The main objective of all these programmes was to facilitate obtaining economies of scale (Black & Bhanisi, 2007:134-135). In order to successfully meet this objective, it meant that assemblers had to increase production volumes. This would require them to increase their production capacity or to reduce the number of models produced and focus exclusively on the production of a few models (Ammer & Ammer, 1977:375; Black & Bhanisi, 2007:136; Greenwald, 1982:327). The creators of these programmes were aiming for the latter result (Black & Bhanisi, 2007:136). However, the opposite resulted, as the number of assemblers increased from 8 to 13 between 1961 and 1976, while the number of models increased from 24 to 39 for the same period (Black & Mitchell, 2002:1).

In 1989 automotive policy shifted focus from import substitution to the promotion of exports (Black & Mitchell, 2002:4). Phase VI was aimed at easing foreign currency difficulties by addressing fiscal deficits by means of rationalisation of the industry. During this phase, exports of components counted as local content. In addition, local content was required to be only 50%, as opposed to 66% during Phase V (Black & Mitchell, 2002:5). In encouraging exports, a market has to be removed from its safe haven of protection and exposed to the rest of the world (Black & Bhanisi, 2007:137). This was a formidable task

considering that the South African automotive industry had been isolated since the 1980s on account of Apartheid-driven sanctions (Barnes *et al.*, 2003:3; Black, 2002:2). But despite this prior isolation, exports of components increased rapidly. However, exports of the completely built-up (CBU) sector did not respond well initially (Black & Mitchell, 2002:5).

Economies of scale were still not achieved during Phase VI and low scales of production and high unit costs remained (Black & Bhanisi, 2007:135-136). The array of domestic models increased further from Phase V, and automotive policy failed once again to encourage specialisation (Black & Mitchell, 2002:1-6).

The disappointing results of Phase VI resulted in the creation of the Motor Industry Development Programme (MIDP) (Barnes *et al.*, 2003:5). This programme has joined its predecessors in a circle of controversy as an expensive programme trying to elevate a South African industry with the potential to reach new levels (Flatters, 2005:1). The original intention of the MIDP was to facilitate the creation of an export-orientated automotive industry (Barnes & Kaplinsky, 2000:797-799). According to Flatters (2005:14-15), a sound conclusion on whether or not the MIDP achieved all its set objectives has not been reached, owing to the lack of data generated by feasibility studies and other cost-benefit analyses available in the public domain.

The MIDP will be concluding in 2012. Stakeholders indicated that, in order to sustain and expand the automotive industry's contribution to the South African economy, support would be required beyond 2012. This has resulted in the unveiling of the new Automotive Production and Development Programme (APDP) (Barnes & Black, 2008; Creamer, 2008). This new programme will be operational from 2013 until 2020. The Department of Trade and Industry (DTI) indicated that they wanted to design a programme that would result in the alignment of this incentive with South Africa's World Trade Organization (WTO) commitments and South Africa's National Industrial Policy Framework (NIPF), as well as achieving vehicle production levels of 1.2 million units by 2020 (Creamer, 2008).

It is evident from the above overview that the evolvement of automotive policy is a tangled web of complexities. Policies cannot foresee beneficiaries' actions in response to the

incentive on offer. In addition, such policies must redeem a local market in the context of a globalised economy (Black & Bhanisi, 2007:132, 150-151).

1.2 PROBLEM STATEMENT

Subsidisation of a certain sector of the economy is a very controversial issue. If it is not done carefully, it is like pouring oil into the ocean and hoping it will have no effect on the surrounding waters (Business Day, 2008; Creamer, 2008; Flatters, 2009; Furlonger, 2007). The reason why sector subsidisation remains controversial is best summed up in the following question: "... [W]hat opportunities will be lost to us as a result of the decision to opt for the subsidisation of car manufacturing, rather than, say, cheaper education?" (Business Day, 2008).

Although sector subsidising is a controversial issue, globalisation has required countries to become internationally competitive, motivating governments to award sector subsidies (Barnes & Kaplinsky, 2000:797; Lamprecht, 2006:1-4).

Rogers (2009) stated that "If we are to attract private investment, if we are to be able to make the legislature feel the moneys from taxpayers are being used properly, we must be ever vigilant of the duty to efficiently use all funds we receive". Taxpayers, like investors, would like to see their monies invested wisely. Hence, it is important to understand whether the stakeholders are of the opinion that the APDP has been amended appropriately.

Since its implementation in 1995, the MIDP has been a topic of discussion for many international organisations (Drabek & Laird, 1994; Omer, 2001; Organisation for Economic Co-operation and Development, 2008:78-79; United Nations Industrial Development Organization, 2009). While research has been conducted to evaluate the performance of the MIDP (Flatters, 2005; Flatters & Netshitomboni, 2006), the research did not explicitly assess the performance of the MIDP against its objectives as formulated by the DTI. Further, no research is available on whether stakeholders are of the opinion that the APDP will achieve its objectives as formulated by the DTI. This can be attributed mainly to the

fact that the required regulatory amendments for the APDP have still not been finalised at the time of writing (Anon., 2009a).

1.3 RESEARCH OBJECTIVES

The objectives of the present study are to determine whether:

- The MIDP has achieved its objectives as formulated by the DTI; and
- Stakeholders are of the opinion that the APDP will achieve its objectives as formulated by the DTI.

The study will be guided by the following specific research objectives:

- To provide an overview of the objectives, policy instruments and implementation results of the MIDP by carrying out a literature review;
- To provide an overview of the objectives and policy instruments of the APDP by carrying out a literature review;
- To determine whether stakeholders are of the opinion that the MIDP has achieved its objectives as formulated by the DTI;
- To determine whether stakeholders are of the opinion that the APDP will achieve its objectives as formulated by the DTI.

1.4 DELIMITATIONS

The delimitations of the present study are as follows:

- Various automotive-related programmes and projects have been or will be implemented by various South African governmental structures. Examples range widely from international trade agreements to local government interventions, and include the implementation of the African Growth and Opportunity Act of 2000, the Gauteng Automotive Cluster project, the Plate Glass upgrade - Struandale glass processing plant project and the Uitenhage Automotive Supplier Park project (Mbendi.com, 2010a; Mbendi.com, 2010b). However, the present study was focused only at the national government level and on the MIDP and the APDP;

- The literature review focused on the MIDP policy instrument portfolio obtained from the 2002 review (refer to section 2.1);
- The automotive industry in South Africa can be divided into the manufacturing of light motor vehicles (which includes passenger vehicles and light commercial vehicles), and medium and heavy commercial vehicles. The present study focused only on the light motor vehicle class as it represents the greater part of the production volume and value in the industry (Organisation Internationale des Constructeurs d'Automobiles, 2009); and
- Although the Automotive Investment Scheme, one of the policy instruments of the APDP, became effective from 1 July 2009, an analysis of its implementation results was not included in the scope of the present study, as it was still in progress at the time of writing (refer to section 3.5 and 5.3.3).

1.5 ABBREVIATIONS

For the purposes of the present study the following meanings can be attributed to abbreviations used (refer to Table 1):

Table 1: Abbreviations used in this document

Abbreviation	Meaning
AIDC	Automotive Industry Development Centre
AIEC	Automotive Industry Export Council
AIS	Automotive Investment Scheme
APDP	Automotive Production and Development Programme
BBBEE	Broad Based Black Economic Empowerment
CBU	Completely Built-Up
CCSA	Competition Commission of South Africa
CCSI	Competitive Customer Satisfaction Index
CKD	Completely Knocked Down
CPI	Consumer Price Index
CSF	Critical Success Factor
DFA	Duty Free Allowance
DTI	Department of Trade and Industry
EU	European Union
FOB	Free On Board
GATT	General Agreement on Trade and Tariffs

Abbreviation	Meaning
GMSA	General Motors South Africa
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
IATF	International Automotive Task Force
IDC	Industrial Development Corporation
IEC	Import-Export Complementation
IPAP	Industrial Policy Action Plan
IRCC	Import Rebate Credit Certificate
ISO	International Organization for Standardization
IT	Information Technology
ITAC	International Trade and Administration Commission
JAMA	Japan Automobile Manufacturers Association
MIDP	Motor Industry Development Programme
NAACAM	National Automotive Component and Allied Manufacturers
NAAMSA	National Association of Automobile Manufacturers of South Africa
NIPF	National Industrial Policy Framework
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OHSAS	Occupational Health and Safety Assessment Series
OICA	Organisation Internationale des Constructeurs d'Automobiles
PAA	Productive Asset Allowance
PI	Production Incentive
PP100	Problems Per 100
SAABC	South African Automotive Benchmarking Club
SABS	South African Bureau of Standards
SARS	South African Revenue Service
TISA	Trade and Investment South Africa
TS	Technical Standard
VAA	Value Add Allowance
VAT	Value Added Tax
VWSA	Volkswagen South Africa
WTO	World Trade Organization

Appendix A provides a list of definitions of key terms relevant to the present study.

1.6 DISSERTATION STRUCTURE

The structure of this dissertation will be guided by the research objectives and will be set out as follows:

1.6.1 Chapter 1

This chapter provides a background to the present study and also sets out the research objectives and delimitations of the study. It indicates abbreviations to be used throughout the study.

1.6.2 Chapter 2

The purpose of Chapter 2 is to evaluate the implementation results of the MIDP. This is achieved by first identifying the objectives of the MIDP and then formulating critical success factors, which are used in evaluating the implementation results of the MIDP.

The chapter continues by providing an overview of the policy instruments included in the MIDP. The chapter concludes by analysing the implementation results of the MIDP with reference to the established critical success factors.

1.6.3 Chapter 3

Chapter 3 provides an overview of the research design and the methods employed to achieve the objectives of the present study.

1.6.4 Chapter 4

Chapter 4 provides a description of the demographics of the participating stakeholders in the present study.

1.6.5 Chapter 5

Chapter 5 gives an overview of the objectives and policy instruments of the APDP to assist in contextualising the research results.

1.6.6 Chapter 6

Chapter 6 discusses whether or not the hypotheses of the present study have been satisfied, and concludes with a summary of the research results.

CHAPTER 2

2 THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

2.1 INTRODUCTION

The Motor Industry Development Programme (MIDP) was introduced in September 1995 to assist the automotive industry in becoming globally integrated and subsequently to increase its competitiveness (DTI, 2003:10). Since its implementation in 1995, the MIDP has been reviewed twice (Flatters, 2005:2). It was first revised in 1999, resulting in the extension of its duration from 2002 to 2007. A second review during 2002 extended the programme's duration until 2012 (DTI, 2003:11; Flatters, 2005:14). The most notable differences from its predecessors were the removal of the local content requirements on vehicles and the reduction of import tariffs, which had exceeded 100% (Flatters, 2005:2). For purposes of this study, the performance of the MIDP since its inception was evaluated with the focus on the policy instruments of the MIDP as determined by the 2002 review (refer to section 1.4).

The National Industrial Policy Framework (NIPF) was adopted in January 2007 (DTI, 2010b:3), while the MIDP was introduced during September 1995 (DTI, 2003:10). Even though the MIDP was designed, implemented and reviewed before the adoption of the NIPF, the automotive industry was included in both the NIPF and the Industrial Policy Action Plan (IPAP) as a sector to be developed (DTI, 2010b:3, 54-55). The Department of Trade and Industry's (DTI's) vision for the automotive industry is "to raise volumes to 1.2 million vehicles per annum by 2020 and substantially diversify and deepen the components supply chain" (DTI, 2010b:54). The Automotive Production and Development Programme (APDP) is the product of the third review of the MIDP to more closely align automotive policy with the objectives and principles of the NIPF and the IPAP.

To facilitate measurement of the implementation results of the MIDP, the objectives of the MIDP must first be stated in order to formulate suitable critical success factors (CSFs). The next section will define these concepts. It will formulate the CSFs with reference to the

objectives of the MIDP. The formulated CSFs will then be used in subsequent sections as the measurement benchmark for the MIDP.

The objectives of the present study are to determine whether the MIDP has achieved its objectives as formulated by the DTI and whether stakeholders are of the opinion that the APDP will achieve its objectives as formulated by the DTI. In order to successfully achieve these objectives, it is necessary to first establish what specific CSFs have impacted the implementation results for the MIDP.

2.2 THE OBJECTIVES OF THE MIDP

An objective can be broadly defined as being the purpose to be achieved within a specific period by using available resources (BusinessDictionary.com, 2010e). CSFs, on the other hand, can be defined as those conditions which impact on the efficiency and effectiveness of a programme and which impact the achievement of the overall objectives (BusinessDictionary.com, 2010b). Thus, in order to determine the CSFs, the objectives of the programme must first be determined. The CSFs so determined will be used as a benchmark for measuring the performance of the MIDP and subsequently of stakeholders' perceptions. A benchmark can be defined as a set of standards against which performance can be evaluated. Benchmarks can be determined with reference to certain legislative objectives (BusinessDictionary.com, 2010a).

The DTI (2003:10) outlines the objectives of the MIDP as being the development of “an internationally competitive and growing automotive industry that would be able to:

- Provide high-quality, affordable vehicles and components to the domestic and international markets (“first objective”) (refer to 2.2.1);
- Provide sustainable employment through increased production (“second objective”) (refer to 2.2.2); and
- Make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance (“third objective”) (refer to 2.2.3).”

The DTI (2003:10) indicated that the above objectives will be achieved by:

- “Encouraging a phased integration into the global automotive industry (refer to 2.2.4);
- Increasing the volume and scale of production by the expansion of exports and gradual rationalisation of models produced domestically (refer to 2.2.3); and
- Encouraging the modernisation and upgrading of the automotive industry in order to promote higher productivity and facilitate the global integration process (refer to 2.2.3).”

The major policy instruments to be used in achieving the objectives of the MIDP are (DTI, 2003:10):

- “A gradual and continuous reduction in tariff protection so as to expose the industry to greater international competition;
- The encouragement of higher volumes and a greater degree of specialisation by allowing exporting firms to earn rebates of automotive import duties; and
- The introduction of a range of incentives designed to upgrade the capacity of the industry in all spheres.”

The above objectives must now be formulated as CSFs to establish a benchmark for both performance evaluation and stakeholder perceptions. To achieve this, each of the objectives of the MIDP will be addressed separately. The CSFs will be developed with reference to the report “Current developments in the automotive industry - September 2003”, issued by the DTI.

2.2.1 Provide high-quality, affordable vehicles and components to the domestic and international markets

The first objective of the MIDP is to “provide high-quality, affordable vehicles and components to the domestic and international markets” (DTI, 2003:10). For purposes of this study this objective will be sub-divided into:

1. Quality (refer to 2.2.1.1)
 - a. Quality of vehicles;
 - b. Quality of components; and

2. Affordability (refer to 2.2.1.2)
 - a. Affordability of vehicles;
 - b. Affordability of components.

The following sections will formulate the CSFs for the sub-objectives indicated above. Prior to such formulation, the relevant sections will first define the concepts of quality and affordability.

2.2.1.1 High quality motor vehicles and components

According to Garvin (1984:25), there are five approaches to defining quality. These five approaches will be discussed below and the *most* relevant approach for defining quality in the automotive industry will be identified.

According to the *transcendent approach*, quality is a universal, recognisable measure of uncompromising excellence. However, this approach dictates that quality is not a concept that can be formalised into one definition, but is learnt by experience. Experience is developed by exposure to a succession of objects displaying the same attributes, creating an association (Garvin, 1984:25).

This approach of “quality is excellence” developed out of the ideologies of Greek philosophers like Socrates, Plato and Aristotle (Reeves & Bednar, 1994:420). A definition of quality based on excellence cannot be easily applied by researchers (Reeves & Bednar, 1994:428).

Although experience may create trust in certain automotive brands among consumers, the objective of this study is not to define quality with reference to certain automotive brands, but to the automotive industry as a whole. This approach is therefore not suitable for use in the present study. In addition, it provides an unstable measure of defining quality, as trust

in a certain automotive brand can be impaired. This is illustrated by the recent recalls of defective vehicles because of manufacturing defects (refer to section 2.4.1.3).

Under the *product-based approach*, the concept of quality is a measurable variable which relates directly to the price of the product, that is, the higher the quality of the ingredients/components included in the end product, the higher the price of the product (Garvin, 1984:25-27).

Variations in quality are believed to be owing to differences between the ingredients and attributes of products. An important assumption in this approach is that the attributes under consideration must be thought preferable by almost all the buyers of the relevant product. A benefit of this approach is that because quality is viewed as measurable, it can be determined objectively (Garvin, 1984:25-27).

With the emergence of economies of scale, the unit price of vehicles produced on a large scale decreased. The decrease in the unit price does not necessarily indicate a decrease in the quality of the vehicle, but rather an increase in the production efficiency of the manufacturer. This approach is thus not suitable for use in the present study.

The *value-based approach* defines quality in terms of cost and prices. It therefore assumes that an expensive product, irrespective of the quality of its ingredients, cannot also be a quality product as it will not have a sufficient market, the price being unacceptable. The equation of quality with price “lacks well-defined limits and is difficult to apply in practice” (Garvin, 1984:28).

Equating quality with value is based on the concept of bargain-hunting, where quality is perceived to be the acquisition of a product at a reasonable price, as opposed to acquiring a product that is better than similar products on the market. Price is thus used as the most important determinant of quality (Reeves & Bednar, 1994:421).

However, this approach ignores the fact that market decisions rely on both price and quality (Reeves & Bednar, 1994:429). Furthermore, it is difficult to determine which

components are important and what weights consumers assign to the respective components (Reeves & Bednar, 1994:430).

In general, the value of motor vehicles increases as a result of the increase in the specification level. The cost of vehicles and components may therefore increase because of an increase in the specification level and may have no bearing on the quality of the vehicle. The value-based approach would therefore not be suitable for the present study. In addition, the price of an imported motor vehicle may increase or decrease according to fluctuations in the foreign exchange rate. The fact that the motor vehicle may be less expensive during a certain time of year on account of lower exchange rates does not necessarily mean that it would give the consumer better value for money.

The *user-based approach* takes into account the fact that consumers have different wants and needs, and regard those products that best satisfy them as being of the highest quality. Consumers' quality preferences are used in designing a meaningful definition of quality (Garvin, 1984:27). A study conducted by Synovate (2005a:1) indicated that consumers' wants and needs differ according to the type of motor vehicle they prefer, and are also influenced by their financial means (refer to section 2.4.1.2). This approach is therefore suitable for the present study.

The *manufacturing-based approach* views quality as "conformance to requirements". A decrease in quality therefore occurs where there is a deviation from the set standard. Deviation or conformance is determined by the application of statistical techniques. This approach dictates that an increase in the level of quality results in a decrease in costs. This is based on the assumption that costs incurred in preventing defects before components are assembled into fully completed units reduces the costs for rework on defective units released into the market (Garvin, 1984:27-28).

This concept of quality was used extensively by Henry Ford. He recognised that, for the Ford Motor Company to produce motor vehicles on a large scale with consistent quality, a consistent measure or standard of quality had to be developed. "Accuracy in fixture and machine tools was the primary requirement for Ford's production engineers" (Reeves & Bednar, 1994:422).

Conformance to specifications leads to consistency, which is becoming increasingly important in the global environment. The driving force behind the specifications used as the standard is customer wants (Reeves & Bednar, 1994:431). The manufacturing-based approach follows a standard-based approach and is therefore suitable for the present study, as the automotive industry is regulated by various global quality standards (DTI, 2003:17).

According to Reeves & Bednar (1994:427), “no one definition of quality is best in every situation”. The following definitions of quality, according to the manufacturing and user-based approaches, will be used to formulate a definition of quality in the automotive industry for the present study:

- *The manufacturing-based approach:* The “strict and consistent adherence to measurable and verifiable standards to achieve uniformity of output that satisfies specific customer or user requirements” (BusinessDictionary.com, 2010g).
- *The manufacturing-based approach:* Quality is “conformance to *specification*” (Sebastianelli & Tamimi, 2002:446).
- *The user-based approach:* “...quality is realized *when customer satisfaction is maximized* because the product/service fits its intended use” (Sebastianelli & Tamimi, 2002:446).
- *The user-based approach:* “...quality lies in the eyes of the beholder and...the *customer or user is the ultimate quality judge*” (Saroja & Sujatha, Not dated: 2).

For purposes of the present study, quality will be defined in terms of how closely motor vehicles and components conform to international measurable and verifiable *standards*, while the *target consumer perceive certain attributes to be of high quality* when compared with other vehicles and components in the automotive market.

Based on the above discussion, the following CSFs can be formulated:

- *Higher-quality motor vehicles* (DTI, 2003:10); and
- *Higher-quality components* (DTI, 2003:10).

These CSFs make use of a comparative measure (higher instead of high), which deviates from the DTI-formulated objective, namely to “provide high-quality” vehicles and components (DTI, 2003:10). The researcher believes that the use of a comparative measure would enhance the survey process, as it is easier to express a comparative opinion than an absolute one.

2.2.1.2 Affordable motor vehicles and components

The second part of the first objective of the MIDP is to provide “affordable vehicles and components to the domestic and international markets” (DTI, 2003:10).

Affordable can be defined as follows:

- “That you have the *financial means* for” or “relatively *low in price*” (Thefreedictionary.com, 2010a);
- “*Low-cost, low-priced*” (Glossary.com, 2010);
- “That you have the *financial means* for” (Audioenglish.net, 2006);
- “Believed to be within one’s *financial means*” (Dictionary.reference.com, 2010a).

Based on the above, the key elements in defining “affordable” are:

- Financial means; and
- Low costs/prices.

In turn, financial means can be defined as:

- “Money, property, or other wealth” (Answers.com, 2010a);
- “...a method, instrument, or process which can be used...” (Dictionary.reverso.net, 2008); and
- “...resources or available wealth...” (Yourdictionary.com, 2009).

Low cost can be defined as:

- A price that is low enough to stimulate demand and which can be achieved via an increase in production (BusinessDictionary.com, 2010d); and
- “Purchasable *below the going price or the real value*” (Merriam-Webster.com, 2010a).

From the above, it is clear that whether motor vehicles or components will be perceived to be affordable can be determined only with reference to a specific measure. Affordability can therefore not be precisely defined, but must be interpreted with reference to the purchaser in question together with an appropriate benchmark.

2.2.1.2.1 Motor vehicles

The affordability of motor vehicles will be defined according to the viewpoint of South African and foreign consumers. The present study will consider only the initial purchase cost (excluding any motor or service plan-related costs) of the vehicle and will not include any consideration of the maintenance and service costs of the vehicle (running costs), as these do not form part of the manufacturing process and are therefore not included within the ambit of the MIDP. For purposes of the present study, any reference to “consumer(s)” will include original equipment manufacturers (OEMs).

Each consumer’s perception of what is affordable is bound to be different because of the varying levels of purchasing power. Purchasing power can be defined as “the value of a currency expressed as the amount of goods or services one unit of the currency can buy” (Thefreedictionary.com, 2010d). Purchasing power therefore represents a consumer’s financial means. An increase in the inflation rate, which is represented by the Consumer Price Index (CPI), results in a subsequent decrease in purchasing power (Thefreedictionary.com, 2010d). Based on the above discussion, the measure to be used in the present study for measuring the affordability of motor vehicles by South African consumers is the CPI.

To determine whether locally manufactured motor vehicles are more affordable than those manufactured elsewhere in the world, the present study will use the findings of available research performed in this regard.

The following CSF can be formulated:

- *More affordable motor vehicles* (DTI, 2003:10&44).

This CSF uses a comparative measure (*more affordable* instead of *affordable*) which deviates from the DTI-formulated objective, namely to “provide...affordable vehicles and components” (DTI, 2003:10). The researcher believes that the use of a comparative measure would enhance the survey process, as it is easier to express a comparative opinion than an absolute opinion.

2.2.1.2.2 Components

The cost of components is affected by various factors like labour, fuel, energy and steel costs, as well as the recovery of foreign exchange-related costs (DTI, 2003:44). Price is one of the factors against which the performance of component manufacturers is measured by OEMs (Barnes & Kaplinsky, 2000:805-806). In most instances, the decision to source components from South Africa rests with the foreign holding company of the relevant OEM (Black, 2002:4). The affordability of components is considered with reference to the main factors that affect their cost.

The following CSF can be formulated:

- *More affordable components* (DTI, 2003:10&44).

This CSF uses a comparative measure (*more affordable* instead of *affordable*) which deviates from the DTI-formulated objective, namely to “provide...affordable vehicles and components” (DTI, 2003:10). The researcher believes that the use of a comparative measure would enhance the survey process, as it is easier to express a comparative opinion than an absolute opinion.

2.2.2 Provide sustainable employment through increased production

The second objective of the MIDP is to “provide sustainable employment through increased production” (DTI, 2003:10). According to the DTI (2003:48), the “future of the automotive business in South Africa is dependent on its workforce...” However, the objective of the MIDP to improve the international competitiveness of the automotive industry requires increased automation of processes in order to secure global contracts. The process of automation results in an increase in productivity, but may also have the effect of decreasing employment, as employment is a function of production and productivity (DTI, 2003:48). There is therefore a link between employees’ productivity and the number of units produced. When productivity increases, an employee’s capacity to produce more units in less time is increased.

In order to counter the employment erosion brought about by improved productivity as a result of international requirements, the MIDP aims to create sustainable employment levels. The following CSFs can be formulated:

- *Sustainable employment levels* (DTI, 2003:10 & 48); and
- *Increase in local productivity* (DTI, 2003:10, 35 & 45-47).

2.2.3 Make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance

The third objective of the MIDP is, to “make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance” (DTI, 2003:10). For purposes of this study, this objective will be sub-divided into:

1. Increasing production (refer to 2.2.3.1); and
2. An improved sectoral trade balance (refer to 2.2.3.2).

2.2.3.1 Increasing production

South Africa’s economy “relies upon investment and domestic consumer demand” (DTI, 2003:32). Investment, production levels and local content are inter-dependent. An

increase in investment may result in an increase in production capacity, which may in turn result in an increase in the number of units produced. On the other hand, where state-of-the-art facilities are available for producing vehicles and components of the standard required internationally, there will be a greater incentive to produce locally. By making use of more locally produced components, there will be an increase in the level of local content in vehicles (Black & Bhanisi, 2007:144; Barnes & Morris, 2008:47, 51).

The MIDP aims to encourage specialisation in a few models to facilitate the attainment of economies of scale. This can be termed “model rationalisation”. The objective of rationalisation is to increase both the number of units produced and the level of local content of these units (DTI, 2003:45). In addition, the establishment of South Africa as an international manufacturer of motor vehicles requires sophisticated logistical systems, supply chain systems of a high standard, comparative advantage, high productivity and innovation (DTI, 2003:45-46).

For the purpose of the present study, because of the inter-dependence between investments, production volumes and local content, the following measures established by the DTI (2003:10) towards attaining the objective of improved production will be attributed to the objective under discussion:

- “Increasing the volume and scale of production by the expansion of exports and gradual rationalisation of models produced domestically”; and
- “Encouraging the modernisation and upgrading of the automotive industry in order to promote higher productivity and facilitate the global integration process”.

The CSFs, with reference to both the objective and the measures indicated above, in respect of increasing production, gradual rationalisation and modernisation and upgrading of the automotive industry, can therefore be formulated as follows:

- *Increase in the local production volumes of motor vehicles* (DTI, 2003:10 & 45);
- *Increase in the local production volumes of components* (DTI, 2003:10 & 45);
- *Rationalisation of the number of vehicle models produced locally* (DTI, 2003:10 & 45);

- *Increase in local investment* (DTI, 2003:10 & 37);
- *Increase in local research and development activities* (DTI, 2003:10 & 45-47);
- *Increase in local content of motor vehicles* (DTI, 2003:10 & 45); and
- *Increase in local content of components* (DTI, 2003:10 & 45).

2.2.3.2 Improved sectoral balance

The second part of the third objective of the MIDP is to achieve “an improved sectoral trade balance” (DTI, 2003:10). A trade balance represents the difference between the value of goods imported and exported by a country. Where exports exceed imports, the balance can be said to be favourable and *vice versa* (Greenwald, 1973:37). Thus, to improve the trade balance of a specific sector, the aim should be to increase exports or to decrease imports to a level where exports exceed imports. The CSFs in respect of the improvement of the sectoral trade balance can therefore be formulated as follows:

- *Increased exports* (DTI, 2003:10 & 23);
- *Decreased imports* (DTI, 2003:10 & 19); and
- *Improved automotive industry trade balance* (DTI, 2003:10 & 31).

2.2.4 Phased integration into the global automotive industry

Although CSFs have been formulated for all the objectives of the MIDP and for two of the measures for achieving these objectives, the following measure remains: “Encouraging a phased integration into the global automotive industry” (DTI, 2003:10). With dawning globalisation, no policy or programme can be designed in isolation (Black & Bhanisi, 2007:132). This is especially true when obligations are created by membership of global organisations. South Africa has undergone major changes since 1994. This transformation included obtaining membership of the World Trade Organization (WTO) (Organization for Economic Co-operation and Development, 2001:1). In a 2006 study conducted by Dr Norman Lamprecht (2006:309), current executive manager of the National Association of Automobile Manufacturers of South Africa (NAAMSA) and a member of the Automotive

Industry Export Council (AIEC) (Newman & Lloyd, 2010), stakeholders consistently ranked a programme which complies with WTO requirements as being of high importance.

Thus, although a WTO-compliant programme may not be one of the direct objectives of the MIDP such an objective is implied by South Africa's membership of the WTO. The following CSF will also be formulated for purposes of this study:

- *Programme complies with the requirements of the WTO.*

The CSFs to be used as benchmarks in subsequent sections have been formulated in the preceding sections. Table 2 contains a summary of the CSFs formulated.

Table 2: Critical success factors

CSF	
1.	Higher-quality motor vehicles
2.	Higher-quality components
3.	More affordable motor vehicles
4.	More affordable components
5.	Sustainable employment levels
6.	Increase in the local production volumes of motor vehicles
7.	Increase in the local production volumes of components
8.	Rationalisation of the number of vehicle models produced locally
9.	Increase in local investment
10.	Increase in local research and development activities
11.	Increase in local productivity
12.	Increase in local content of motor vehicles
13.	Increase in local content of components
14.	Increased exports
15.	Decreased imports
16.	Improved automotive industry trade balance
17.	Programme complies with the requirements of the WTO

The following section will provide an overview of the principles of the MIDP policy instruments used for achieving the set objectives.

2.3 THE ELEMENTS OF THE MIDP

According to the DTI (2003:10), the major policy instruments for achieving the objectives of the MIDP are:

- “A gradual and continuous reduction in tariff protection so as to expose the industry to greater international competition;
- The encouragement of higher volumes and a greater degree of specialisation by allowing exporting firms to earn rebates of automotive import duties; and
- The introduction of a range of incentives designed to upgrade the capacity of the industry.”

These policy instruments are encapsulated in the following incentives (South African Revenue Service, 2004:8-9):

- A duty/tariff phase-down;
- A Duty Free Allowance (DFA);
- A Productive Asset Allowance (PAA); and
- An Import-Export Complementation (IEC) scheme.

Each of these elements and their role in the performance of the MIDP will be addressed in the next sections.

2.3.1 The duty/tariff phase-down

The Customs and Excise Act No. 91 of 1964 (hereafter referred to as the “Act”) (South African Revenue Service, 2010) defines a customs duty as “...any duty leviable under Schedule No. 1 (except Parts 3, 4 and 5 thereof) or No. 2 on goods imported into the Republic”.

In other words, tariffs are taxes imposed by a national government on the importation of goods into the specific country (Ammer & Ammer, 1977:414; Pearce, 1981:418). Tariffs can be specific or *ad valorem*. They are specific when the amount is determined with

reference to the number of units. *Ad valorem* tariffs are determined by applying a percentage to the value of the goods (Pearce, 1981:418). Tariffs are also known as import tariffs, duty or customs duty, and are implemented to increase governmental revenue (via import tariff revenues) or to discourage imports (Ammer & Ammer, 1977:414).

Chapter 98 of the Act provides for the classification of components imported by registered participants of the MIDP. Provisions relating to the manufacture of completely built-up (CBU) vehicles are detailed in Chapter 87 of the Act. The relevant MIDP rebate items are included in Schedules 3, 4 and 5 of the Act (South African Revenue Service, 2004:6).

During 2001, the DTI commissioned a review of the MIDP to generate recommendations in respect of the extension of the MIDP from 2007 to 2012. The review was conducted by Dr Justin Barnes, currently Chairman of Benchmarking and Manufacturing Analysts (B&M Analysts.com, 2008), and Professor Anthony Black, currently Professor in the School of Economics at the University of Cape Town (Black, 2008). The report recommended the phase-down of the duty percentage under the MIDP in order to improve the competitiveness of the industry (International Trade and Administration Commission, 2003:1-2).

This report reinforced the findings of an economic analysis conducted by Black and Mitchell (2002:9-10), which indicated that tariff reduction is a better way of phasing down assistance to the automotive industry than decreasing the duty rebate per unit of exports. This is because tariff reductions align domestic vehicle prices with global prices and facilitate a reduction in the rent earned by OEMs (Black & Mitchell, 2002:10).

The International Trade and Administration Commission (ITAC) accepted the recommendations of the investigation report commissioned by the DTI, and the duties are being phased down as indicated in Table 3. The DTI (2003:11) indicated that the phase-down rate of the duties (1% per annum from 1 January 2007 onwards (Black, 2001:7)) is greater than that required by the WTO.

Table 3: Duty phase down percentages under the MIDP

Down Phasing of Duties		
Effective Date	Rate of duty fully imported cars / minibuses / light delivery vehicles	Rate of duty on imported components used in the assembly process – Original equipment components
1 January 2003	38%	29%
1 January 2004	36%	28%
1 January 2005	34%	27%
1 January 2006	32%	26%
1 January 2007	30%	25%
1 January 2008	29%	24%
1 January 2009	28%	23%
1 January 2010	27%	22%
1 January 2011	26%	21%
1 January 2012	25%	20%

Source: South African Revenue Service (2004:8).

Thus, when a vehicle with a customs value of R200 000 was imported, the ordinary customs duty liability before rebates equalled R56 000 ($R200\ 000 \times 28\%$) from 1 January 2009 until 31 December 2009. Should the import relate to components of the same value, the customs duty liability before rebates would equal R46 000 ($R200\ 000 \times 23\%$) (South African Revenue Service, 2004:8).

According to standard economic theory, lower import tariffs expose an industry to increased competition. This assists in the rationalisation of the industry as local manufacturers will have to lower the prices and/or increase the quality of locally manufactured vehicles in order to remain competitive. This mechanism was thus designed to facilitate the attainment of economies of scale, thereby reducing input costs and the number of platforms alike (Barnes & Black, 2008; Black, 2002:4). On the other hand, it should be noted that a decrease in import tariffs may result in an increase in the number of units imported, as it becomes less expensive to import. This may result in a reduction in the trade balance and even the creation of a trade deficit (Black & Bhanisi, 2007:141).

For this reason, although the phasing down of import tariffs may result in the achievement of one of the MIDP's objectives of an increase in production volumes, it may also prove

counterproductive when it comes to improving the industry's distorted trade balance. As stated previously, tariffs are used to discourage the importation of goods. Lowering tariffs would decrease the effectiveness of this mechanism in achieving this. Hence, while lower tariffs may encourage importation, other mechanisms can be employed to encourage local manufacturing of goods to reduce the demand for imported goods (Cokayne, 2007).

2.3.2 Duty Free Allowance

The DFA is the policy instrument included in the MIDP to encourage the manufacture of vehicles for the domestic market. In terms of Schedule 3 (Rebate Item 317.04) Note 11 of the Act, manufacturers of vehicles produced for the domestic market are entitled to a DFA to the value of 27% of the value as determined in terms of Note 12. The value in terms of Note 12 is the recommended retail price for the domestic market (excluding value added tax and *ad valorem* excise duty) reduced by a company-specific percentage determined by ITAC. In other words, this percentage is a factor of the financial performance of the relevant company (South African Revenue Service, 2009a:59-60).

The formula for calculating the DFA is thus: (Recommended domestic retail selling price – company specific percentage) x 27%. According to Note 14 of Schedule 3 of the Act, the calculated DFA can first be used to reduce the customs duty value of components and subsequently to reduce the customs duty value of motor vehicles. Any excess may be transferred to the next quarter (South African Revenue Service, 2009a:61).

The rationale behind the DFA is that manufacturers will aim to produce more vehicles locally for the domestic market to take advantage of benefits from the importation of vehicles. Thus, not only will domestic production volumes increase, but the cost per unit will decrease due to economies of scale, and subsequently the objective of providing more affordable vehicles to the domestic market will be achieved. The DFA focuses on domestic production and is at risk of contravening the provisions of the WTO's General Agreement on Trade and Tariffs (GATT). This is discussed in greater detail in section 2.4.7.

2.3.3 Productive Asset Allowance

With globalisation come the high technological demands of the world market. This requires the automotive industry to adapt to the ever improving and changing technological requirements stipulated by the foreign parent companies (Kaggwa, Pouris & Steyn, 2007: 686).

The PAA was introduced to assist the industry in adapting to the global demands. The main objective of the PAA is to improve industry performance by rationalising the number of vehicle platforms. In this way, manufacturers would be able to specialise and increase the number of units produced locally (Kaggwa *et al.*, 2007:684).

The PAA is set out in Schedule 4 (Rebate Item 460.17) Note 26 of the Act. A PAA certificate was granted to either an OEM or a component manufacturer if the following conditions were met:

- Proof of the status of the applicant as a manufacturer of Chapter 98 motor vehicles or a component manufacturer which supplies manufactured components to an OEM in terms of a contract (South African Revenue Service, 2009b:37);
- A business plan containing a project to invest in productive assets, submitted to ITAC on or before 31 December 2009 (South African Revenue Service, 2009b:37);
- Proof that the project as per the business plan will facilitate the achieving of the MIDP's objectives (South African Revenue Service, 2009b:37); and
- A new light motor vehicle manufacturer must produce at least 20 000 units per platform within two years of the commencement of production (Kaggwa *et al.*, 2007:684).

The PAA does not include medium and heavy commercial vehicles, nor does it support component manufacturers that are not dedicated to facilitating the rationalisation of the industry (DTI in Lamprecht, 2006:102).

The total value of the allowance is equal to 20% of the value of the productive assets as detailed in the business plan. Productive assets are defined as “buildings erected for the

sole purpose of manufacturing specified motor vehicles or components, and new or unused plant, machinery, tooling, jigs, dies and moulds, in-plant logistics, testing, design and production information technology equipment and supporting software” (South African Revenue Service, 2009b:37). The allowance is distributed over a period of five years (i.e. 4% per year) and may be used to reduce the import duty on light motor vehicles. Thus, the allowance directly reduces the import duty liability instead of reducing the customs duty value of the imported item (South African Revenue Service, 2009b:37). However, component manufacturers have to assign their certificates to an OEM. The PAA provisions require 80 percent of the certificate value to be transferred to the component manufacturer. OEMs cannot transfer PAA certificates, but may use them for their own benefit (Kaggwa *et al.*, 2007:684).

For example, where the value of productive assets equalled R500 000, the total value of the allowance would be R100 000 ($R500\ 000 \times 20\%$). This allowance value may then be used to reduce the import duty liability with R20 000 ($R100\ 000 / 5\ \text{years}$) per year over a period of five years. If this related to a component manufacturer, the allowance would be only R80 000 ($R100\ 000 \times 80\%$), distributed over five years.

From the introduction of the PAA until the period ending April 2006, 42 applications to the value of R21.4 billion were submitted. It has been shown that the OEMs applying for the PAA were able to decrease the number of model platforms from 31 in 1999 to 18 in 2006 and to increase production volumes per platform from 9 500 units to 24 000 units for the same period (DTI in Lamprecht, 2006:101-102). The problem with encouraging production in greater volumes to achieve economies of scale is the limitation placed on market demand owing to the limited size of the domestic market.

2.3.4 Import-Export Complementation scheme

The IEC scheme was included in the MIDP to facilitate an expansion in the market for domestic production by encouraging manufacturers to venture into export markets (Black & Mitchell, 2002:13). Therefore, the IEC scheme was also intended to increase the local production volumes of component manufacturers. An IEC scheme functions by earning import rebates for exporting goods, which can be used to reduce tariffs levied on the

subsequent import of goods. The MIDP mechanism used to facilitate this scheme is import rebate credit certificates (IRCCs) (Black & Mitchell, 2002:13).

Note 4 of Schedule 3 Part 1 of the Act defines IRCCs as “certificates issued by ITAC in respect of eligible exports of goods defined in Note 5” (South African Revenue Service, 2009a:56). Eligible exports refers to the export of motor vehicles (including light delivery motor vehicles, minibuses and buses) and components and accessories (South African Revenue Service, 2004:18). Further, Note 5 (b) states that exports of components and tooling will qualify only where at least 25% of the selling price of the items is represented by conversion costs (labour, overheads and materials) incurred in the common customs area. Packing and painting activities are not deemed to be a manufacturing process (South African Revenue Service, 2009a:56).

The value of the IRCC is determined with reference to the difference between the free on board (FOB) selling value of the export and the customs duty value of all imported components and materials used in the production thereof (South African Revenue Service, 2009a:62-63). Thus, the IRCC value represents the local content of the exports (South African Revenue Service, 2004:18).

After the MIDP mid-term review in 2000, the determined IRCC value was further amended so that only a certain percentage of the calculated value would qualify for use. The qualifying percentage was reduced from 94% in 2003 to 70% in 2007. The percentage will remain at 70% until the conclusion of the MIDP in 2012 (South African Revenue Service, 2004:18).

Where an IRCC is obtained via the export of components, the full qualifying value of the IRCC may not be used as a rebate in the event that the subsequent import consists of a light motor vehicle. Only 60% of the qualifying value of the IRCC may be used to reduce the import tariff liability. This adjustment is required in addition to the one mentioned in the preceding paragraph (South African Revenue Service, 2004:19).

Unlike the PAA, IRCCs can be transferred to other manufacturers (Kaggwa *et al.*, 2007:684). According to Note 26 of Schedule 3 of the Act, IRCCs may be transferred only

once after first being issued (South African Revenue Service, 2009a:66). The sales price is determined by the buyer and seller (South African Revenue Service, 2004:18).

Owing to the nature of the IEC scheme, this policy instrument is at risk of being classified as a prohibited subsidy in terms of the WTO's Agreement on Subsidies and Countervailing Measures. This is discussed in greater detail in section 2.4.7.

2.4 THE PERFORMANCE OF THE MIDP

The above sections set out the principles of the policy instruments of the MIDP. The implementation results of the MIDP cannot be determined by analysing each instrument separately. As is clear from the above discussions, synergy between the instruments is required for the optimal functioning of the MIDP. It is when the performance of the MIDP as a whole is analysed that the most value-adding conclusions can be made. The next section will evaluate the performance of the MIDP, by using the CSFs as formulated in section 2.2 as a benchmark. Table 4 indicates the relevant section headings and the CSFs that will be addressed within each section.

Table 4: Linkage between CSFs and section headings

Section Heading	Critical Success Factor
Section 2.4.1: Quality: Motor vehicles and components	<ul style="list-style-type: none"> • Higher-quality motor vehicles • Higher-quality components
Section 2.4.2: The affordability of motor vehicles and Section 2.4.3: The affordability of components	<ul style="list-style-type: none"> • More affordable motor vehicles • More affordable components
Section 2.4.4: Exports, imports and the automotive industry trade balance	<ul style="list-style-type: none"> • Increased exports • Decreased imports • Improved automotive industry trade balance
Section 2.4.5: Local investment and related MIDP objectives	<ul style="list-style-type: none"> • Increase in the local production volumes of motor vehicles • Increase in the local production volumes of components • Rationalisation of the number of vehicle models produced locally • Increase in local investment • Increase in local research and development activities • Increase in local content of motor vehicles • Increase in local content of components

Section Heading	Critical Success Factor
Section 2.4.6: The MIDP's contribution to sustainable employment levels and productivity	<ul style="list-style-type: none"> • Sustainable employment levels • Increase in local productivity
Section 2.4.7: Alignment of the MIDP with the World Trade Organization's requirements	<ul style="list-style-type: none"> • Programme complies with the requirements of the World Trade Organization

2.4.1 **Quality: Motor vehicles and components**

Quality in the automotive industry will be defined for purposes of the present study according to the manufacturing-based approach and the user-based approach.

2.4.1.1. Quality of motor vehicles and components: The manufacturing-based approach

The present study (refer to section 2.2.1), defines manufacturing-based quality as motor vehicles and components conforming to international measurable and verifiable standards.

A standard can be defined as:

- "Something considered by an authority *or by general consent* as a basis of comparison; an approved model" (Dictionary.reference.com, 2010b);
- "Something set up and established by authority as a *rule for the measure of quantity, weight, extent, value, or quality*" (Merriam-webster.com, 2010b); and
- "A basis for comparison; a reference *point against which other things can be evaluated*" (Dictionary.die.net, 2010).

For the automotive industry, quality is measured against the quality standards as issued by the International Organization for Standardization (ISO). ISO is the largest developer and publisher of international standards. It provides a network for the coordination of national standards of its 163 members, including South Africa, and combines the requirements of the business sector and the broader needs of society in general (ISO, 2010a). The South African Bureau of Standards (SABS) is the member body representing South Africa (ISO, 2010c).

ISO standards are voluntary agreements based on a solid consensus of international expert opinions (ISO, 2010b). ISOs were developed by the WTO to assist in building a relationship between trade, quality and the environment (Standardsinfo.net, 2010). The objectives of these quality standards are (DTI, 2003:17):

- “[To] add value to all types of business operations;
- [To] make the development, manufacturing and supply of products and services more efficient, safer and cleaner;
- [To] make trade between countries safer and faster; and
- [To] safeguard consumers and general users of products and services”.

The SABS has implemented an ISO scheme that correlates national standards from across regions in the world (DTI, 2003:17). The following technical quality standards were applicable to the automotive industry in 2009 (SABS, 2009:1):

- SABS ISO 9000:2000 – Quality Management Systems;
- ISO Technical Standard (TS) 16949:2002 – Automotive Quality Management Systems;
- ISO 14001 – Environmental Management Systems;
- Occupational Health and Safety Assessment Series (OHSAS) 18001 – Health and Safety Management Systems; and
- SABS MARK SCHEME – Product Certification.

ISO developed the standard, ISO/TS 16949:1994 to tailor the requirements of ISO 9001 to meet the specific needs of the automotive industry. However, it was one of its successors, ISO/TS 16949: 2002 – *Quality Management Systems: Particular requirements for the application of ISO 9001:2000 for automotive production and relevant service part requirements*, that began to change the concept of quality in the automotive industry (Gryn, 2003:20). ISO/TS 16949: 2002 was developed by the International Automotive Task Force (IATF) in conjunction with the Japan Automobile Manufacturers Association (JAMA) and ISO to assist the automotive industry in meeting the high quality standards required when becoming globally integrated and competitive. The IATF consisted of a group of OEMs, suppliers and ISO members (ISO, 2002). The standard enhances the contents of

ISO 9001:2000 by incorporating automotive specific requirements (Gryn, 2003:20). BMW, Daimler Chrysler (now Mercedes Benz), Fiat, the Ford Motor Company, General Motors Corporation, PSA Peugeot Citroën, Renault and Volkswagen indicated that ISO/TS 16949 would be implemented as their quality management system. Some of the OEMs require compliance only, while other OEMs require their suppliers to obtain certification of ISO/TS16949 compliance. It is expected that ISO/TS 16949 will become the common global quality management system requirements standard, and that it will gradually replace all national standards (Gryn, 2003:20, 21, 23).

On 15 June 2009, ISO published a new edition of the above standard: ISO/TS 16949:2009 - *Quality management systems: Particular requirements for the application of ISO 9001:2008 for automotive production and relevant service part organizations*. The 2009 edition will replace the 2002 edition. The standard was revised to ensure compatibility with the new ISO 9001: 2008 (ISO, 2009).

No comprehensive SABS directory of registered suppliers to the automotive industry available in the public domain could be found in connection with all applicable technical quality standards. However, the SABS certified client directory indicates that, in 2010, 76 suppliers to the automotive industry conformed to SABS ISO/TS 16949: 2002. As of March 2010, the SABS certified client directory does not indicate the number of clients who have converted to ISO 9001:2008 and ISO/TS 16949: 2009.

It is difficult to determine the extent of compliance by the automotive industry, as no comprehensive databases listing both registered and unregistered suppliers, and available in the public domain, could be found.

South Africa is committed to quality, as is evident from the member body SABS' membership of the ISO. No conclusion on whether the MIDP has created higher quality motor vehicles and components can be made based on the manufacturing-based approach. The next section will therefore discuss whether, according to the user-based approach, the MIDP has achieved this CSF.

2.4.1.2 Quality of motor vehicles and components: The user-based approach

The present study (refer to section 2.2.1), defines user-based quality as motor vehicles and components that contain attributes which are *perceived by the target consumer as being of high quality* in comparison with other vehicles and components in the automotive market. The discussion will be sub-divided into two categories, namely motor vehicles and components.

Motor vehicles

Synovate, a market research firm, conducts an annual Quality Awards Survey for the Competitive Customer Satisfaction Index (CCSI). The survey is claimed to be performed by interviewing approximately 28 000 customers (Synovate, 2007b). For purposes of the survey, quality is divided into the following categories (Synovate, 2005a:1-3; Synovate, 2005c: 1-2):

- *Noise levels*: This includes wind noise, driving noise and equipment noise;
- *Static functional problems*: This includes water leaks, dust leaks and any problems with ventilation and functional aspects such as the lights system and the sound system;
- *Dynamic functional problems*: Such problems impact negatively on the safety of the vehicle. Examples of these problems are: difficulty with shifting gears, noise during braking and mechanical and functional performance; and
- *Appearance*: this includes the interior of the vehicle and the exterior body of the vehicle.

Quality is measured with a zero defects measure termed PP100, that is, Problems Per 100 Vehicles (Synovate, 2005c:2). As at 2009, the Quality Awards Survey included over 90% of vehicle models sold in South Africa. According to the 2009 Synovate Quality Awards Survey, seven out of a hundred new vehicles sold are completely free from defects (Synovate, 2009c). In the 2005 Quality Awards Survey, it was concluded that the quality of imported vehicles is only slightly better than that of locally manufactured vehicles (Synovate, 2005b:1).

The quality of motor vehicles has improved, as is evident from the following positive trend:

- The PP100 for passenger vehicles (including vehicles such as the Volkswagen Polo and Toyota Corolla) has decreased by 60%, from a PP100 of 230 in 1998 (Synovate, 2007a:2) to a PP100 of 93 in 2009 (Synovate, 2009b:5).
- The PP100 for light commercial vehicles (including vehicles such as the Toyota Hilux and Isuzu KB) has decreased by 61%, from a PP100 of 286 in 1998 (Synovate, 2007a: 8) to a PP100 of 111 in 2009 (Synovate, 2009b:9).

From the above, it can be concluded that the overall quality of vehicles, both imported and locally manufactured, has improved. However, the following should be noted regarding the research conducted by Synovate:

- Not all vehicle brands are included in this study. Some vehicle brands are excluded owing to non-participation and small sample size (Synovate, 2009a:1). This indicates the possibility that participants vary from year to year, which affects the comparability of these studies.
- The information provided does not discern clearly between imported and locally manufactured vehicles.
- The Synovate Quality Awards survey focuses on motor vehicles themselves rather than their components. It is therefore not possible to conclude on the quality of components based on the Synovate survey, as the origin of the components is unknown.

As a result of the above, the Synovate survey could provide an indication of the general level of the quality of participating vehicle models in each class, however, as it does not clearly discern between imported vehicles and those manufactured locally it would be difficult to determine the PP100 for locally manufactured vehicles overall.

Another research firm conducting surveys on automotive quality is J.D. Power and Associates. The firm conducts an annual worldwide *Initial Quality Study* in which new vehicle quality is measured at 90 days of ownership. In the 2009 study, the Mercedes Benz manufacturing plant located in East London, South Africa, received recognition for

producing the highest quality vehicles in the European and African regions. This plant manufactures the Mercedes-Benz C-Class. The PP100 rating for this plant was determined as 38 (J.D. Power and Associates, 2009:2). Detailed survey results for each local manufacturing firm could not be found in the public domain.

The sample size for the J.D. Power and Associates study is claimed to be approximately 80 900 purchasers and lessees of new 2009 model vehicles (J.D. Power and Associates, 2009:2). While the study is conducted worldwide, the researcher could not find a comprehensive database in the public domain containing all manufacturing plants located in South Africa and elsewhere that would facilitate a useful analysis of quality.

Components

Two possible key performance indicators for the quality of components are the customer return rate and the internal scrap rate of components (South African Automotive Benchmarking Club, 2008b:4). The measure used in determining these benchmarks is *parts per million*, that is, the number of events in a million. The latest South African Automotive Benchmarking Club (SAABC) data that could be found in the public domain at the time of the present study was for the 2007 period.

In 1998, the customer return rate was 3 257 parts per million. In 2007 the rate was 474 parts per million. This represents an improvement in the customer return rate of 85.45%, implying that the quality of components has improved immensely since the implementation of the MIDP (SAABC, 2008b:4).

In 1998, the internal scrap rate was 4.83 parts per million, and in 2007 this rate was 3.71 parts per million. This represents an improvement in the internal scrap rate of 23.19%, which implies that the quality of manufacturing processes and therefore components has improved since the implementation of the MIDP (SAABC, 2008b:4).

There is a link between the quality of components and that of vehicles. Where the quality of components increases, that of vehicles also increases, as components are the

ingredients of vehicles. On the contrary, as the next section will show, defective components could also result in defective vehicles.

2.4.1.3 *Quality: Recent developments*

Compliance with international standards and customer satisfaction may be an indication of quality but may not always guarantee this. This is evident from the number of motor vehicles recalled worldwide owing to manufacturing defects. Table 5 contains a list of recent recalls for the 2009/2010 period.

Table 5: Number of motor vehicles recalled since July 2009 until February 2010

Vehicle brand	Number of units recalled	Location impacted
Ford	14 000 000	Worldwide
Citroën	100 000	Worldwide
Toyota	7 600 000	Worldwide
Land Rover	56 000	Worldwide
Honda	646 000	Worldwide
Volkswagen	200 000	Brazil
Nissan	500 000	United States of America
General Motors: Cobalt and Pontiac	1 300 000	North America

Source: Adapted from Channelnewsasia.com (2010); Cillié (2010:3); Cloete (2010:13); McAleer (2010); Pelsler (2010:13).

The reasons the vehicles were recalled are as follows:

- Ford recalled vehicles because of defective speed-monitoring devices (Rapport, 2010).
- Land Rover recalled vehicles because of defective brakes (Pelsler, 2010:13).
- Toyota recalled various models because of defective accelerator pedals. Toyota South Africa expects that they will have to recall over 50 000 vehicles in South Africa alone (Cloete, 2010:13).
- Citroën recalled vehicles because of accelerator pedal problems, similar to those experienced by Toyota (McAleer, 2010).

- Honda South Africa recalled 16 000 Honda Jazz models because of a manufacturing problem which could have resulted in a short circuit and could subsequently have caused the vehicle to catch fire (Cloete, 2010:13).
- Volkswagen recalled vehicles because of a lubrication problem with the rear wheels, which might have caused them to fall off (Channelnewsasia.com, 2010).
- Nissan recalled vehicles because of defective brake pedals and fuel components (Cillié, 2010:3).
- General Motors recalled vehicles because of steering problems (Cillié, 2010:3).

The fact that the automotive entities recalled the defective vehicles indicates that they are committed to being socially responsible. According to Andrew Taylor, the executive manager of Cape Advanced Engineering, globalisation is one of the reasons for the increase in the number of recalls. This is because one manufacturing plant may be responsible for manufacturing the global supply of one specific component (Cloete, 2010:13). According to Tony Twine, an economist at Econometrix, the current recalls can be attributed to the high volume of sales prior to the economic recession. He stated that, when high volumes are required, vehicles are built in such a way as to complete them as quickly as possible, which means that small quality requirements are overlooked (Cillié, 2010:3).

The recalls discussed above highlight the fact that defectively-designed components may result in the manufacture of defective vehicles. The fact that the design responsibility of most OEMs lies with the foreign holding companies further complicates drawing conclusions on the impact of the MIDP on the quality of components, as poor quality may be attributable to poor design. Design activities like research and development are not concentrated in South Africa (Barnes & Morris, 2008:43). Although there has been an improvement in the quality of motor vehicles and components, the current data found in the public domain are not sufficient to corroborate the extent of this improvement and the MIDP's role in it.

Conclusion

It is uncertain whether the MIDP has satisfied the following CSFs: *Higher quality motor vehicles and higher quality components*.

To facilitate a conclusion, the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(1) *Higher quality motor vehicles*" and "(2) *Higher quality components*".

2.4.2 The affordability of motor vehicles

In this section a conclusion will be reached on whether the MIDP has satisfied the following CSF: *More affordable motor vehicles*. Only the initial purchase cost of motor vehicles will be considered and not the total cost of ownership (the cost of service and motor plans, as well as running costs).

As discussed in section 2.2.1.2 the measure to be used in determining the affordability of motor vehicles from the perspective of South African consumers is the CPI. Further, available studies comparing the cost of locally manufactured vehicles with the cost of vehicles manufactured elsewhere in the world will be used in determining whether locally manufactured vehicles are more affordable than those manufactured elsewhere.

2.4.2.1 Cost comparisons: Local and foreign motor vehicles

A study conducted by Barnes, Kaplinsky and Morris (2003:17) revealed that there was no evidence that the MIDP has resulted in the increase in motor vehicle prices for domestic consumers. Details of the study are as follows (Barnes *et al.*, 2003:14-15):

- South African vehicle prices were compared with the average European Union (EU) vehicle prices (as determined by the European Union Commission), prices in EU

countries with a significant automotive industry and prices in EU countries without significant automotive production.

- Value added tax (VAT) and excise duties were separated from the vehicle costs, as the VAT rate and excise duties in South Africa are different from those in the EU.
- Vehicles of similar quality and specification level were selected to facilitate the comparison.
- An estimation of dealer margins was used to help determine the cost of the vehicles before the margins.
- The average Rand/Sterling exchange rate for 2002 was used to convert the vehicle prices into Rands to facilitate a comparison.

Flatters (2005:8) criticised this research and conclusion, stating that the assumptions underlying the study were flawed, which produced misleading results. His points of critique were as follows:

- The comparison used retail prices instead of factory prices: The MIDP affects the customs duty value of motor vehicles, and the effect of the MIDP on consumer prices cannot be determined with reference to the retail price (Flatters, 2005:8-9);
- South African prices were compared with prices elsewhere in the world: To determine the effect of the MIDP on consumer prices, the prices of motor vehicles with and without the MIDP should have been compared (Flatters, 2005:8-9);
- The foreign countries used in the comparison are known for their high automotive prices: This made it easier to demonstrate that South African automotive prices are lower than elsewhere in the world (Flatters & Netshitomboni, 2006:6); and
- The price comparison ignored the fact that the South African market still included outdated vehicles of a lower quality than those in foreign countries (Flatters & Netshitomboni, 2006:6).

A follow-up study by Barnes, Kaplinsky and Morris (2005) indicated that prices for motor vehicles at the lower end of the range in South Africa were higher than prices elsewhere in the world, thereby contradicting the results of the previous study.

Kaplan (2003:21) indicated that the prices of South African motor vehicles are probably higher than vehicle prices in Europe. However, Kaplan refrained from drawing a final conclusion owing to difficulties in price comparisons encountered in price studies, such as the effect of the exchange rate and the unavailability of factory prices.

Flatters (2005:9) stated that two of the main reasons for the high costs for consumers were the payment of dividends to foreign shareholders and the inclusion of import duties in retail prices. Most of the automotive firms are foreign-owned. This results in a transfer of income in the form of dividends to foreign shareholders. The dividends are derived from sales to South African consumers. Thus, in effect, the wealth of these consumers is transferred to foreign shareholders, resulting in a net loss to the South African economy (Flatters, 2005:9).

Some industry observers believe that South African consumers pay duty-inclusive prices for domestically manufactured vehicles on account of the following:

- IRCCs have value and can be sold. According to Note 26 of Schedule 3 of the Act, IRCCs obtained may be transferred after being issued. The sales price is determined by the buyer and seller (South African Revenue Service, 2004:18; South African Revenue Service 2009a:66). The market value of the purchased IRCCs can then be recouped by the OEM by inflating the retail prices (Flatters & Netshitomboni, 2006:6; Kaplan, 2003:22);
- A study conducted by Lamprecht (2006:204) revealed that all respondents, who were comprised of OEMs, component manufacturers and other industry stakeholders, were of the opinion that the South African automotive industry would not be able to compete globally in the absence of the MIDP. Flatters and Netshitomboni (2006:6) concluded that this was because duty savings are included in the retail prices, which inflates the profits. Without the duty saving impact of the MIDP, profits would decrease and foreign investors would probably invest elsewhere; and
- Discussion with vehicle importers revealed that current motor vehicle sales prices exceed the duty-inclusive prices thereof (Flatters & Netshitomboni, 2006:6).

Subsequent to the above studies, the Competition Commission of South Africa (CCSA) conducted a price study initiated in terms of the Competition Act No. 89 of 1998, on account of numerous complaints lodged by South African consumers. The investigation revealed that the prices of South African motor vehicles were, on average, 14% higher than the prices of similar vehicles across the world (CCSA, 2005:3).

The CCSA study also confirmed that motor vehicle prices include import tariffs, even if the vehicles were produced locally. The CCSA concluded that export vehicle prices are lower than prices for those sold locally, and that domestic consumption is effectively subsidising exports. Prices for locally produced vehicles are effectively aligned with those for imported vehicles without the consideration of proper cost allocation (CCSA, 2005:7). Hence, the true intended benefits of the MIDP in respect of the domestic market are lost. One result of the price study conducted by the CCSA was that certain OEMs were found to be guilty of motor vehicle price fixing and anti-competitive trading conditions. This resulted in the payment of administrative penalties by these OEMs to the amount of R51.65 million (CCSA, 2006:1).

Owing to shortcomings identified in certain of the above studies and the fact that none of the research results are comparable, it is not possible to draw any conclusion as to whether the MIDP has satisfied the CSF of creating more affordable motor vehicles. The next section will measure the affordability of motor vehicles, with reference to the CPI, to further assist towards such a conclusion.

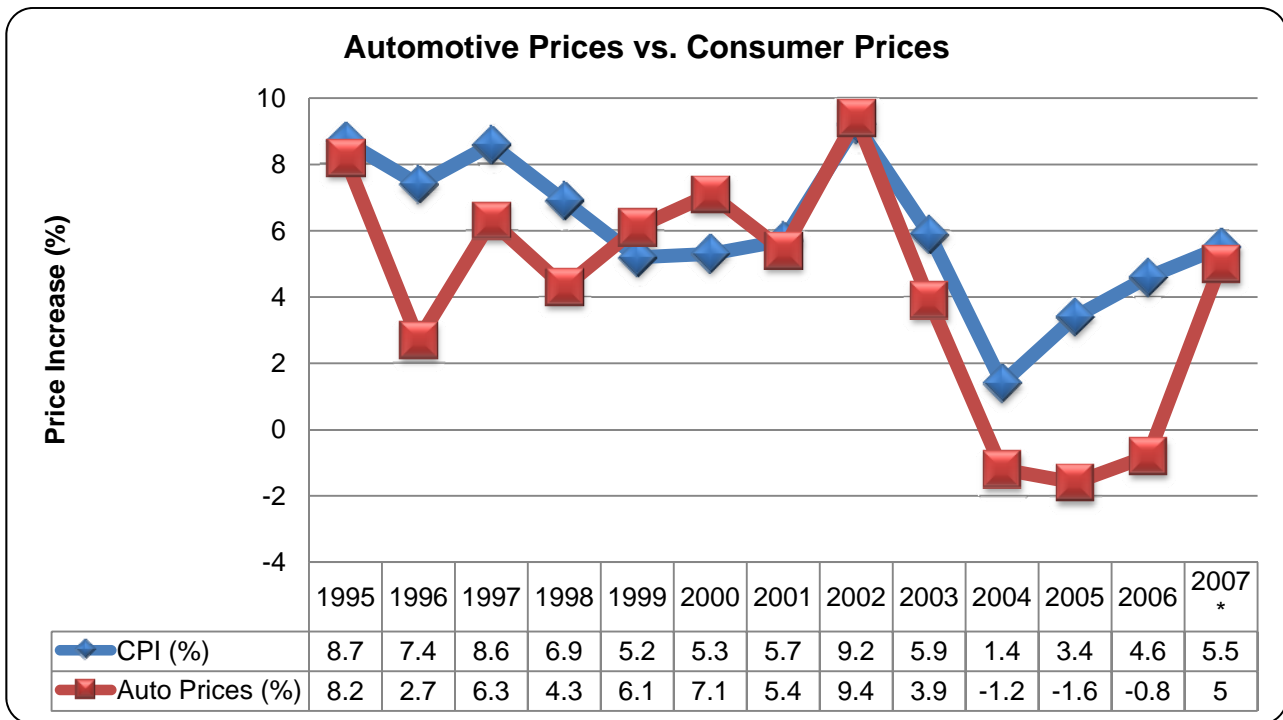
2.4.2.2 Affordability measured in terms of the CPI

The CPI can be defined as:

- “An *inflationary indicator that measures the change in the cost* of a fixed basket of products and services, including housing, electricity, food, and transportation. The CPI is published monthly. Also called cost-of-living index” (Investorwords.com, 2010).
- “The consumer price index or CPI is a measure of the level of inflation. CPI *measures how much the price* of a basket of consumer goods *has changed over a given time period*” (Economicsabout.com, 2010).

The CPI therefore represents the prices of goods from the consumer’s point of view. A comparison between the change in vehicle prices with the change in the prices of other goods (represented by the CPI) may assist in reaching a conclusion on the affordability of motor vehicles (refer to Figure 2).

Figure 2: Automotive price increases relative to increases in consumer prices



Source: Adapted from Econometrix (Pty) Ltd in the 2007 National Association of Automobile Manufacturers of South Africa Annual Report (2007:7). *Note: Auto prices include only used and new motor vehicles and projected percentages are used for 2007.

Figure 2 provides a comparison of the percentage increase in consumer prices with the percentage increase in the prices of new and used motor vehicles. This comparison shows that the increase in automotive prices is well below that for consumer prices from 2001 onwards. Automotive prices increased in excess of consumer prices for the first time during 1999. This can be attributed to inflationary pressures that were not absorbed by OEMs, and thus had to be borne by consumers. According to the DTI, new vehicle prices were still 8 to 10% lower than they would have been had they increased in line with inflation (DTI in Lamprecht, 2006:110). As at March 2010, updated data beyond 2007 could not be found in the public domain. It should be remembered, however, that not all

consumer goods have the benefit of subsidy support, so a comparison such as that in Figure 2 may be misleading.

Flatters and Netshitomboni (2006:7) are of the opinion that price comparisons using the CPI as a measure can provide only a rough estimate of whether automotive prices are indeed lower as a result of the MIDP.

The South African government seems to be of the opinion that the MIDP has failed to produce more affordable motor vehicles. Treasury indicated reluctance to continue with the MIDP on account of its contribution to increasing the cost of vehicles in South Africa (Le Roux, 2007:1). At an African National Congress debate, Trevor Manuel, then the Finance Minister of South Africa, commented: “In the township where I come from, people who have cars from the 1980s don’t have those cars because they want to drive vintage models” (Omarjee, 2009).

Conclusion

It is uncertain whether the MIDP has satisfied the following CSF: *More affordable motor vehicles*.

To facilitate a conclusion, the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: “(3) *More affordable motor vehicles*”.

2.4.3 The affordability of components

According to De Lange (2010:6), between 75% and 85% of the cost of a vehicle can be attributed to high material costs, which are the ingredients of components. Bill Stephens, the current manager of communications at Volkswagen South Africa (VWSA), claimed that material prices in India and China are between 20% and 40% more competitive than those

in South Africa, while in Europe material prices are between 10% and 20% more competitive. This competitive disadvantage was also claimed by Evan Dold, the current vice-president of global purchasing and supply chain management at General Motors South Africa (GMSA). Dold claimed that South Africa has a global competitive disadvantage of between 30% and 40% for a specific grouping of components (De Lange, 2010:6).

Material is the building block of components. So where material costs are high, the price of components is correspondingly high. According to Dold, there is pressure by OEMs on component manufacturers to become more cost efficient if they are to absorb the high costs of material. The components industry is impacted adversely by high electricity costs, export costs, transport costs, income tax, fluctuations in the foreign exchange rate and sales volumes of motor vehicles (De Lange, 2010:6).

David Powels, the president of the NAAMSA, commented that global automotive firms are willing to invest in the South African automotive industry, but claimed that they are discouraged by the uncompetitive nature of the local industry. This can be attributed mainly to a rise in relative costs and expensive logistic chains. Powels claimed that South Africa is 20% more expensive as an automotive manufacturing base than Western Europe, and 30% to 40% more expensive than China or India. As a result, the local OEMs are importing approximately 65% of components for the manufacture of motor vehicles. It appears that components have not become more affordable under the MIDP. Logistical costs further increase component prices owing to South Africa's distance from export markets as well as built-in inefficiencies. This was said to be forcing the local industry to export to nearby markets, such as Mozambique, crippling the global integration of the local components industry (Venter, 2009a).

“Inventory control provides a sound proxy of overall cost control. This can be attributed to the fact that where inventory is effectively managed, the costs of said inventory is bound to be reduced due to the elimination of inventory write offs and emergency supply chain measures causing payment penalties”. The following inventory control measures should be noted (SAABC, 2008b:3):

- Total inventory operating days improved by 45.95%, from 64.29 days in 1998 to 34.75 days in 2007;
- Finished goods operating days improved by 45.58%, from 17.64 days in 1998 to 9.6 days in 2007;
- The work in progress operating days improved by 54.89%, from 12.68 days in 1998 to 5.72 days in 2007; and
- The raw material goods operating days improved by 42.83%, from 33.97 days in 1998 to 19.42 days in 2007.

All the above-mentioned improvements relating to inventory control will impact the final cost of components. Therefore the improvement can be equated with an improvement in the affordability of components under the MIDP, despite the competitive disadvantages claimed above.

Conclusion

Based on the above, it can be concluded that the MIDP has satisfied the following CSF: *More affordable components*.

To facilitate a conclusion, the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(4) *More affordable components*".

2.4.4 Exports, imports and the automotive industry trade balance

In this section a conclusion will be reached as to whether the MIDP has satisfied the following CSFs: *Increased exports, decreased imports and an improved automotive industry trade balance*. The conclusion will relate to both motor vehicles and components.

As stated previously, one of the MIDP's objectives is to improve the automotive industry's distorted trade balance (DTI, 2003:10). A trade balance represents the difference between the value of goods imported and exported by a country. Where exports exceed imports, the balance can be said to be favourable and *vice versa* (Greenwald, 1973:37).

The trade balance consists of exports on the one hand and imports on the other hand. However, by enabling manufacturers to import components and vehicles at reduced import duties or even duty free, the opportunity for rationalisation is created. This is because, instead of manufacturers producing a wide range of models, they can now import certain models and focus on manufacturing a few of them, which would result in scale of economies (Black, 2002:7). The MIDP structure has been criticised for making it much easier to generate exports to obtain duty rebates than to rationalise the industry (Black & Bhanisi, 2007:140).

The strategy followed by OEMs is influenced by their parent/controlling entities. It is these strategies that determine the course of action followed to minimise import duties (Black, 2002:6). This means that a strategy of either rationalisation or earning import rebates to minimise the import duty liability in order to increase imports is adopted.

According to Black and Bhanisi (2007:140), import duty liabilities can be minimised as follows:

- Limiting the importation of components and motor vehicles;
- Adjusting the local content of vehicles produced locally; and/or
- Facilitating an increase in exports.

According to Black (2002:7), the two main strategies being followed are:

- Increasing the exportation of motor vehicles to facilitate the importation of motor vehicles and components duty free via IRCCs. This strategy creates the opportunity for rationalisation, as manufacturers are able to specialise in the manufacture of certain models while importing the remainder; and

- The production of a number of models, supplemented by the production and subsequent exportation of components to earn IRCCs.

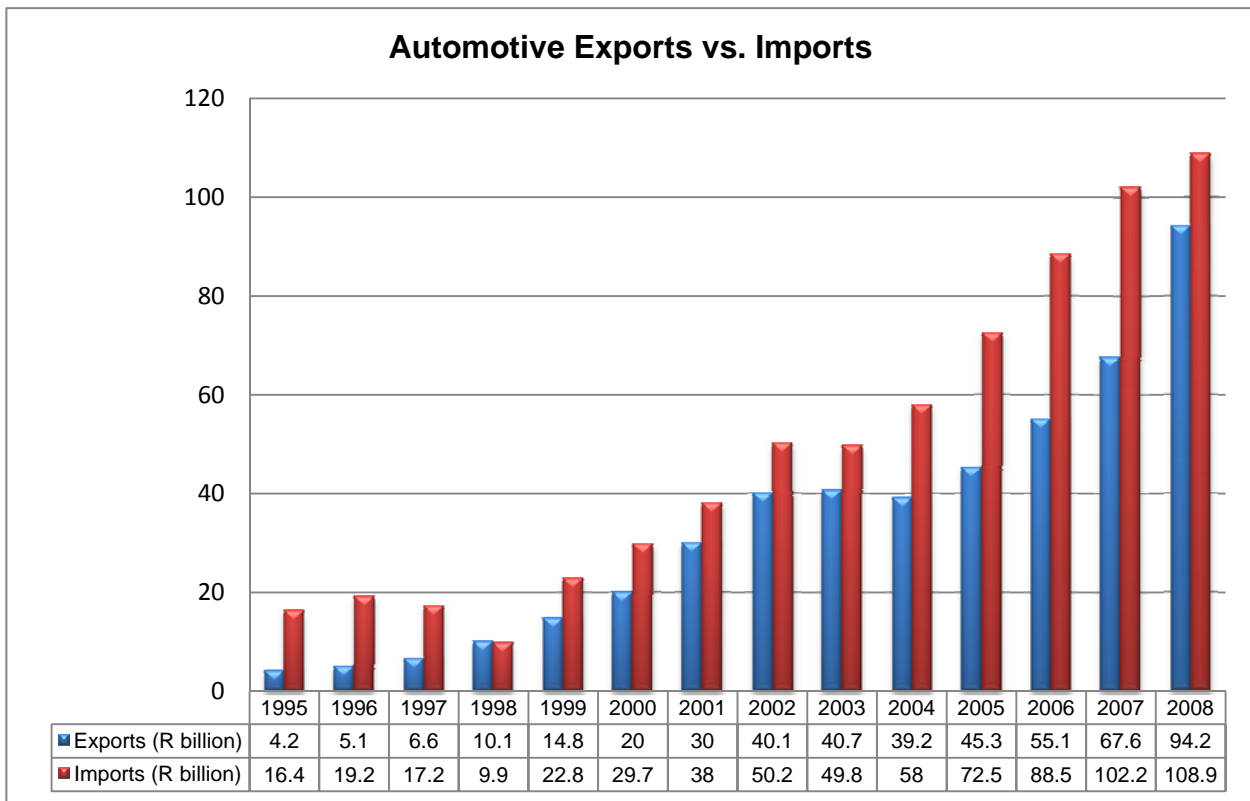
2.4.4.1 Automotive imports and exports

The strategies stated in the previous section have resulted in the increase of both exports and imports by the South African automotive industry (refer to Figure 3).

A highly acclaimed implementation result of the MIDP is the surge in exports (Black & Mitchell, 2002:6). The value of exports rose from R4.2 billion in 1995, when the MIDP was first implemented, to R94.2 billion in 2008. This is an increase of approximately 2 143% (excluding the effect of inflation) (Automotive Industry Export Council, 2009:4; NAAMSA, 2007:16).

Just like exports, imports have expanded dramatically. From the value of only R16.4 billion in 1995, imports have increased by approximately 564% (excluding the effect of inflation), to R108.9 billion as at 2008 (Automotive Industry Export Council, 2009:4; NAAMSA, 2007:16). Figure 3 shows a comparison of exports and imports (components and motor vehicles) by the automotive industry.

Figure 3: Automotive industry imports and exports since the implementation of the MIDP



Source: Adapted from NAAMSA (2007:16) and Automotive Industry Export Council (AIEC) (2009:4)

It should be noted that the increase in both imports and exports started gaining momentum in 1999, four years after the MIDP was first implemented. It was also during 1999 that the first review of the MIDP was conducted (Black, 2002:5; Flatters, 2005:14). The researcher could not find the monetary amounts for automotive imports and exports in 2009 as at March 2010 in the public domain. However, NAAMSA data indicated that export volumes of vehicles decreased in 2009 by approximately 39%, from 282 984 units in 2008 to 174 116 units in 2009. Import volumes of light motor vehicles also decreased by approximately 23%, from 254 633 units in 2008, to 196 246 units in 2009 (NAAMSA, 2010b). This decline can be attributed to the worldwide economic recession, which resulted in a decrease in economic activity across all manufacturing industries in South Africa (Industrial Development Corporation, 2009:3). 2009 is therefore an outlier and will be excluded from analysis of the MIDP's impact on export and import volumes.

According to Black & Bhanisi (2007:141), the increase in imports can be attributed to the following:

- The phase-down of the import duties under the MIDP: A decline in import tariffs causes the importation of vehicles and components to be less expensive, which may encourage an increase in the number of imports;
- The IEC scheme of the MIDP: Some manufacturers have employed export strategies for generating IRCCs, which can be used to import duty free. In other words, these manufacturers are exporting only to import duty free;
- Long-term strengthening of the Rand: When the local currency strengthens over the longer term, it becomes less expensive to import components and motor vehicles, which may result in an increase in the number of imports; and
- An increase in domestic demand: Owing to capacity constraints the local automotive industry was not able to meet the increased domestic demand, which necessitated the importation of vehicles and components.

While it is true that increased exports are one of the positive results of the MIDP, this result cannot be evaluated in isolation (Black, 2002:1). Two policy concerns regarding the increase in exports should also be considered.

Firstly, the components export basket has been dominated by peripheral components. This refers to minor components with high raw material content, which do not require a lot of value-adding activities. Value-adding activities can be defined as those activities requiring substantial investment and which incorporate a large number of sub-components (Black, 2002:12). Components requiring technological value-adding activities comprised only 8% of total component exports in 2000 (Barnes & Kaplinsky, 2000:803). For a number of years, catalytic converters and stitched leather seat parts have dominated the component export industry. In 2008, catalytic converters made up 55% and stitched leather seat parts 7.4% of component exports, ranking them numbers one and two of all component exports (AIEC, 2009:21). This policy concern was also identified as an industry development constraint by the DTI in its IPAP (DTI, 2010b:55).

Secondly, the sustainability of the surge in exports is questionable, as firms have indicated that they may disinvest should benefits in the South African automotive industry be significantly reduced. However, many considerations would affect the sustainability of the export market, namely labour costs, material costs, logistical costs, the scale of production, the level of productivity and the levels of sunk investment (Black, 2002:14). On the other hand, it is possible that the removal of the IEC scheme could result in the collapse of the component export market, impacting negatively on its sustainability. This could be owing to the strategy followed by many assemblers generating component exports on a large scale only to generate import rebates to reduce import tariffs in respect of the importation of motor vehicles (Black & Bhanisi, 2007:141-142).

Conclusion

- Increase in exports

Based on the above, it can be concluded that the MIDP has satisfied the following CSF: "*Increased exports*".

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(5) *Increased exports*".

- Decrease in imports

Based on the above, it can be concluded that the MIDP has not satisfied the following CSF: "*Decreased imports*". To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(6) *Decreased imports*".

- Sustainable exports and diversification of component exports

Although not direct objectives of the MIDP, the creation of sustainable exports and the diversification of the automotive components export basket are imperative for the long term success of the South African automotive industry. Research, as discussed above, has indicated that the MIDP did not successfully achieve creating sustainable exports and diversifying the automotive components export basket. To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

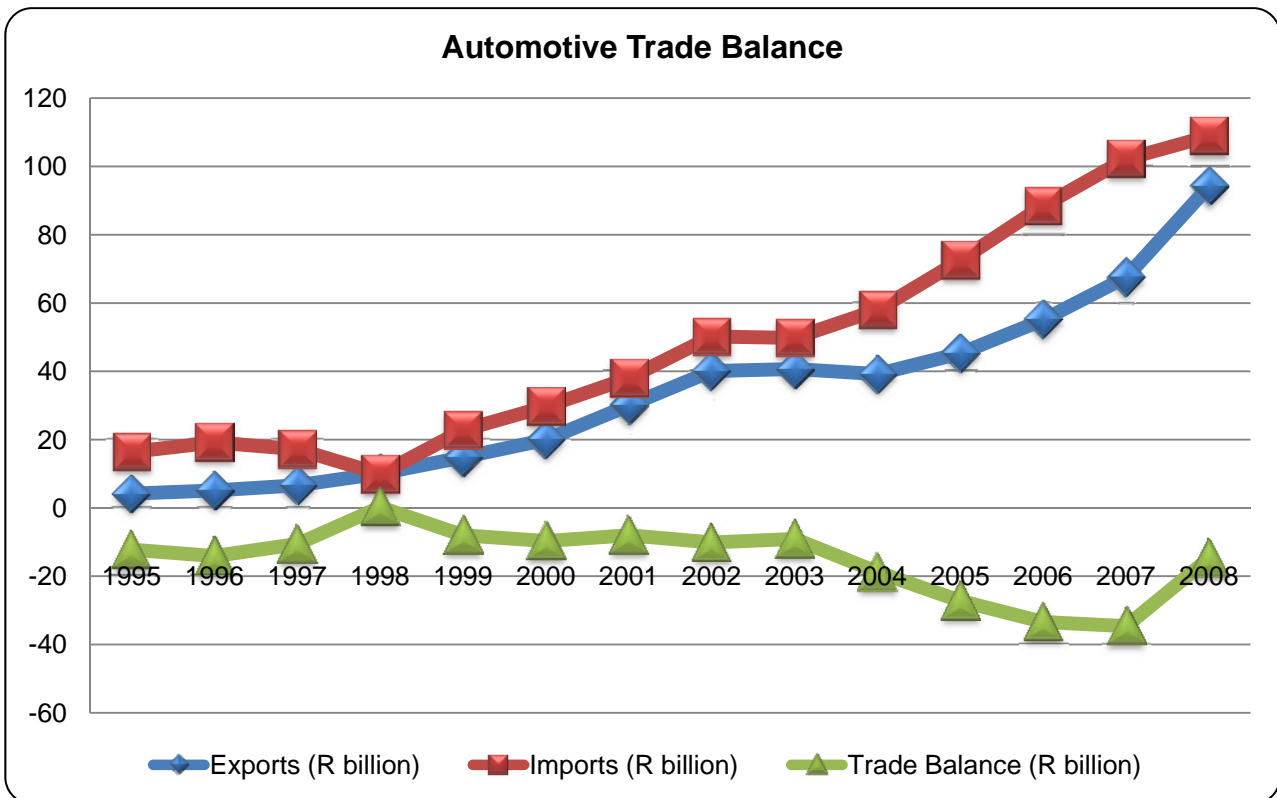
CSFs: “(8) *Creation of sustainable exports*” and “(9) *Creation of diversified component exports*”.

2.4.4.2 The automotive trade balance

While it is true that the automotive industry has contributed 7.5 % to South Africa’s gross domestic product (Mbendi.com, 2010b), the industry’s impact on the trade balance is less encouraging. The trade balance represents the difference between the value of exports and imports. The trade balance for the automotive industry was determined by the difference between the export and import figures as indicated in Figure 3. The result is a consistent negative industry trade balance (refer to Figure 4)

The automotive industry’s trade balance has been negative since 1995, with the exception of 1998. According to Black and Bhanisi (2007:139), the decreasing trade deficit between 1997 and 2000 can be attributed to a decrease in domestic production, which subsequently resulted in a decrease in the imports required.

Figure 4: The automotive industry trade balance



Source: Adapted from NAAMSA (2007:16) and AIEC (2009:4).

Conclusion

Based on the above, it can be concluded that the MIDP has not satisfied the following CSF: *Improved industry trade balance*.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(7) *Improved automotive industry trade balance*".

2.4.5 Local investment and related MIDP objectives

The discussion in the previous section is proof that the implementation of the MIDP has encouraged manufacturers to enter the global market, thereby attaining the MIDP's overall objective of global integration. However, to become globally competitive, the industry requires the support of world-class technology. Such technology requires investment (DTI, 2003:37). The next section will address the MIDP's effect on local investment and the subsequent link with local production volumes, rationalisation, local research and development activities and local content. This section will discuss whether the MIDP has satisfied the following CSFs:

- *Increase in the local production volumes of motor vehicles;*
- *Increase in the local production volumes of components;*
- *Rationalisation of the number of vehicle models produced locally;*
- *Increase in local investment;*
- *Increase in local research and development activities;*
- *Increase in local content of motor vehicles; and*
- *Increase in local content of components.*

The section will commence by explaining the link between investment and the other relevant MIDP objectives above. There will then be a discussion on each of the above CSFs separately.

2.4.5.1 *The investment link*

To understand investment, one should understand the strategies that determine investment. The automotive industry follows the practice of lead sourcing. This means that the South African manufacturer must use the same suppliers as the parent/controlling entity. Most of the time, the suppliers are located in foreign countries, which means that South African manufacturers have to import. An increase in imported content results in a decrease in the local content of vehicles (Black & Bhanisi, 2007:146).

In addition, globalisation increases the competitive pressures. Although many factors affect competitiveness, one of the most tangible is cost. If an assembler can reduce input costs, competitiveness and probably profits can be increased. A sure way of reducing input costs is through economies of scale. However, increased production will result in increased output. To generate profits, these outputs must be sold. The economic workings of supply and demand dictate that, when a local market has limited demand capacity, export markets must be developed as a means of selling outputs. The creation of export opportunities requires investment by foreign parent/controlling entities (Black, 2001:15).

Investment, production levels and local content are inter-dependent. An increase in investment may result in an increase in production capacity, which may in turn result in an increase in the volumes produced. On the other hand, when state-of-the-art facilities are available for producing vehicles and components of a standard required internationally, there will be a greater incentive to produce locally. If more locally produced components are used, there will be an increase in the level of local content of vehicles (Barnes & Morris, 2008: 47, 51; Black & Bhanisi, 2007:144-145). One objective of the MIDP is to increase the local content of motor vehicles through rationalisation of the industry. Such ambitions require advanced world-class technology. The domestic components industry complained that this is not feasible because of the lack of investment in upgrading technology (Black & Bhanisi, 2007:146).

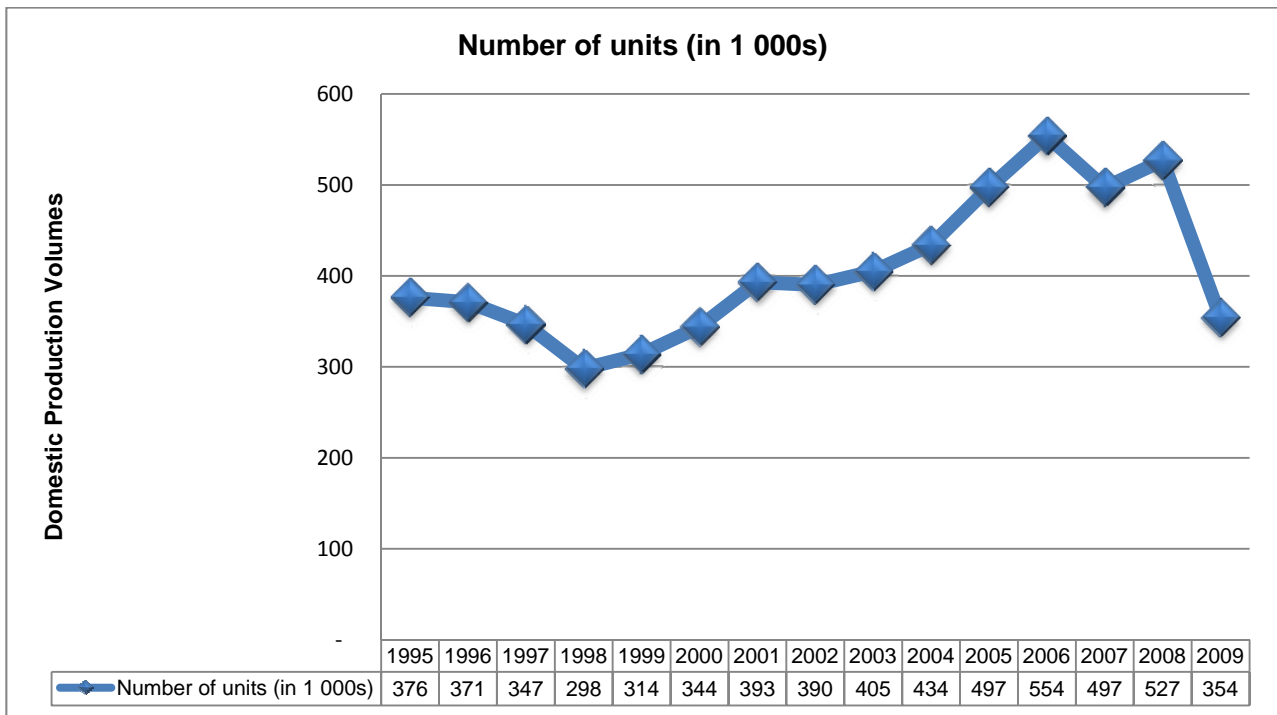
The local production volumes, local content, size of local capital investment, the nature of local investment and the extent of local research and development also require investigation.

2.4.5.2 Local production volumes

The total domestic production of light motor vehicles in 1995 was 376 207 units. By 2009, production had decreased to 354 158 units (NAAMSA, 2010b). This represents a decline of 6% in the number of units produced. This can be attributed to the worldwide economic recession, which resulted in a decrease in economic activity across all manufacturing industries in South Africa (Industrial Development Corporation, 2009:3). Therefore, 2009 is an outlier and will be excluded from the analysis of the MIDP's impact on local production

volumes. The total domestic production of light motor vehicles in 2008 was 527 079 units. This represents an increase of approximately 40% in production volumes from 1995 (NAAMSA, 2010b). As can be seen in Figure 5, production volumes of light motor vehicles have displayed an upward trend since the inception of the MIDP (NAAMSA, 2010b). This may be a win for the industry, but the plant production levels may not be enough to encourage an increase in capital investment (Black & Bhanisi, 2007:146; Black, 2001:21).

Figure 5: Automotive production volumes in South Africa



Source: Adapted from NAAMSA (2010b).

Another unfortunate consequence of the implementation of the MIDP is the replacement of locally owned component manufacturers with foreign-owned manufacturers (Black & Mitchell, 2002:13; De Lange 2010:6). Although local production levels of light motor vehicles have increased, the low local production volumes of components are less promising. The low local production volumes can be attributed to the protection afforded the assemblers via the MIDP, along with the removal of local content requirements under the MIDP. As assemblers no longer have to maintain a certain percentage of local content to qualify for the benefits of the MIDP, a cost-saving approach has been followed. That is, assemblers are approaching purchases in accordance with input cost reduction and are

not necessarily purchasing from local component manufacturers (Black, 2001:17-21; NAAMSA, 2007:27).

According to De Lange (2010:6), OEMs are reducing the number of local component manufacturers in their supply chain for technological reasons. Another trend is that of making agreements with local component manufacturers by which the price is fixed and should be reduced by a specific percentage annually over the term of the agreement. Bill Stephens, the current manager of communication at VWSA, confirmed that OEMs tended to use global suppliers to a greater extent than local suppliers. However, some OEMs, such as VWSA, are increasingly using local component manufacturers, thereby creating greater opportunities for the future (De Lange, 2010:6). The level of local content will be discussed in more detail in the next section. As a result of the recession during 2009, the production volumes of component manufacturers decreased by 35% (National Automotive Component and Allied Manufacturers in Parker, Karrim & Mabandu, 2009). Powels, the president of National Automotive Component and Allied Manufacturers (NAACAM), indicated that approximately 65% of components used by OEMs are imported (Venter, 2009a). Table 6, a breakdown of imported and locally manufactured components, as used by OEMs in the manufacturing of motor vehicles, is provided.

Table 6: Percentage of local components used by OEMs

Component type	Proportion of domestically manufactured vehicle	Components imported	Components manufactured locally
Electronic content	19%	14%	5%
Bodywork of vehicle	15%	9%	6%
Exterior of vehicle	10%	7%	3%
Interior of vehicle	23%	16%	7%

Source: Adapted from Venter 2009a.

Despite the above, the FOB value of components exported increased from R8 billion in 1998 DTI 2003:23) to R44 billion in 2008 (AIEC & SARS, Not dated:1), which confirms a major increase in the local production volumes of components.

It can therefore be concluded that the MIDP achieved its objectives to increase local production volumes for motor vehicles and components.

Conclusion

Based on the above, it can be concluded that the MIDP has satisfied the following CSFs: *Increase in the local production volumes of motor vehicles and increase in the local production volumes of components.*

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

Critical success factors: “(10) *Increase in the local production volumes of motor vehicles*” and “(11) *Increase in the local production volumes of components*”.

2.4.5.3 Local content

The average local content of components produced locally during 2008 is between 70% and 80%. In 2008 and 2009, the average local content of vehicles assembled locally was 35% on average (South African Automotive Week, 2009). In measurement terms, local content levels below 40% are very low (Black & Bhanisi, 2007:144).

Prior to the introduction of the MIDP, programmes included local content requirements to which manufacturers had to adhere if they were to benefit from them. These requirements have been removed from the MIDP. This, coupled with declining import tariffs, has resulted in a decrease in local content. This is because, with less protection and no local content requirements, it has become easier to use imported components to facilitate the reduction of manufacturing input costs (Black & Bhanisi, 2007:144).

The 2008/2009 level of local content is still much better than the 20% local content level which prevailed during the 1960s. However, under Phase VI, one of the earlier automotive programmes, a local content level of 50% (based on value) was required to benefit from

the programme. As well as increasing local content, Phase VI contributed to the creation of an internationally uncompetitive, fragmented industry (Black & Bhanisi, 2007:133-136).

Currently, under the MIDP, local assemblers are for the most part using imported components in vehicle manufacture. This is mirrored in one of the strategies of local component manufacturers, who subsidise their imports by exporting components to generate IRCCs (refer to section 2.4.4). The credits are subsequently sold to OEMs. IRCC revenues provide component manufacturers with the competitive advantage they would otherwise not have in the highly competitive international market (Kaplan, 2003:23-24).

Local component manufacturers indicated that they do not have the required technology to supply components at the level required by OEMs (Black & Bhanisi, 2007:146). This view has also been pressed by Roger Pitot, the executive director of NAACAM, who stated that the South African components industry already has the required skills, facilities and infrastructure in place but still requires the necessary technology (South African Automotive Week, 2009).

However, it is not possible to raise local content levels without also increasing production volumes (South African Automotive Week, 2009). Even plant production volumes of 40 000 to 50 000 units per annum may not be enough to encourage the investment needed for increasing local content up to 60%. Current production levels therefore do not justify the investment required to elevate South African technology to the levels required by the global market (Black & Bhanisi, 2007:146-147; Black, 2001:21).

The technological investment that has taken place is not of a genuine manufacturing nature, as there is little material conversion. The above-mentioned has mostly occurred outside South Africa, thereby contributing to the low local content levels and value-adding taking place in South Africa (Barnes & Black in Black & Bhanisi, 2007:146). Stephens confirmed this view, stating that OEMs prefer global suppliers for technological reasons (De Lange, 2010:6).

Although the 2008 amount of local content of vehicles remains greater than the 20% which prevailed in the 1960s, it is still much lower than the level required under Phase VI. Based

on the discussions above, therefore, the MIDP has not created an increase in the local content of motor vehicles. The local content of components, on the other hand, is much more favourable. The MIDP has therefore created an increase in the local content of components.

The lack of technological investment, which will be discussed in the next section, has been subsumed into the trend for components destined for the export markets to have higher local content levels than those supplied to local assemblers. The reluctance to supply to local assemblers can be attributed to the high quality and price requirements implemented at OEMs by foreign parent/controlling entities (Black & Bhanisi, 2007:147).

Conclusion

Based on the above, it can be concluded that the MIDP has not satisfied the CSF, *increase in local content of motor vehicles*, but that the MIDP has satisfied the CSF, *increase in local content of components*.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

“(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

“(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSFs: “(12) *Increase in local content of motor vehicles*” and “(13) *increase in local content of components*”.

2.4.5.4 Rationalisation of the automotive industry

The number of models of light motor vehicles and light commercial vehicles produced locally has decreased from 42 model platforms in 1995 (NAAMSA in Anon., 2009b:2) to 17 models in 2009 (NAAMSA, 2010a). This decrease can be termed rationalisation of the industry. In other words, an automatic result of the production of fewer models is the creation of the capacity to specialise and therefore produce greater volumes to facilitate economies of scale (Black & Mitchell, 2002:2-5). This is corroborated by the 133% increase in the average volume per model produced (from 8 957 units in 1995 to 20 833 units in 2009) (NAAMSA, 2010a; NAAMSA, 2010b).

Conclusion

Based on the above, it can be concluded that the MIDP has satisfied the following CSF: *Rationalisation of the number of vehicle models produced locally*.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

Question 12

(A) Please indicate whether you believe that the *existing* MIDP has facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP will facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSF: "(14) *Rationalisation of the number of vehicle models produced locally*".

2.4.5.5 Local investment and research and development activities

The decision to source components from South Africa lies mainly with foreign holding companies, which for the most part decide whether to move component manufacturing operations to South Africa (Black, 2002:4). This is important if one considers the ownership of the seven largest OEMs in South Africa (Black, 2002:8-10):

- Japanese-based firms: Nissan Motor Company and Toyota Motor Corporation;
- American-based firms: Ford and General Motors; and
- German-based firms: BMW, VWSA and Daimler Chrysler (now Mercedes Benz).

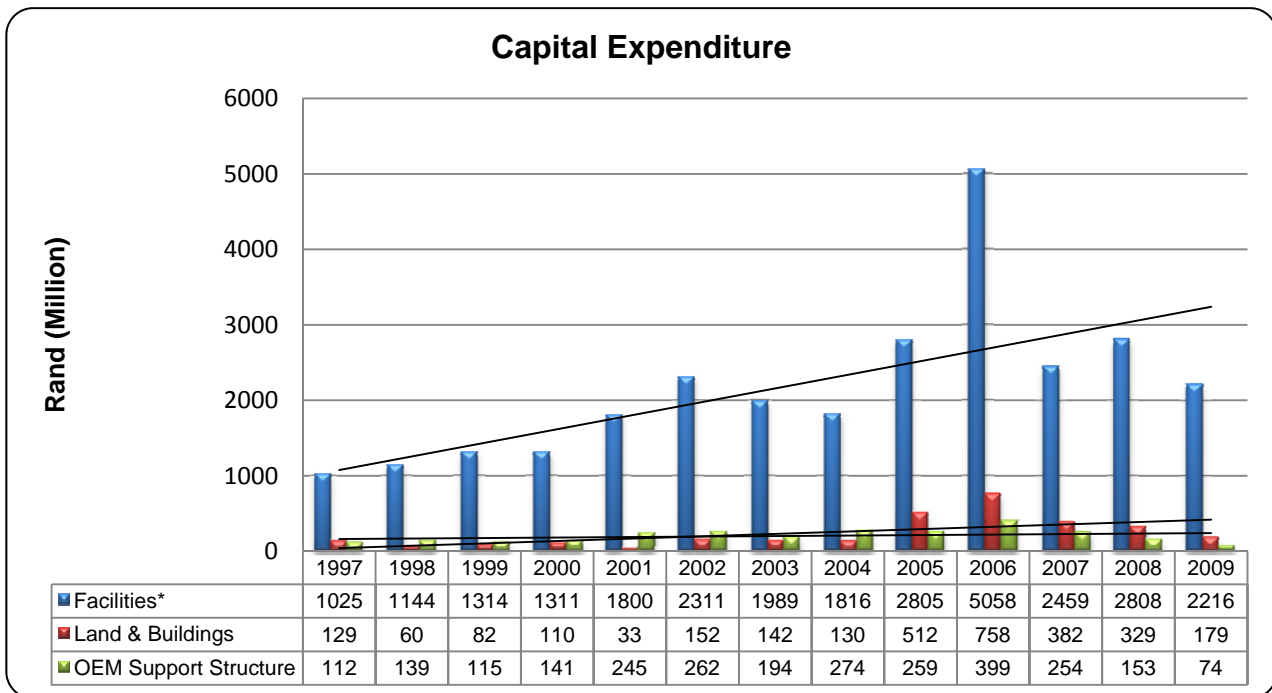
All the above OEMs have foreign holding companies and are integrated into the operations of the global holding companies (Barnes & Kaplinsky, 2000:801). Most strategic and sourcing decisions are taken by these foreign holding companies. In turn, it is the OEMs that determine the nature and extent of manufacturing activities by component manufacturers. As approximately 70% of value adding in the automotive industry can be attributed to component manufacturers, the key to developing the South African industry may lie in the promotion and support of component manufacturers (Barnes & Morris, 2008:34).

The foreign holding companies take responsibility for the design function to ensure that the global quality of their products is uniform. This is achieved by centralising all intellectual property and designs with a lead source (supplier). This means that there is rarely any opportunity for local firms to take part in design services, which removes the key value-adding source of component manufacturing (Barnes & Morris, 2008:37). For competitive reasons, lead sources are hesitant to share their knowledge, and they do not believe that local firms will be able to deploy the new technologies required by new vehicles (Barnes & Morris, 2008:37).

From the above, it is clear that to lure value-adding to the South African automotive industry, foreign holding companies should be encouraged to move some of their research and development activities to local firms. Innovation is one of the pillars of the MIDP. To achieve high international standards requires technology of a global standard. Before globalisation, the South African industry undertook research and development mainly to facilitate the customisation of vehicles for South African conditions. The move towards a more open economy with international standards resulted in the disappearance of research and development teams and an increase in the investment in equipment to facilitate adherence to production conformance requirements. It has also resulted in the emergence of process engineering management teams (Barnes & Morris, 2008:43). Subsequently, local OEMs have spent less on local research and development activities. Research and development expenditure is included in the OEM Support Structure category as depicted in Figure 6. Investment is directed mainly towards infrastructure and facilities like land and buildings, which do not contribute directly to value-adding (refer to Figure 6).

Owing to the high investment costs involved in conforming to global standards, it is easier for OEMs to import semi-assembled components that already meet the standards rather than investing in sub-assemblies and dealing with re-engineering, quality and supply complexities (Black, 2001:9).

Figure 6: Break-down of the different capital expenditure categories of the OEMs



Source: Adapted from NAAMSA (2007:17, 2009b). Note: *Facilities include product, local content, export and production facilities.

Despite the above, investment has increased by 190% from 1997 to 2009 (refer to Figure 6). From Figure 6, three investment categories are evident (Kaggwa *et al.*, 2007:686; NAAMSA, 2007:17):

- Facilities: This category represents plants, machinery and tooling;
- Land and buildings; and
- Support infrastructure: This includes investment in research and development and technical fees paid to foreign experts for the launch of new models.

Table 7: Percentage of OEM investment of each category relative to total investment

Investment Category	1997	1998	1999	2000	2001	2001	2003	2004	2005	2006	2007	2008	2009
Facilities	81%	85%	87%	84%	87%	85%	86%	82%	78%	81%	79%	85%	90%
Land and Buildings	10%	4%	5%	7%	2%	6%	6%	6%	14%	12%	12%	10%	7%
Support Structure	9%	10%	8%	9%	12%	10%	8%	12%	7%	6%	8%	5%	3%

Source: Adapted from NAAMSA (2007:17, 2009b).

Table 7 indicates the percentage contribution of each OEM investment category relative to total investment. Investment in facilities made up the bulk of total investment. Overall, investment in the support structure for the period 1997 to 2009 was lightweight, being less than 10% of total expenditure. In addition, the biggest portion of investment in support structure can be attributed to technical fees paid to foreign experts, not to local research and development (Kaggwa *et al.*, 2007:686; NAAMSA, 2007:17; NAAMSA, 2009b).

Conclusion

Based on the above, it can be concluded that the MIDP has satisfied the CSF, *Increase in local investment*, but has not satisfied the CSF, *increase in local research and development activities*.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSFs: “(15) *Increase in local investment*” and “(16) *Increase in local research and development activities*”.

Without investment and research and development activities, there would be no innovation. The above investment trend indicates a lack of support of innovation by stakeholders, despite the good intentions of the MIDP, as industry investment has not evolved as hoped (Kaggwa *et al.*, 2007:687).

The success of a programme is dependent not only upon economic contributions, but also on its socio-economic impact on a country. The next section will take this into account by analysing the effect of the implementation of the MIDP on employment.

2.4.6 The MIDP’s contribution to sustainable employment levels and productivity

This section will discuss whether the MIDP has satisfied the following CSFs: *Sustainable employment levels and increase in local productivity*.

2.4.6.1 Employment levels and sustainability

One of the objectives of the MIDP is to create sustainable employment levels (DTI, 2003:10). Sustainable can be defined as follows:

- “...designating, of, or characterized by a practice that sustains a given condition, as economic growth or a human population...” (Yourdictionary.com, 2010).
- “...development must meet the needs of the present generation without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development in Iisd, 2010).

The “needs of the present generation” cannot be easily determined. However, for purposes of the present study, sustainability will be interpreted as being the maintenance of employment levels which prevailed prior to the implementation of the MIDP.

While employment initially declined by 17% after the introduction of the MIDP in 1995, the levels have stabilised since 2000 (Flatters & Netshitomboni, 2006:11). The executive director of NAAMSA, Nico Vermeulen, commented that the initial decrease in employment levels can be attributed to the required automation of production processes to facilitate rationalisation of the industry, which requires labour productivity. However, there has been a 4% compound growth in employment levels since 1999 while permanent employment grew by more than 10% (Mail and Guardian, 2003). This is in line with the average annual growth rate in the GDP, for the fourth quarter of 2007, of 4% (Southafrica.info, 2008).

In 1995, the automotive industry provided employment for approximately 274 600 individuals (Flatters & Netshitomboni, 2006:12). By 2008 this figure had increased by 21% to approximately 331 000 individuals (DTI, 2010b:54). However, the worldwide economic recession during 2009 had an adverse impact on employment levels in the automotive industry. As a result of the recession, production volumes of component manufacturers decreased by 35%, resulting in an overall employment reduction of 20% across the component manufacturing industry. This equates with the loss of approximately 16 000 employment opportunities from 2008 to mid-2009 (NAACAM in Parker *et al.*, 2009). This decline was common in economic activity across all manufacturing industries in South

Africa (Industrial Development Corporation, 2009:3). Therefore, 2009 is an outlier and will be excluded from the analysis of the MIDP's impact on employment levels.

2.4.6.2 Labour productivity

Labour productivity increased from 10 vehicles per employee in 1995 (NAAMSA in Anon., 2009b), to 20 vehicles per employee in 2009 (Venter, 2009a). The increased employee productivity can be attributed to the automation of production processes and economies of scale as a result of specialisation (NAAMSA, 2007:17). David Powels, the president of NAAMSA, believes that in order to increase production volumes to a level that will bring about an increase in local content and achievement of economies of scales, employees' productivity must increase to approximately 30 vehicles or more per employee (Venter, 2009a).

It appears that improved labour productivity and production efficiency negatively impacts on both employment growth and sustainability. With the pressure from foreign holding companies to meet high quality and price standards, the move towards increased productivity will continue, increasing the likelihood of decreased employment opportunities in the assembly sector. The components sector will present the most opportunities for employment growth (Black, 2001:16).

2.4.6.3 In conclusion

From the above it is clear that there are many factors that affect the sustainability of employment, including the level of productivity and the economic outlook. Since the implementation of the MIDP:

- Labour productivity increased by 100%, from 1995 to 2009; and
- Employment has increased by 21% from 1995 to 2008.

It can therefore be concluded that the MIDP has successfully achieved the CSFs of increasing productivity and creating sustainable employment.

Conclusion

Based on the above, it can be concluded that the MIDP has satisfied the following CSFs: *Increase in local productivity and Sustainable employment levels*.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

“(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

“(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain*.

CSFs: “(17) *Increase in local productivity*” and “(18) *Sustainable employment levels*”.

2.4.7 Alignment of the MIDP with the World Trade Organization’s requirements

As stated in section 2.2.4, a WTO compliant programme may not be one of the direct objectives of the MIDP. However, such an objective is inherent, seeing that South Africa is a member of the WTO. The following sections will discuss whether certain of the policy instruments of the MIDP have satisfied the following CSF: *Programme complies with the requirements of the WTO*.

2.4.7.1 The Import-Export Complementations scheme

Some recent claims by the South African automotive industry representatives included statements such as “... [The industry] is not asking for handouts;” and “... [The industry] is not receiving state subsidies” (Flatters, 2009).

To obtain a better understanding of what subsidies are, it is necessary to include excerpts from the Agreement on Subsidies and Countervailing Measures (“Agreement”). The agreement addresses the regulation of the provision of subsidies through multilateral disciplines and the use of countervailing measures to offset injury caused by subsidised imports (WTO, 2008b). The agreement is applicable to all WTO members (WTO, 2008a:229).

Article 1 of this Agreement defines a subsidy as follows (WTO, 2008a:229):

“1.1 For the purpose of this Agreement, a subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member...where:

- (i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees;
- (ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits);
- (iii) a government provides goods or services other than the general infrastructure, or purchased goods;
- (iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;

and

(b) a benefit is thereby conferred.

1.2 A subsidy as defined in paragraph 1 shall be subject to the provisions of Part II...only if such a subsidy is specific in accordance with the provisions of Article 2”.

The benefits granted to the automotive industry via the policy instruments contained in the MIDP consist mainly of the foregoing of import tariff revenues by the South African government. Thus, the MIDP policy instruments are subsidies, as defined by article 1 subsection 1.1 (a)(1) and (b) of the Agreement. The abovementioned conclusion is based

on the assumption that the MIDP policy instruments confer benefits and therefore fall within the ambit of the subsidy definition.

Subsidies can further be classified as specific subsidies if the following principle as per Article 2 of the Agreement applies:

“2.1 (a) Where the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to a subsidy to certain enterprises, such subsidy shall be specific” (WTO, 2008a:230).

The access to MIDP benefits is limited by the stipulations of the relevant Chapters and Rebate Items contained in the Schedules of the Customs and Excise Act No. 91 of 1964 (SARS, 2004:1, 6). It is therefore evident that the MIDP can be classified as a specific subsidy.

According to the WTO’s overview of the Agreement (2008b), specific subsidies can be of either a prohibited or an actionable nature:

- Prohibited subsidies are those designed specifically to distort international trade, which would probably be to the detriment of other countries’ economies. Examples of such subsidies are those designed to encourage the exportation of goods.
- Actionable subsidies are subsidies which may or may not have an adverse effect on other countries’ trade or economy. Such subsidies will be allowed except if a member country were to lodge a complaint and could prove that such subsidy had damaged its trade.

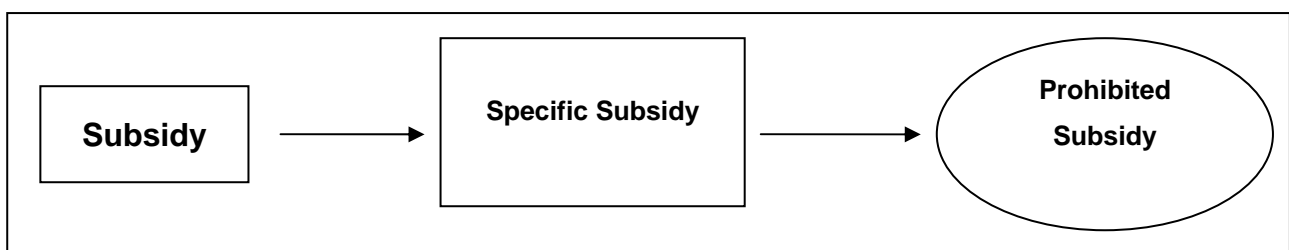
According to Article 3 of the WTO’s Agreement (2008a:231), the following subsidies are prohibited for those countries which are members:

- Subsidies which are dependent upon export performance; and
- Subsidies by which the use of domestic goods takes precedence over the importation of goods.

One of the policy instruments included in the MIDP is the IEC scheme (refer to section 2.3.4). Under the IEC scheme credits are granted according to the value of exports in the automotive industry. It should be noted, however, that the benefits of the MIDP can be obtained only via the IEC scheme upon importation. The IEC scheme functions via both imports and exports. The South African automotive industry's resulting considerable and sustained negative trade balance (refer to section 2.4.4.2) would not support an unqualified conclusion on the net-export subsidy effect of the MIDP in general and the IEC scheme in particular.

Although benefits under the IEC scheme can be obtained only upon importation, the granting of the IRCCs is dependent upon the export performance of the industry. For this reason, the export performance requirement of the IEC scheme included in the MIDP could possibly be classified as a prohibited subsidy in terms of the WTO Agreement (Le Roux, 2007:2). This risk was confirmed by Australia's threats to lodge a complaint with the WTO when their automotive industry was seen to be affected by leather seat cover exports by South African firms. The strong competition as a result of the MIDP increased the risk of Australian companies losing contracts (Flatters, 2005:13-14). Figure 7 provides a graphical representation of the WTO subsidy classification hierarchy.

Figure 7: The WTO subsidy classification hierarchy



Source: Adapted from the WTO (2008a).

The only available alternatives to avoiding classification as a prohibited subsidy are either exemption from the provisions of Article 3 of the WTO Agreement or an amendment to the policy instruments included in the MIDP. The exemption requirements are stipulated in Article 27 of the WTO Agreement. These requirements are applicable when subsidies have not been granted in excess of eight years or where the relevant country is exempted by Annex VII. South Africa is not listed in Annex VII as a member exempted from the

provisions of Article 3 and the MIDP has been in place for more than eight years. South Africa will thus be subject to the provisions of Article 3 (WTO, 2008a:257, 272). The only remaining remedy is therefore to amend the MIDP.

In addition to the above, there is also concern that the DFA, another policy instrument of the MIDP, may not be in line with WTO requirements.

2.4.7.2 The DFA

Article 3(1) of the WTO General Agreement on Tariffs and Trade (GATT) of 1986 reads as follows: “The contracting parties recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, and internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions, *should not be applied to imported or domestic products so as to afford protection to domestic production.*”

The DFA is an allowance for the reduction of import duties, which is granted to light motor vehicle manufacturers (OEMs) who manufacture for the local market. The allowance can be used to reduce the customs duty value of components and subsequently the customs duty value of motor vehicles (refer to section 2.3.2). The rationale behind the DFA is that manufacturers will aim to produce more vehicles locally for the domestic market in order to receive benefits upon importation of vehicles. According to the above article, imported and locally produced products should be treated equally. However, the DFA creates an advantage for those local manufacturers that is not available to foreign manufacturers. There is thus the risk that the DFA may be a discriminatory subsidy.

2.4.7.3 In conclusion

The threat of non-compliance with WTO requirements has been one of the drivers behind the revision of the MIDP (Le Roux, 2007:2). Compliance is imperative for the catalyzation of investment in the South African automotive industry. In a study carried out by Lamprecht

(2006:304), WTO compliance was consistently ranked as a factor of high importance by stakeholders participating in the study.

Although South Africa has never been found guilty of contravening the WTO's requirements, there is the risk that the provisions of the IEC scheme and the DFA may be in contravention of those requirements.

Conclusion

Based on the above, it can be concluded that the MIDP has not satisfied the following CSF:
Programme complies with the requirements of the WTO.

To facilitate a conclusion the opinions of stakeholders were obtained by including the following question in the survey:

“(A) Please indicate whether you believe that the *existing* MIDP *has* facilitated the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

“(B) Please indicate whether you believe that the *proposed* APDP *will* facilitate the achievement of the critical success factors below, by indicating either of the following: *Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.*

CSF: (19) *Programme complies with the requirements of the World Trade Organization*”.

2.5 IN CONCLUSION

The executive director of NAAMSA, Nico Vermeulen, commented on the performance of the MIDP as follows: "Looking at the big picture, the MIDP has been an exceptional success. You can criticise aspects, but you have to ask what the alternative was. Without the MIDP, car prices would be far higher than they are today because some manufacturers would have pulled out, reducing competition. Without the MIDP, there would have been massive job losses" (Mail and Guardian, 2003).

Drawing a conclusion as to whether the MIDP was an overall success or not, is a far from easy matter. First, no studies could be found in the public domain comparing the performance by the industry either with or without the assistance of the MIDP. Secondly, the automotive industry is no longer isolated from the national and international economies, which makes it very difficult to attribute a certain success or failure to the MIDP alone, as an economy is an intricate web of contributors.

In conclusion, the MIDP has successfully achieved the following CSFs:

- More affordable components;
- Increased exports;
- Increase in the local production volumes of motor vehicles;
- Increase in the local production volumes of components;
- Increase in local content of components;
- Rationalisation of the number of vehicle models produced locally;
- Increase in local investment;
- Increase in local productivity; and
- Sustainable employment levels.

Research conducted by the DTI and a task team for reviewing the MIDP confirms the above conclusions. The research found that “the automotive industry is the largest and leading manufacturing sector in the domestic economy. Since the introduction of the MIDP, the industry has *rationalised and restructured* in a more efficient basis achieving significant *growth in production volumes, exports and investments whilst maintaining significant employment levels*” (DTI, 2008).

The MIDP, however, did not achieve the following CSFs:

- Decreased imports;
- Improved automotive industry trade balance;
- Creation of sustainable exports;
- Creation of diversified component exports;
- Increase in local content of motor vehicles;
- Increase in local research and development activities; and
- Programme complies with the requirements of the WTO.

The research mentioned also confirms certain of the above conclusions. The results indicated that “notwithstanding the successes achieved since 1995, the industry faces a

number of challenges. Economies of scale in assembly and the depth of domestic component manufacturing are not yet internationally optimal. *Relatively few automotive components dominate the export basket whilst the local content of the exported vehicles has somewhat stagnated.* Also most of the growth in domestic sales has been serviced by imports resulting in a *growing trade deficit*,...The revised MIDP would therefore seek to provide industry with a reasonable level of support in a market neutral manner (that is, *it cannot be an export incentive anymore as this might be inconsistent with WTO*, therefore there will be no discrimination for products sold domestically and those exported)” (DTI, 2008).

It is uncertain whether the MIDP has achieved the following CSFs:

- Higher-quality motor vehicles;
- Higher-quality components; and
- More affordable motor vehicles.

To address the challenges identified by the automotive task team, the DTI has indicated that further development of the automotive industry is required. The APDP is to be used as the vehicle for such further development (DTI, 2008).

2.6 SUMMARY

The current chapter has analysed the implementation results of the MIDP with reference to CSFs, which were also identified. The following chapter will provide an overview of the research designs and the methods that were applied to achieve the objectives of the present study.

CHAPTER 3

3 RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

Empirical research undertaken by Professor Anthony Black, currently a Professor at the School of Economics at the University of Cape Town (Black, 2008), in 1995 before the implementation of the Motor Industry Development Programme (MIDP) indicated that stakeholders are accurate in forecasting the impact of the implementation of a new automotive programme (Black, 2001:8). Although a literature review would provide some insight into the results of the implementation of the MIDP and the anticipated implementation results of the Automotive Production and Development Programme (APDP), a more value-adding result could be obtained by conducting a survey among stakeholders.

The objectives of the present study are to determine whether the MIDP has achieved and whether stakeholders are of the opinion that the APDP will achieve their objectives as formulated by the Department of Trade and Industry (DTI). In the previous chapter, the objectives of the MIDP, as formulated by the DTI, were identified. These identified objectives were subsequently used to formulate critical success factors (CSFs) against which the implementation results of the MIDP were evaluated. In order to achieve the objectives of the present study, the formulated CSFs were used in designing a survey. In this chapter, the research design used in the present study to achieve these objectives is described.

3.2 DATA COLLECTION METHOD

The first step in the present study was to carry out a literature review to facilitate the identification of the objectives of the MIDP as well as the subsequent formulation of CSFs (refer to section 2.2). These formulated CSFs were used later in designing the questions to

be included in the data collection instrument (refer to Appendix C) and to formulate the hypotheses for the present study (refer to section 3.4).

A self-administered web-based survey was chosen as the primary instrument for collecting data on the opinions of the stakeholders. Data collection was automatically performed by the survey software and questionnaire tool, SurveyMonkey[®].

The following points were taken into account upon deciding on the particular instrument:

- Web-based surveys can be distributed quickly at a low cost (Andrews, Nonnecke & Preece, 2003:4).
- The design and logic of the web-based survey prevents the supply of multiple answers to one question (Andrews *et al.*, 2003:4). This was achieved by electing to enable a function on the SurveyMonkey[®] tool which prevented stakeholders from completing the survey and questions contained in it more than once.
- Respondents are afforded time to consult legislation and other documentation which may improve data quality (Czaja & Blair, 2005:36-38).
- Web-based surveys eliminate transcription and survey alteration errors due to the automated transfer of responses directly onto the SurveyMonkey[®] tool (Andrews *et al.*, 2003:4).
- The results should be representative of the entire Southern African region. As stakeholders are dispersed throughout South Africa, this instrument enabled contact with stakeholders across the entire country at a relatively low cost.
- The required distribution details of stakeholders were readily available (Czaja & Blair, 2005:36-38). This was because the stakeholders are members of recognised automotive organisations that publish member details in the public domain (i.e. National Association of Automobile Manufacturers of South Africa (NAAMSA) and National Automotive Component and Allied Manufacturers (NAACAM)).
- Respondents may be more willing to provide sensitive information accompanied by a guarantee of anonymity (Czaja & Blair, 2005:36-38). This was achieved by electing to enable a function on the SurveyMonkey[®] tool which prevented the collection of stakeholder details. Stakeholders could therefore not be linked in any way with the

responses received. Stakeholders were informed of the protection of their anonymity by the inclusion of a statement in the electronic mail message that accompanied the survey (refer to Appendix B).

3.3 DESCRIPTION OF BROAD RESEARCH DESIGN

The research was categorised as quantitative for the following reasons (Saunders, Lewis & Thornhill, 2007:95-97):

- All aspects of the study were carefully designed before data collection commenced;
- Structured questionnaires containing mostly close-ended questions were used as the collection instrument;
- The researcher was able to transform the collected data into numerical values to facilitate statistical analysis; and
- The desired outcome of the research was determinable according to the conclusions contained in the literature review. This was formalised by formulating null hypotheses (refer to 3.4).

The research was classified as applied. Applied research is conducted to facilitate real-life decision-making (Adams, Khan, Raeside & White, 2007:27). The results of the present study will serve as a summary of the implementation results of the MIDP. The above may corroborate or expand existing knowledge but would not impact decision-making as the MIDP will be concluding in 2012. However, the APDP will be fully implemented only in 2013 and is still in its final development stages. The present study may therefore contribute to decision-making as follows:

- Legislators will be able to use research results to decide whether stakeholders are of the opinion that the APDP will have the desired implementation results; and
- Legislators will be able to determine whether stakeholders believe that the APDP was designed in such a way as to address concerns raised regarding the MIDP.

The present study makes use of both primary and secondary data. Primary data is collected specifically for the research project being undertaken while secondary data is

originally collected for a purpose other than the proposed study at hand (Saunders *et al.*, 2007:607 & 611). The literature review drew from secondary data in creating a knowledge base. A survey was subsequently conducted to provide conclusions.

3.4 HYPOTHESES OF THE STUDY

The hypotheses will be divided between the MIDP and the APDP, seeing that the research objectives are sub-divided between these two programmes. To facilitate the formulation of the hypotheses, the CSFs as formulated in section 2.2 will serve as a framework for the relevant hypotheses.

The hypotheses to be proved or disproved regarding the MIDP are as follows:

1. The MIDP has created higher-quality motor vehicles (refer to section 2.4.1 and Appendix C - Survey Question 12 (A)(1)).
2. The MIDP has created higher-quality components (refer to section 2.4.1 and Appendix C - Survey Question 12 (A)(2)).
3. The MIDP has created more affordable motor vehicles (refer to section 2.4.2 and Appendix C - Survey Question 12 (A)(3)).
4. The MIDP has created more affordable components (refer to section 2.4.3 and Appendix C - Survey Question 12 (A)(4)).
5. The MIDP has created increased exports (refer to section 2.4.4 and Appendix C - Survey Question 12 (A)(5)).
6. The MIDP has created decreased imports (refer to section 2.4.4 and Appendix C - Survey Question 12 (A)(6)).
7. The MIDP has created an improved automotive industry trade balance (refer to section 2.4.4 and Appendix C - Survey Question 12 (A)(7)).
8. The MIDP has created sustainable exports (refer to section 2.4.4 and Appendix C - Survey Question 12 (A)(8)).
9. The MIDP has created diversified component exports (refer to section 2.4.4 and Appendix C - Survey Question 12 (A)(9)).
10. The MIDP has created an increase in the local production volumes of motor vehicles (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(10)).

11. The MIDP has created an increase in the local production volumes of components (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(11)).
12. The MIDP has created an increase in the local content of motor vehicles (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(12)).
13. The MIDP has created an increase in the local content of components (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(13)).
14. The MIDP has created rationalisation of the number of vehicle models produced locally (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(14)).
15. The MIDP has created an increase in local investment (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(15)).
16. The MIDP has created an increase in local research and development activities (refer to section 2.4.5 and Appendix C - Survey Question 12 (A)(16)).
17. The MIDP has created an increase in local productivity (refer to section 2.4.6 and Appendix C - Survey Question 12 (A)(17)).
18. The MIDP has created sustainable employment levels (refer to section 2.4.6 and Appendix C - Survey Question 12 (A)(18)).
19. The MIDP is a programme that complies with the requirements of the World Trade Organization (WTO) (refer to section 2.4.7 and Appendix C - Survey Question 12 (A)(19)).

The hypotheses to be proved or disproved regarding the APDP are as follows:

1. The APDP will create higher-quality motor vehicles (refer to Appendix C - Survey Question 12 (B)(1)).
2. The APDP will create higher-quality components (refer to Appendix C - Survey Question 12 (B)(2)).
3. The APDP will create more affordable motor vehicles (refer to Appendix C - Survey Question 12 (B)(3)).
4. The APDP will create more affordable components (refer to Appendix C - Survey Question 12 (B)(4)).
5. The APDP will create increased exports (refer to Appendix C - Survey Question 12 (B)(5)).
6. The APDP will create decreased imports (refer to Appendix C - Survey Question 12 (B)(6)).

7. The APDP will create an improved automotive industry trade balance (refer to Appendix C - Survey Question 12 (B)(7)).
8. The APDP will create sustainable exports (refer to Appendix C - Survey Question 12 (B)(8)).
9. The APDP will create diversified component exports (refer to Appendix C - Survey Question 12 (B)(9)).
10. The APDP will create an increase in the local production volumes of motor vehicles (refer to Appendix C - Survey Question 12 (B)(10)).
11. The APDP will create an increase in the local production volumes of components (refer to Appendix C - Survey Question 12 (B)(11)).
12. The APDP will create an increase in the local content of motor vehicles (refer to Appendix C - Survey Question 12 (B)(12)).
13. The APDP will create an increase in the local content of components (refer to Appendix C - Survey Question 12 (B)(13)).
14. The APDP will create rationalisation of the number of vehicle models produced locally (refer to Appendix C - Survey Question 12 (B)(14)).
15. The APDP will create an increase in local investment (refer to Appendix C - Survey Question 12 (B)(15)).
16. The APDP will create an increase in local research and development activities (refer to Appendix C - Survey Question 12 (B)(16)).
17. The APDP will create an increase in local productivity (refer to Appendix C - Survey Question 12 (B)(17)).
18. The APDP will create sustainable employment levels (refer to Appendix C - Survey Question 12 (B)(18)).
19. The APDP will be a programme that complies with the requirements of the WTO (refer to Appendix C - Survey Question 12 (B)(19)).

3.5 HYPOTHESES ANALYSES

It should be noted that the process followed to formulate the hypotheses in the above section was as follows:

- The hypotheses for the MIDP were based on the premise that all objectives have been achieved (i.e. “the MIDP has”).

- The hypotheses for the APDP were based on the premise that it is anticipated that the APDP will achieve all its objectives (i.e. “the APDP will”).

In determining whether the hypotheses of the present study have been satisfied or not, the following were taken into account:

- For the MIDP, the results of the literature review (refer to Chapter 2) and the perceptions by stakeholders, as determined via a survey, were used to determine whether or not the hypotheses has been satisfied. As discussed in section 6.3.1, there is a difference between perception and fact.
- For the APDP, only the stakeholders’ perceptions were taken into account in determining whether or not the hypotheses has been satisfied. As all the policy instruments of the APDP, except for the Automotive Investment Scheme (AIS), will become effective only from 1 January 2013, it was not possible to conduct a literature review pertaining to the results of its implementation. Although the AIS has been effective from 1 July 2009 (refer to section 5.3.3), an analysis of the results of its implementation was not included in the scope of the present study, as its implementation was still in progress when this study was being conducted.
- It should be noted that conclusions reached in this present study were subject to judgement by interpretation of the results of the available data and that different conclusions may have been drawn when judgement was exercised by another party.

3.6 DESIGN OF THE DATA COLLECTION INSTRUMENT

In designing the data collection instrument, it was important to consider the objectives of the present study to ensure that the instrument was designed to bring about satisfaction of the research objectives.

The key question included in the survey, was Question 12 (refer to Appendix C). The content of this question was derived from the literature review in Chapter 2, where each specific conclusion was formulated and linked to the question to be included in the survey. This process ensured that the questions were properly aligned with the research objectives to be achieved. A tabular format was used to facilitate the comparison-based

analyses of the anticipated implementation results of the APDP. To assist with the data analyses, Questions 2 –11 were included in the survey to facilitate understanding of the demographic of the stakeholders.

The quality of the survey design was subjected to evaluation by conducting a pilot study. The survey was distributed to the study leaders for the present study and to two employees of the Automotive Industry Development Centre (AIDC). These employees were identified to participate in the pilot study on account of their knowledge of the automotive industry. The researcher had easy access to these employees via a contact at the AIDC, which made it more convenient for the researcher to involve these employees in the pilot study. The researcher anticipated that the participating employees would provide value-adding comments within a reasonable period of time. The feedback received from the pilot study participants was taken into consideration when concluding the design of the final survey. The time taken to complete the survey was measured as approximately 10 minutes. This was indicated in the electronic mail message accompanying the survey (refer to Appendix B).

The AIDC “has been established to assist in increasing the global competitiveness of the South African automotive industry to world-class levels” (AIDC, 2009). Owing to the nature of their role in the automotive industry, the AIDC is well-known for its association with best practices. The researcher therefore anticipated an increase in the response rate of surveys if the support of the AIDC could be obtained. Mr Barlow Manilal, the current Chief Executive Officer of the AIDC, gave the required permission to use the AIDC logo in the survey and to include a statement that the survey was supported by the AIDC (refer to Appendix D). This does not mean that the AIDC is in any way responsible for the research results, but emphasises their commitment to creating a learning culture to encourage the creation of a world-class automotive industry in South Africa.

The above sections provided an overview of the broad research design, the hypotheses of the present study and the design of the data collection instrument. The next section will provide an overview of the population of the present study.

3.7 THE POPULATION

The population of the present study was comprised of stakeholders with a manufacturing investment decision-making stake in the automotive industry. A stakeholder can be defined as a “person, group, or organization that has direct or indirect stake in an organization because it can affect or be affected by the organization's actions, objectives, and policies” (BusinessDictionary.com, 2010h). In the context of the automotive industry, members of NAAMSA and NAACAM as at March 2010 were considered to be automotive industry stakeholders for purposes of the present study. As self-administered web surveys were to be distributed via electronic mail, the electronic mail addresses of the respondents included in the target population were required. Both NAAMSA and NAACAM lists of members are available within the public domain and contain sufficient information for obtaining the required electronic mail addresses (NAACAM, 2010; NAAMSA, 2010c).

The target population included only those NAAMSA and NAACAM members who were involved in the manufacture of light motor vehicles or who were knowledgeable about automotive programmes relating to light motor vehicles. This was because the present study is delimited to include only light motor vehicles (refer to section 1.4). Further, in the event of affiliated members, only the main stakeholder was included in the target population. A main stakeholder for purposes of the present study was taken to be the head office or the main governing body. However, it was sometimes difficult to determine specific members to be included in the target population.

The NAAMSA and NAACAM membership lists also include those involved in the manufacture of medium and heavy commercial vehicles or components used in their manufacture, as well as those who are knowledgeable about automotive programmes for only medium and heavy commercial vehicles. The available methods for identifying these members would be to review each one's website or inspect the member activity descriptions in the membership list. In certain instances, it was possible to determine with certainty those stakeholders to be excluded from the survey. However, there was the occasional risk that incorrect interpretation of information shown on the website or in the membership list could mean that members who could make a valuable contribution to the

present study were mistakenly left out. As a result, when it was uncertain whether certain stakeholders should be included or omitted, they remained in the population.

However, membership with either NAAMSA or NAACAM does not guarantee that a stakeholder would be knowledgeable enough to participate in the survey, because certain members' activities are such that they do not need any knowledge of the MIDP. However, membership status alone was not enough to indicate whether or not members were knowledgeable. As a result, when it was uncertain whether certain stakeholders should be included or omitted, they remained in the population.

As a result of the above, it was expected that the response rate would not be as high as in similar surveys conducted in the automotive industry (refer to section 3.8). While carrying out the literature review, it was noted that one expert consultant regularly supported the South African Government on the MIDP's design, and was thus included in the target population. The total population thus amounted to approximately 200 stakeholders. Because of the limited size of the population, no sampling techniques were applied.

Dr Norman Lamprecht, currently the executive manager of NAAMSA and a member of the Automotive Industry Export Council (AIEC) (Newman & Lloyd, 2010), believes that "the eight original equipment manufacturers (OEMs), as the key drivers of the automotive supply chain, and the key industry stakeholders, representing the supporting subsectors of the automotive supply chain, represent the domestic automotive supply chain" (Lamprecht, 2009:11). Both the OEMs manufacturing light vehicles in South Africa and the key industry stakeholders referred to by Dr Lamprecht are also included within the target population of the present study, seeing that they are included in the NAAMSA and NAACAM member lists. The researcher therefore believes that the target population of the present study is appropriate for supporting the satisfaction of the research objectives, as it comprises a fair representation of the automotive industry.

3.8 THE NUMBER OF PARTICIPATING STAKEHOLDERS

When the survey design had been completed, the survey was distributed to the approximately 200 stakeholders in the form of a hyper-text-mark-up-link contained in an electronic mail. The electronic mail included a description of the research objectives as well as the benefits of participating in the study. It concluded by providing instructions for completing the survey together with contact details should a stakeholder need assistance. Appendix B contains a copy of this electronic mail.

To increase the response rate, two follow-up participation requests were distributed among stakeholders. These requests included the original message and the survey link for ease of reference.

Of the approximately 200 stakeholders, 58 participated in the study, 36 of whom completed all the questions needed for statistical analysis. This represents a response rate of approximately 18%. This is deemed acceptable, as response rates for studies in the taxation arena have delivered similar response rates (i.e. 5% and 14.5%) (Smulders & Stiglingh, 2008:357; Stiglingh, 2008:103). A similar study on the automotive industry yielded a response rate of 100%. However, the population for this study was much smaller (i.e. 23 respondents), as it focused only on a sub-set of the NAACAM and NAAMSA member lists (Lamprecht, 2009:367). By comparison, therefore, the 36 stakeholders who participated in the present study are deemed an acceptable number. Further, five stakeholders responded via electronic mail, indicating that the survey would not be applicable to them or that they would not be in a position to participate, which further affected the response rate.

3.9 DATA ANALYSES

The data analyses were executed via an internal consultation service provided by the Department of Statistics at the University of Pretoria. The allocation of statistical consultants was done according to an application for statistical assistance submitted to the Department of Statistics. The Department of Statistics follow their own procedures for identifying the most suitable consultants, according to the nature of the research and the

statistical methods that would be required to analyse the research results. Two lecturers in statistics were allocated to assist with the analyses. Their roles at the University of Pretoria have given them extensive knowledge of statistical analyses methods. The researcher believes that the recruitment policies of the University of Pretoria are sufficient to ensure that individuals appointed have the requisite knowledge to enable them to perform their relevant duties. The researcher's discussions on the subject matter with the allocated research consultants gave the assurance that they were more than competent to conduct the analyses and that they understood the objectives of the study.

A hypotheses-testing focus was followed. The aim of this focus is to draw conclusions in respect of the variables of interest subjected to testing (Diamantopoulos & Schlegelmilch, 2000:65). The data analysis methods were determined in consultation with the Department of Statistics at the University of Pretoria. Data were analysed by using the independent measure of comparing groups. In line with the research objectives, the responses received for Question 12 pertaining to the MIDP were compared with those pertaining to the APDP to determine whether stakeholders believed that the anticipated implementation results of the APDP would be similar to results for the MIDP, as stated in the hypotheses. In addition, the responses for certain groupings of stakeholders were compared, as the researcher expected the views of these groupings to differ, seeing that they were affected differently by the provisions of the MIDP and APDP. Table 8 contains an analysis of the groups compared.

Table 8: List of groups that were compared during statistical analyses

Group reference	Description	Statistical Analyses Method
Group A Sub-group 1 Sub-group 2	MIDP APDP	Bowker's Test
Group B Sub-group 1 Sub-group 2 Sub-group 3	OEMs - Question 2(1) Component manufacturers – Questions 2(2), 2(3) and 2(4) Other stakeholders – Question 2(5)	Fisher's Exact Test

Group A consisted of the MIDP (represented by Question 12A of the survey) and the APDP (represented by Question 12B of the survey). Group B was comprised of groupings

of participating stakeholder types, namely OEMs, component manufacturers and other stakeholders (refer to section 4.2.1). The specific statistical analysis methods used were Bowker's Test (in comparing sub-groups 1 and 2 of Group A) and Fisher's Exact Test (in comparing sub-groups 1, 2 and 3 of Group B).

3.9.1 Bowker's Test

Bowker's Test is essentially the same as McNemar's Test, the aim of which is to determine, for each hypothesis formulated, whether or not "...the proportions of subjects with the characteristic of interest is the same under two conditions/treatments" (Diamantopoulos & Schlegelmilch, 2000:192). The aim of Bowker's Test is very similar, except that more than two conditions/treatments are present (SAS Institute Inc., 2010:154).

This test was used in the present study to statistically analyse Group A to determine whether the implementation results for the APDP were expected to be significantly different from those for the MIDP.

3.9.2 Fisher's Exact Test

Fisher's Exact Test is a variation of the Two-Sample Chi-Square Test, taking into account the relatively small population size of the participating stakeholders. The Chi-Square Test compares groups on a nominal scale and aims to determine whether differences exist between the groups being compared, with reference to the relative frequency with which stakeholders fall into the various categories of variable interest (Diamantopoulos & Schlegelmilch, 2000:175).

This test was used to statistically analyse Group B. Fisher's Exact Test was therefore used to determine whether the type of stakeholder significantly influenced the answer to the relevant survey question.

3.10 RELIABILITY OF THE DATA

It is important to remember that no conducted research can be free of error. However, steps can be taken to ensure that error is minimised (Statistics New Zealand, 2006).

The following measures were taken to ensure the reliability of data:

- Pilot testing was conducted to ensure that ambiguous questions or words were identified and rephrased or removed.
- The design of the survey included mostly close-ended questions to minimise interpretation errors.
- The on-line SurveyMonkey[®] tool was researched to ensure that there were enough mechanisms to contribute to data quality. The researcher found the tool sufficiently adequate in this regard.
- As survey responses were collected directly by the SurveyMonkey[®] tool, data transfer errors were omitted, as human error was minimised.
- Two follow-up requests were sent to stakeholders to address the matter of non-response.
- The survey was designed to compensate for stakeholders not knowing certain things. This was achieved by including an “Uncertain” option in the questions concerned. In addition, where questions did not provide for a category applicable to the whole spectrum of stakeholders or where a specific demographic attribute was not applicable to specific stakeholders, an “Other” option was included, whereby stakeholders were given the opportunity of providing a customised answer to the specific question.
- The SurveyMonkey[®] tool was customised to include a function preventing respondents from completing the survey or questions in it more than once.

Although the researcher elected an option in the SurveyMonkey[®] tool ensuring that only fully completed surveys could be submitted, the tool captured all surveys attempted by stakeholders, even when only one question was completed. This unintended result meant

that the researcher had to do data cleaning. This was done using Microsoft Excel[®] functions to filter out all surveys in which certain questions had not been completed.

3.11 RESEARCH ETHICS

According to Kotzé (2009:12), numerous ethical issues have to be considered when conducting empirical research. The following summary provides a listing of the most significant ethical issues affecting the present study, together with the actions taken to address them:

- Copyright, plagiarism and fabrication: The use of secondary data was accompanied by in-text references. The study supported all facts, wherever possible, by providing relevant sources.
- The use of financial or non-financial incentives to encourage participation: No form of incentive was applied in the present study.
- Confidentiality and anonymity: Participants' confidentiality and anonymity were protected by a guarantee of privacy in the informed consent form. Completion of Question 1 of the questionnaire was accepted as evidence that respondents had read and understood the information contained in the informed consent form (refer to Appendix C).
- Voluntary participation and the right to withdraw from the study: The informed consent form highlighted for participants that participation was voluntary. The language used was not of a threatening nature (refer to Appendix C).
- Permission from organisations for the participation of employees: The informed consent form indicated that if the respondent was not the broker of the entity, the necessary authorisation must be obtained. Completion of Question 1 of the questionnaire was accepted as evidence that the respondent had been granted broker authorisation (refer to Appendix C).
- Researcher's objectivity and integrity and false reporting of research findings: The survey was designed to remain free of leading questions.

- Permission was obtained from the Chief Executive Officer of the AIDC to use their logo as well as to include a statement of survey support in the electronic mail that accompanied the survey (refer to section 3.6 and Appendix D).

Appendix B provides an example of the electronic mail message that accompanied the survey, Appendix C an example of the survey and Appendix D the consent obtained from the Chief Executive Officer of the AIDC.

3.12 SUMMARY

Chapter 3 discussed the research design and methods applied to accomplish the research objectives for the present study. The study commenced with a literature review as part of the process of formulating CSFs. Self-administered web surveys were subsequently used for collecting the opinions of stakeholders to assist in benchmarking the performance of the MIDP and the anticipated performance of the APDP against the formulated CSFs.

Chapter 3 also provided the hypotheses for the present study and explained the approach followed in formulating and analysing them. Surveys were distributed to members of NAACAM and NAAMSA (involved in the manufacturing of light motor vehicles or with knowledge of automotive programmes for light motor vehicles) as well as an expert consultant of the South African Government which provided support in the MIDP's design.

Chapter 3 concluded with a discussion of the statistical methods used in analysing the survey results and also provided an overview of the measures taken to ensure data reliability.

The next chapter will discuss the demographics of the participating stakeholders.

CHAPTER 4

4 DEMOGRAPHICS OF PARTICIPATING STAKEHOLDERS

4.1 INTRODUCTION

The objectives of the present study are to determine whether the Motor Industry Development Programme (MIDP) has achieved its objectives as formulated by the Department of Trade and Industry (DTI) and whether stakeholders are of the opinion that the Automotive Production Development Programme (APDP) will do likewise. The previous chapter discussed the research methodology applied to satisfy the research objectives of the present study.

This chapter will discuss the demographics of the participating stakeholders. This may assist in understanding both the nature of stakeholders and the analysis of the survey results (refer to Chapter 6).

4.2 THE DEMOGRAPHICS OF THE PARTICIPATING STAKEHOLDERS

Chapter 3 indicated that the target population consisted of members of the National Association of Automobile Manufacturers in South Africa (NAAMSA) and the National Association of Automotive Component and Allied Manufacturers (NAACAM) as at March 2010, having a manufacturing investment decision-making stake in the automotive industry for light motor vehicles. In addition, the researcher noted an expert consultant of the South African Government who would be in a position to provide valuable input for the present study (refer to section 3.7). The following sections will discuss the demographics of the 36 participating stakeholders.

4.2.1 The nature and eligibility of the participating stakeholders

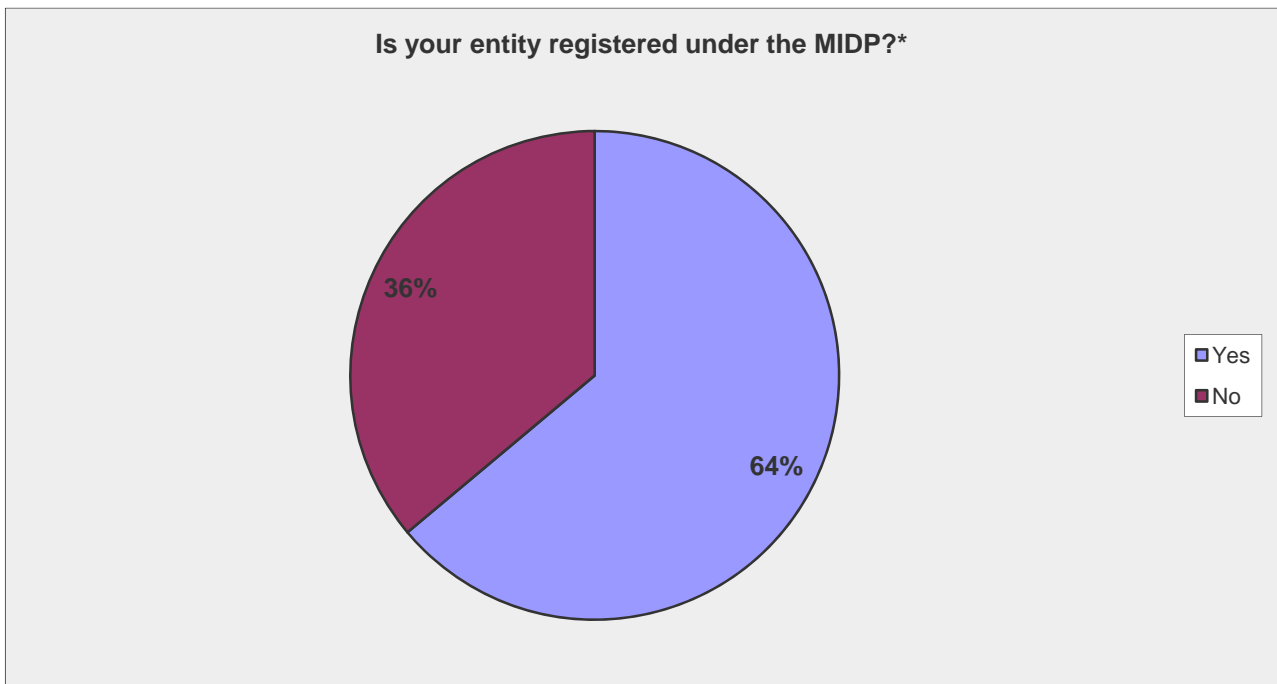
To determine whether participating stakeholders had adequate knowledge of the workings of the MIDP and the APDP, the following questions were included in the survey:

- Question 6: Is your entity registered under the MIDP?
- Question 7: Will your entity be eligible to register under the APDP?

To determine whether or not they were eligible to register for the MIDP and APDP, stakeholders should have some form of knowledge of these programmes. However, if they were not eligible to register for the MIDP and the APDP, their registration status would not necessarily mean that they lacked the knowledge necessary for participating in the survey. Their role in the automotive industry may have required them to know about the programmes. For example, members of a government institution, like the DTI, might have been involved in governing the automotive industry.

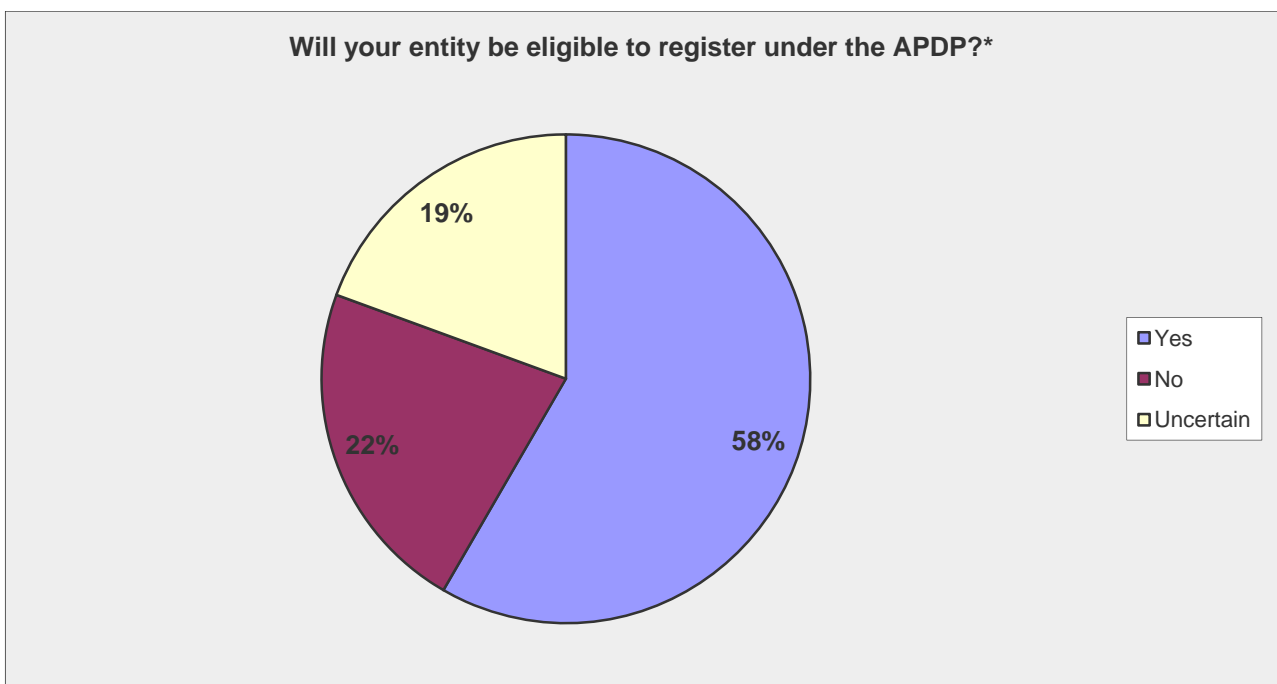
The researcher did not include a question in the survey to discern between stakeholders relating to light motor vehicles and those relating to medium and heavy commercial vehicles. Seeing that the study was delimited to include only light motor vehicles, it was anticipated that stakeholders who did not qualify would elect not to participate, which would result in a lower response rate. On occasion, stakeholders relating to medium and heavy commercial vehicles notified the researcher via an electronic mail message that they would not be participating in the study as they were manufacturers of medium and heavy commercial vehicles or did not have the requisite knowledge (refer to section 3.8). Figures 8 and 9 provide a graphical representation of the survey results for questions 6 and 7.

Figure 8: MIDP registration status of participating stakeholders



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

Figure 9: Expected APDP registration status of participating stakeholders



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

The results for Question 6 indicated that approximately 64% of participating stakeholders are currently registered for the MIDP (refer to Figure 8). The results of Question 7

indicated that 58% of participating stakeholders indicated that they would be eligible to register for the APDP (refer to Figure 9). The researcher believes that to determine eligibility to register would require sufficient knowledge of the relevant programme. Although 19% of participating stakeholders indicated that they were uncertain whether they would be able to register for the APDP (refer to Figure 9), this would not necessarily imply that they lacked the requisite knowledge to participate in the present study. The uncertainty may have been owing to certain provisions of the APDP which still had to be finalised. Therefore, based on the results of Questions 6 and 7, the researcher believes that the participating stakeholders were knowledgeable enough to participate in the present study, which implies increased reliability of survey results.

The participating stakeholders were subdivided into the following distinctive groups via the inclusion of a demographic question in the questionnaire:

- Question 2(1): Original equipment manufacturer (OEM);
- Question 2(2): Component manufacturer supplying to OEM;
- Question 2(3): Component manufacturer involved in direct exports;
- Question 2(4): Component manufacturer involved in both supplying to OEM and in direct exports; and
- Question 2(5): Other (where stakeholders were required to indicate the relevant type in their own words).

Table 9 contains an analysis of the stakeholders that participated in the survey.

Table 9: Breakdown of stakeholders who participated in the survey

Stakeholder Type	Number of participants	Percentage
OEM (Question 2(1))	6	17%
Component manufacturers supplying to OEM (Question 2(2))	4	11%
Component manufacturers involved in direct exports (Question 2(3))	1	3%
Component manufacturers involved in both supplying to OEM and direct exports (Question 2(4))	12	33%
Other (Question 2(5))	13	36%
Grand Total	36	100%

The identification of distinctive stakeholder groups was to facilitate statistical analysis, as a difference in opinion between stakeholders for certain survey questions was anticipated. As indicated in section 3.9, participating stakeholders were divided into the following three groups:

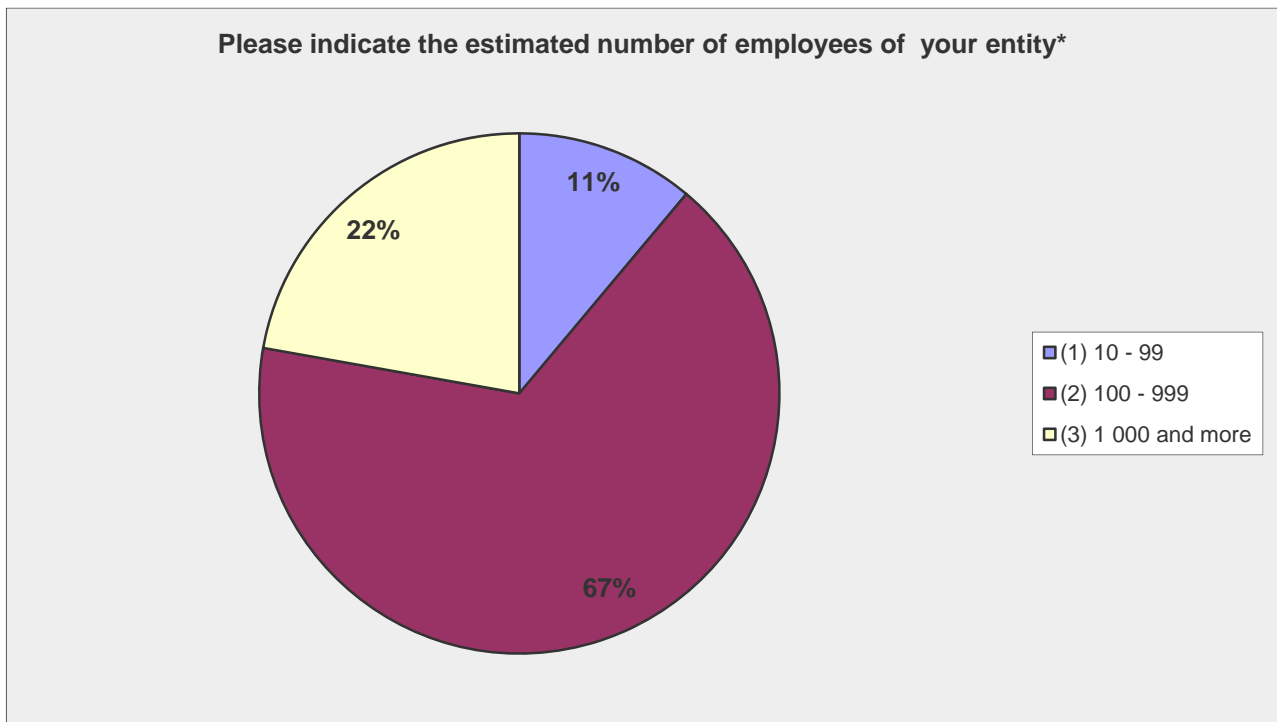
- OEMs: Question 2(1);
- Component manufacturers: Question 2(2), 2(3) and 2(4); and
- Other stakeholders: Question 2(5).

The first group consisted of OEMs, representing 17% of the participating stakeholders with a response rate of approximately 75%. The second group consisted of component manufacturers representing 47% (11% + 3% + 33%) of the participating stakeholders, with a response rate of approximately 16%. The third group represented 36% of the participating stakeholders and consisted of other stakeholders, most of whom plays a supporting role in the automotive industry (i.e. government, automotive associations and financial institutions). Other stakeholders had a response rate of approximately 13%.

4.2.2 Estimated number of employees of participating stakeholders

As indicated in section 2.4.6, the success of any programme is dependent not only upon its economic contributions, but also upon its socio-economic impact on a country. A stakeholders' socio-economic impact can be positive or negative. The researcher believes that as the number of employees increases, a stakeholder's socio-economic impact also increases. Question 3, *Please indicate the estimated number of employees of your entity*, was included in the survey to determine the estimated number of employees employed by the participating stakeholders (refer to Figure 10).

Figure 10: Estimated number of employees of participating stakeholders



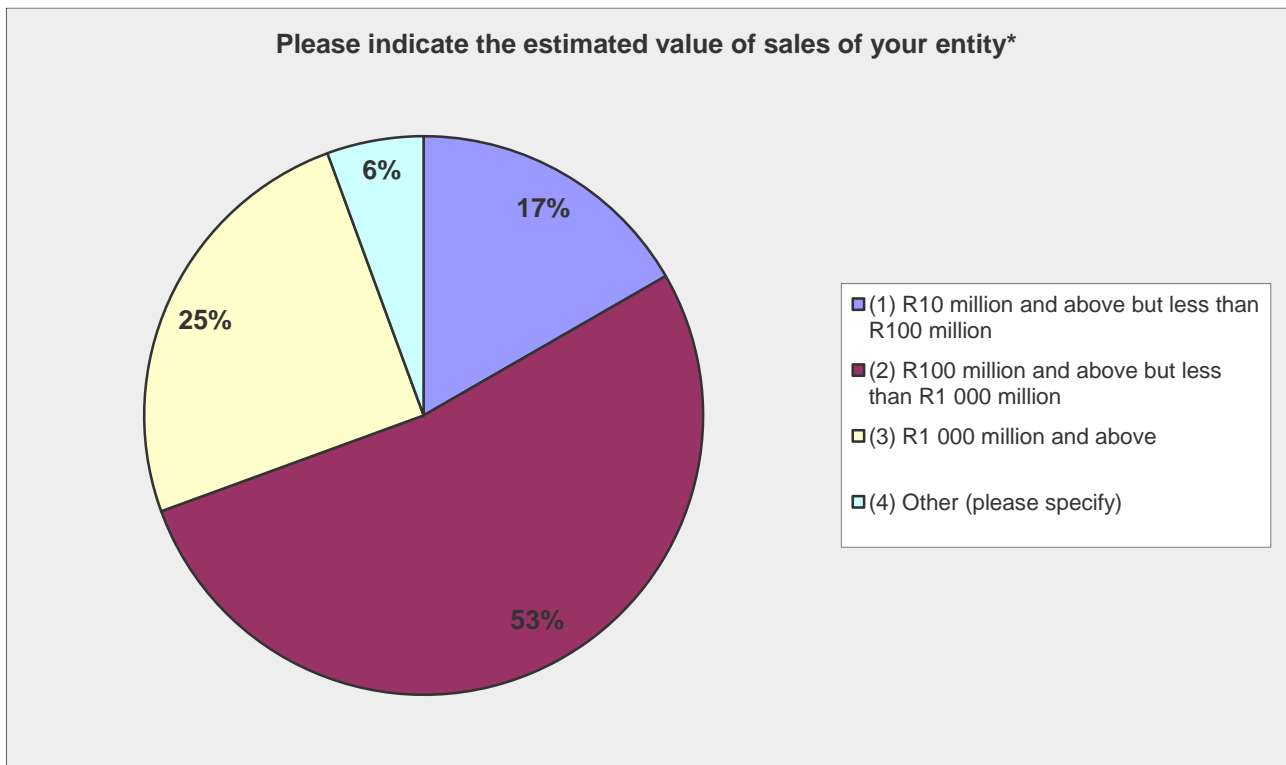
Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

As can be seen from Figure 10, 11% of the participating stakeholders employ 10 – 99 employees, 67% employ 100 – 999 employees and 22% employ 1000 and more, indicating different levels of socio-economic impact. This emphasises the importance of automotive programmes that do not focus solely on the economic bottom line.

4.2.3 Estimated value of sales of participating stakeholders

Based on the assumption that the value of sales indicates a stakeholder's economic impact, an increase in the sales value would indicate an increased impact on the South African economy. In general, greater economic impact is associated with greater influence and decision-making power. It was therefore assumed, based on the above statement, that stakeholders with high sales values would be more likely to be involved and have knowledge of matters that may significantly impact the economy (i.e. the introduction of a new automotive programme). Question 4, *Please indicate the estimated value of sales of your entity*, was included in the survey to determine the estimated sales value of the participating stakeholders (refer to Figure 11).

Figure 11: Estimated sales values of participating stakeholders



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

As can be seen from Figure 11:

- 17% of participating stakeholders generate estimated sales of R10 million and above but less than R100 million;
- 53% of participating stakeholders generate estimated sales of R100 million and above but less than R1000 million; and
- 25% of participating stakeholders generate estimated sales of above R1000 million.

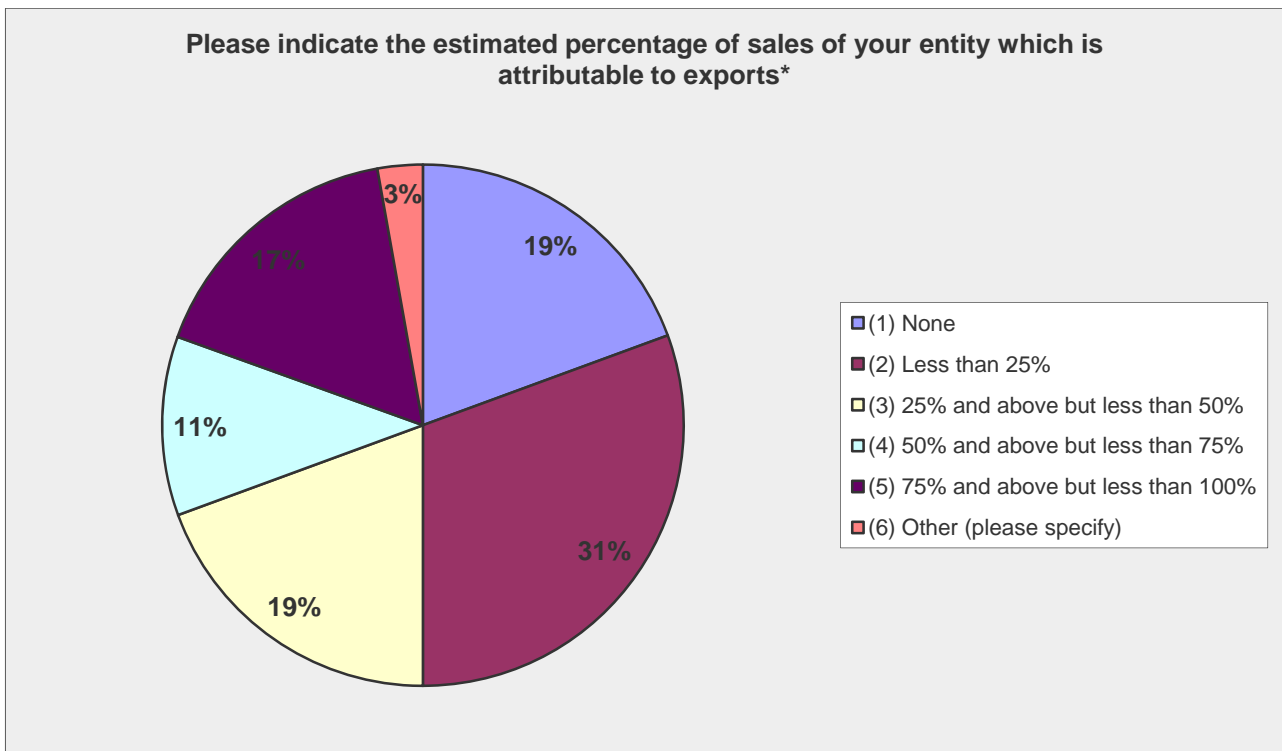
The other category represents the 6% of participating stakeholders who do not generate sales, as they are non-profit organisations.

From the above survey results, it is evident that the participating stakeholders have a considerable impact on the South African economy.

4.2.4 Estimated value of sales of participating stakeholders attributable to exports

According to the DTI (2003:10), one of the objectives of the MIDP is “encouraging a phased integration into the global automotive industry”. One instrument of achieving global integration is the stimulation of exports. As the MIDP is an export-orientated programme, a stakeholder’s level of involvement in the MIDP can be indicated by the level of export involvement. Question 5, *Please indicate the estimated percentage of sales of your entity which is attributable to exports*, was included in the survey to determine the estimated percentage of sales of the participating stakeholders attributable to exports (refer to Figure 12).

Figure 12: Estimated exports as a percentage of sales values of participating stakeholders



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

As can be seen from Figure 12 above, only 19% of the participating stakeholders indicated that they were not involved in exports. The “Other” category (3%) relates to one stakeholder who is not involved in exports as the stakeholder is a government institution. Therefore, a total of 22% of the participating stakeholders are not involved in exports.

The estimated percentage of sales by the participating stakeholders which is attributable to exports is as follows:

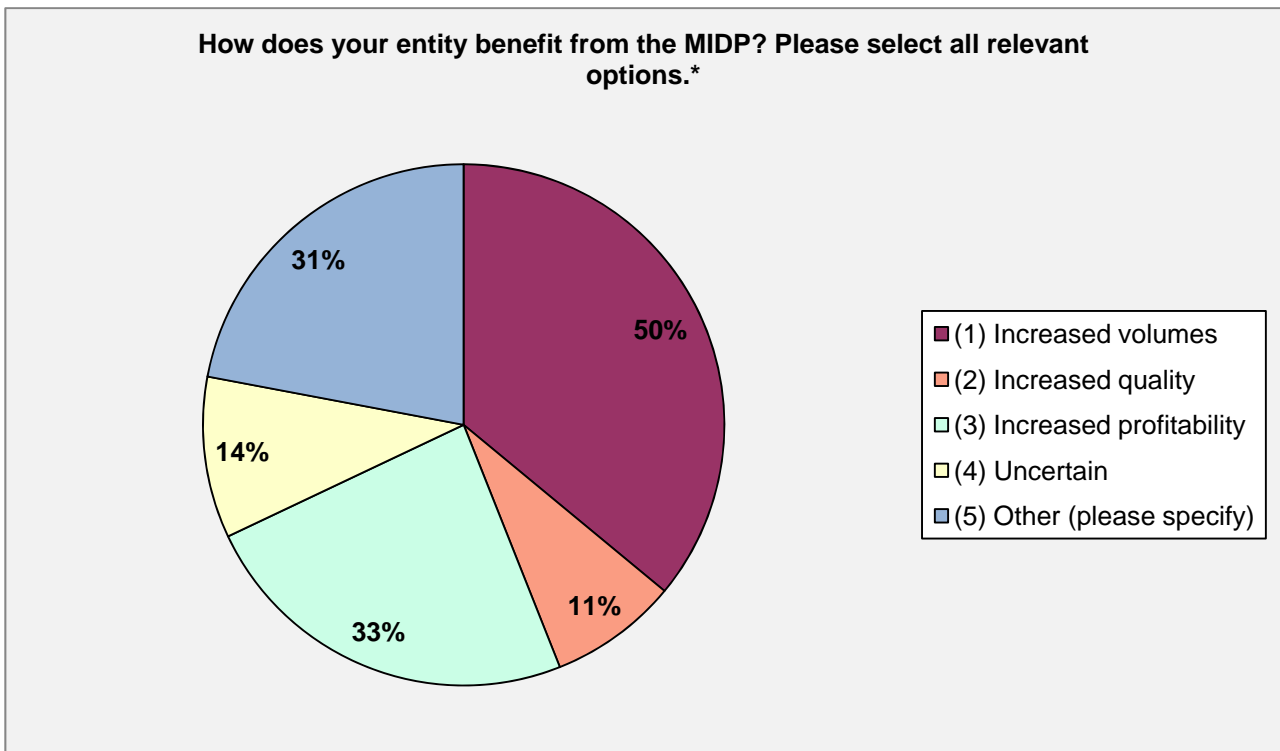
- For 31% of participating stakeholders, exports make up less than 25% of their estimated sales value;
- For 19% of participating stakeholders, exports make up 25% and above of their estimated sales value, but less than 50%;
- For 11% of participating stakeholders, exports make up 50% and above of their estimated sales value, but less than 75%; and
- For 17% of participating stakeholders, exports make up 75% and above of their estimated sales value, but less than 100%.

Although the extent of involvement of the participating stakeholders varies, 78% (100% - 22%) are involved in exporting to some extent. For 28% (17% + 11%) of the participating stakeholders, exports make up 50% or more of their total sales values. The above survey results confirmed that the stakeholders who participated fell within the target population. Stakeholders not involved in exporting did not preclude participation in the present study. As indicated in section 4.2.1, a participating stakeholder's role in the automotive industry also impacts on the stakeholder's knowledge of industry programmes.

4.2.5 Perceived benefits of the MIDP pertaining to participating stakeholders

Any programme has beneficiaries. However, intended beneficiaries may not always perceive a programme to be benefiting them in any way. In addition, the nature of the benefits may differ from one beneficiary to the next. Question 8, *How does your entity benefit from the MIDP*, was included in the survey to determine how participating stakeholders benefit from the MIDP. The purpose of including this question in the survey was to determine the "tone" of participating stakeholders (i.e. where stakeholders do not perceive the MIDP as beneficial, there would be a negative perception, which would result in a negative approach towards answering the key question (Question 12) in the survey).

Figure 13: How stakeholders benefit from the MIDP



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

As can be seen from Figure 13, the participating stakeholders benefit from the MIDP as follows:

- 50% of the participating stakeholders experienced increased volumes due to the MIDP (of which 12 percentage points is attributable to non-manufacturing participating stakeholders);
- 11% of the participating stakeholders experienced increased quality due to the MIDP (of which 6 percentage points is attributable to non-manufacturing participating stakeholders); and
- 33% of the participating stakeholders experienced increased profitability due to the MIDP (of which 3 percentage points is attributable to non-manufacturing participating stakeholders).

Of the participating stakeholders, 14% indicated that they were uncertain about what benefits resulted from the MIDP.

Four (4) of the participating stakeholders indicated that they did not receive any benefit from the MIDP. These stakeholders were not eligible to register for the MIDP because of the role they played in the automotive industry. For instance, one (1) of the stakeholders indicated that they were responsible for administering the MIDP and would therefore not be directly involved in manufacturing activities. One (1) stakeholder indicated that they were involved in imports only and therefore did not experience any benefits from the MIDP. This was because the MIDP is an export-driven instrument and would therefore mainly benefit stakeholders involved in exports. Five (5) of the participating stakeholders noted the following additional benefits in the “Other” field:

- The MIDP creates the opportunity to be competitive;
- The MIDP contributes to covering packaging costs, model-based testing costs and warehousing costs of exports;
- The MIDP assists in off-setting logistical costs;
- The MIDP creates price competitiveness; and
- The MIDP creates the opportunity to provide consultation services.

One (1) of the participating stakeholders indicated that they did not experience any benefits as a result of the MIDP and that it merely added an administrative burden.

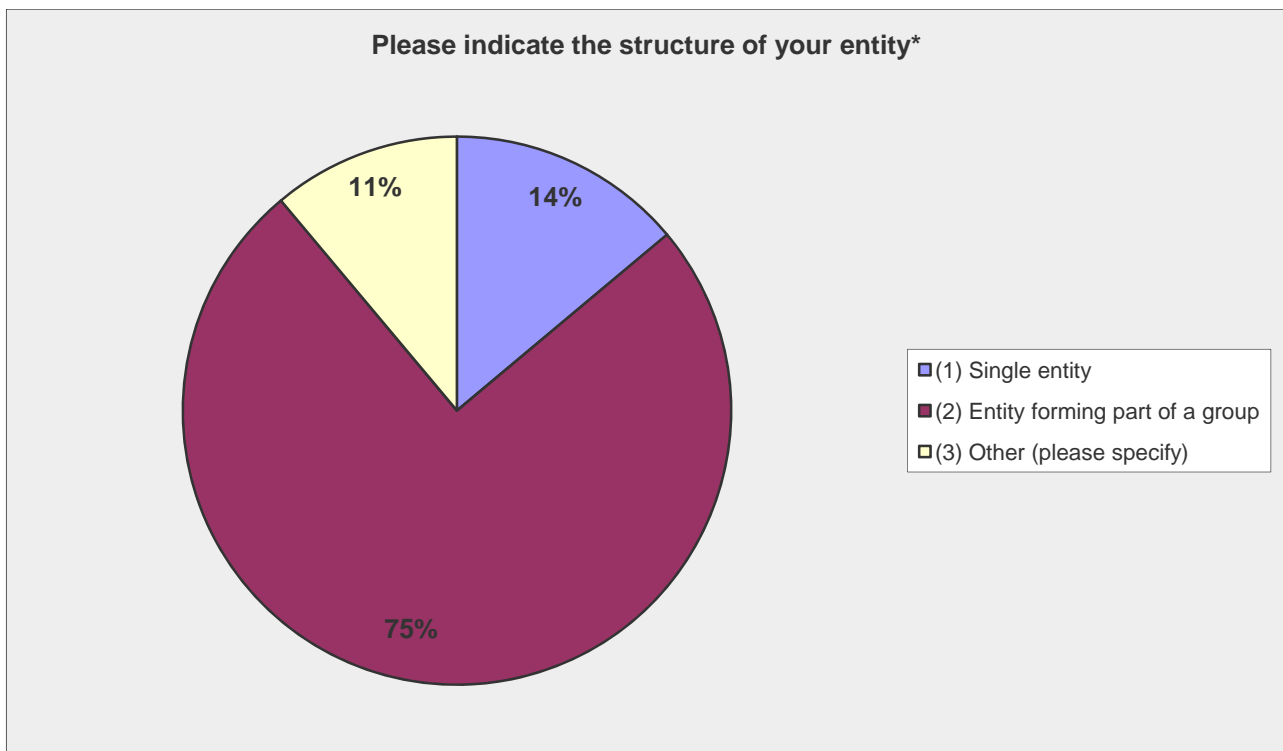
Based on the above, it can be concluded that, overall, participating stakeholders perceived the MIDP to be beneficial. Therefore, most of the participating stakeholders had a positive perception of the MIDP. Benefits were mostly experienced by manufacturing participating stakeholders.

4.2.6 Organisational structure of participating stakeholders

As discussed in section 2.4.5, the organisational structure could have a role in an entity’s decision-making processes, which could possibly determine both the level of involvement in automotive programmes and the extent to which an entity contributes towards the achievement of a programme’s objectives. For instance, when a foreign holding company centralises all its research and development, there may be little opportunity for innovation

at the local plant level, despite programme initiatives encouraging innovation. Question 9, *Please indicate the structure of your entity*, was included in the survey to determine the organisational structures of the participating stakeholders (refer to Figure 14). When a participating stakeholder indicated that they formed part of a group, Question 10, *Please indicate the position of your entity in the group structure*, was posed to determine where in the group structure a participating stakeholder was located. And finally, Question 11, *In which country is your entity's holding/controlling entity located*, was included to determine the nationality of a stakeholder's holding/controlling entity for those stakeholders that indicated in Question 10 that they were a subsidiary, a division or a joint venture.

Figure 14: Organisational structure of participating stakeholders



Source: Survey Monkey[®] (2010). *Note: 36 Participating stakeholders

Of the participating stakeholders, 14% indicated that they did not form part of a group, while 75% indicated that they did. The remaining 11% of participating stakeholders indicated the following:

- One stakeholder is a wholly-owned subsidiary of an overseas company.
- One stakeholder is a local privately-owned entity.

- One stakeholder indicated that it is a group.
- One stakeholder indicated that it forms part of an industry cluster.

It appears that two (2) of the above stakeholders would also form part of a group. However, as this was not indicated as such by these stakeholders, no responses were obtained for Questions 10 and 11.

Of the participating stakeholders, 75% are entities forming part of a group. Their positions in the group structure are as follows:

- 85% of the stakeholders forming part of a group are subsidiaries;
- 11% of the stakeholders forming part of a group are divisions; and
- 4% of the stakeholders forming part of a group are joint ventures.

The nationality of the controlling firms of these stakeholders forming part of a group is as follows:

- The controlling firms of 19% of the participating stakeholders are located in Japan;
- The controlling firms of 37% of the participating stakeholders are located in South Africa;
- The controlling firms of 4% of the participating stakeholders are located in the United Kingdom;
- The controlling firms of 11% of the participating stakeholders are located in the United States of America;
- The controlling firms of 22% of the participating stakeholders are located in Germany;
- The controlling firms of 4% of the participating stakeholders are located in France; and
- The controlling firms of 19% of the participating stakeholders are located in India.

Therefore, of the 27 stakeholders forming part of a group, 63% are foreign-owned. This indicates that decision-making for a number of the participating stakeholders is still influenced to a certain extent by a foreign entity. This may imply that, to increase direct

foreign investment, the APDP would have to be enticing enough for foreign entities to persuade them to move more operational and decision-making activities to South Africa.

4.3 SUMMARY

This chapter discussed the demographics of the participating stakeholders. The next chapter will discuss the policy instruments of the APDP to place the survey results (refer to Chapter 6) in context.

CHAPTER 5

5 THE AUTOMOTIVE PRODUCTION AND DEVELOPMENT PROGRAMME

5.1 INTRODUCTION

One objective of the present study is to determine whether stakeholders, as defined in Chapter 3, are of the opinion that the Automotive Production and Development Programme (APDP) will achieve its objectives as formulated by the Department of Trade and Industry (DTI). This chapter will go towards achieving this objective by providing an overview of the objectives and policy instruments of the APDP. Some awareness of the APDP may assist in placing the survey results in context (refer to Chapter 6).

5.2 THE OBJECTIVES OF THE APDP

According to the DTI, the long-term development of the automotive industry will be achieved by increasing production volumes to 1.2 million by 2020 and by “deepening of the local components industry” (DTI, 2008).

At the end of 2007, the DTI, together with a task team of experts, commenced the anticipated review of the Motor Industry Development Programme (MIDP) by formulating the architecture of the new automotive programme, the APDP (DTI, 2008). The details of the APDP were announced on 3 September 2008. The inherent nature of the APDP differs from that of the MIDP in that it is a local manufacturing incentive and no longer an export-based incentive (Deloitte and Touche, 2009:1).

According to the Industrial Policy Action Plan (IPAP), the programme will be implemented over the period 2013 to 2020 (DTI, 2010b:3). The IPAP indicates the following key milestones regarding the implementation of the APDP (DTI, 2010b:55):

- “2010/11 Q1: Stakeholder consensus and Minister’s approval to be followed by implementation guidelines.

- 2010/11 Q2: Submission of approved amendments to National Treasury for Gazetting and implementation of the guidelines and launch of the APDP.
- 2010/11 Q3 – Q4: Publishing of APDP implementation guidelines and finalisation of monitoring and evaluation framework.”

The objectives of the APDP are to (Deloitte and Touche, 2009:1):

- “Improve the international competitiveness of the South African automotive industry.
- Continue to encourage growth, particularly through exports, and thereby improve the industry’s current trade imbalance.
- Stabilise and potentially increase employment levels.
- Encourage the rationalisation of platforms so as to achieve economies of scale in assembly.
- Encourage further capital investment into South Africa.”

The objectives of the APDP are very similar to those of the MIDP (refer to section 2.2). Table 10 contains a comparison of the objectives of the MIDP with those of the APDP.

Table 10: A comparison of the MIDP and APDP objectives

MIDP Objectives	APDP Objectives
“Encouraging a phased <i>integration into the global automotive industry</i> ” and “provide high-quality, affordable vehicles and components to the domestic and <i>international markets</i> ”	“ <i>Improve the international competitiveness</i> of the South African automotive industry”
“Make a greater contribution to the economic growth of the country by increasing production and achieving an <i>improved sectoral trade balance</i> ”	“Continue to encourage growth, particularly through exports and thereby <i>improve industry’s current trade imbalance</i> ”
“Provide <i>sustainable employment</i> through increased production”	“ <i>Stabilise</i> and potentially increase <i>employment levels</i> ”
“ <i>Increasing the volume and scale</i> of production by the <i>expansion of exports</i> and <i>gradual rationalisation</i> of models produced domestically”	“Encourage the <i>rationalisation</i> of platforms to <i>achieve economies of scale</i> in assembly”

MIDP Objectives	APDP Objectives
“Encouraging the <i>modernisation and upgrading</i> of the automotive industry in order to promote productivity and facilitate the global integration process”	“Encourage <i>further capital investment</i> into South Africa”

Source: Adapted from the DTI (2003:10) and Deloitte and Touche (2009:1).

One objective of the MIDP was to facilitate a phased integration into the global automotive industry and to establish the South African automotive industry as a supplier of affordable quality products in an international context (refer to section 2.2). Both programmes recognise that exporting is one of the methods by which growth and global integration can be achieved. The APDP continues to build on the global integration objective of the MIDP by aiming to improve the international competitiveness of the industry, thereby improving on the performance of the MIDP in this respect.

With global integration comes the opportunity to venture into export and import markets. While the surge in exports is one of the greatest successes of the MIDP, the rise in the value of imports resulted in a negative sectoral industry trade balance for a number of years (refer to section 2.4.4). Both the MIDP and the APDP have as objectives to improve the industry sectoral trade balance.

Global integration also increases competitive pressures. As discussed in section 2.4.5, many factors influence competitiveness but one of the most tangible is cost. One method of reducing cost is to achieve economies of scale. Investment, production levels and local content are inter-dependent. Increased production levels can be achieved by rationalisation of the number of vehicle models manufactured which may result in economies of scale. This requires world-class technology (refer to section 2.4.5). Although the formulation of the objectives of the MIDP and the APDP in this regard differs, the underlying objectives remain the same, that is, to rationalise the number of vehicle models produced, to facilitate an increase in investment and to achieve economies of scale.

Achievement of economies of scale requires the productive application of labour. As discussed in section 2.4.6, labour productivity and production efficiency, key ingredients to

achieving economies of scale, impact negatively on employment growth. However, despite the increase in labour productivity under the MIDP, the programme has still managed to create sustainable employment levels (refer to section 2.4.6). The APDP will continue to build on this achievement, but aims to improve on the performance of the MIDP by including as one of its objectives a potential improvement in employment levels (Deloitte and Touche, 2009:1).

It appears that the objectives of the APDP are effectively based to some extent on the objectives of the MIDP. The researcher therefore believes that it was appropriate to use the same critical success factors (CSFs) as formulated for the MIDP (refer to Table 2 under section 2.2). By using a consistent research benchmark in the form of similar CSFs, one is better able to attribute research results to the specific automotive programme, as the number of variables in the study is minimised.

This section discussed the objectives of the APDP. The next section will discuss the policy instruments included in the APDP to facilitate the achievement of these objectives.

5.3 THE POLICY INSTRUMENTS OF THE APDP

The policy instruments set to achieve the objectives of the APDP are as follows (DTI, 2008; DTI, 2010c:1):

- Stabilised import tariffs;
- Value Add Allowance (VAA);
- Production Incentive (PI); and
- Automotive Investment Scheme (AIS).

5.3.1 Stabilised import tariffs

The tariff phase-down imposed by the MIDP (refer to section 2.3.1) will be removed under the APDP, which will impose stable and moderate import tariffs from 1 January 2013. Completely built-up (CBU) vehicles will be subject to a tariff of 25% and components to 20% (DTI, 2008). Currently, in 2010, the tariff for completely built-up vehicles is 27%, with

22% for components (South African Revenue Service, 2004:8). The rationale behind the tariff freeze is to maintain tariffs at a level that will discourage the importation of vehicles (Deloitte and Touche, 2009:2).

Although the programme has been welcomed by stakeholders, there has been concern about the tariff freeze, as it is believed to be too low to successfully curb a rise in imports (Creamer, 2008; South African Press Association, 2008). On the contrary, some analysts have argued that the level of protection afforded the industry is too high (South African Automotive Benchmarking Club, 2008a:2).

The phase-down will continue under the MIDP, concluding in 2012 at tariffs of 25% on CBUs and 20% on components (refer to section 2.3.1). The APDP differs from the MIDP in that there will be no tariff phase-downs, as tariffs will remain stable for the duration of the programme (South African Automotive Benchmarking Club, 2008a:2).

5.3.2 Value Add Allowance

The second policy instrument of the APDP is the VAA, which will allow assemblers producing more than 50 000 vehicles annually to import a percentage of their components duty free (Car Magazine, 2008; Creamer, 2008). The 50 000 unit threshold is allowed across different model platforms and is determined per manufacturing plant. The VAA is to replace the current duty free allowance (DFA) (Deloitte and Touche, 2009:2; South African Automotive Benchmarking Club, 2008a:3).

The duty percentage under the VAA will be 20% in 2013, 19% in 2014 and 18% in 2015, after which the percentage will remain unchanged until the anticipated conclusion of the programme in 2020. The VAA percentage is lower than the percentage of 27% awarded in terms of the DFA (refer to section 2.3.2) (Deloitte and Touche, 2009:2; South African Automotive Benchmarking Club, 2008a:3).

Another key difference between the VAA and the DFA is that of requirements. Under the DFA, the allowance was awarded to manufacturers producing vehicles specifically for the domestic market (refer to section 2.3.2). The VAA is now awarded to manufacturers

domestically producing vehicles for *any* market. The VAA therefore does not give manufacturers producing for the domestic market preferential treatment (Deloitte and Touche, 2009:2; South African Automotive Benchmarking Club, 2008a:3).

5.3.3 Automotive Investment Scheme

The AIS will replace the Productive Asset Allowance (PAA), which elapsed in December 2009 (refer to section 2.3.3) (DTI, 2010c:1). During May 2010, the DTI published a document, *Automotive Investment Scheme Programme Guidelines*. As per these guidelines, the objectives of the AIS are to increase plant production volumes, sustain employment and strengthen the automotive value chain. In terms of the scheme, a taxable cash grant of 20% of the value of the qualifying investment in productive assets is awarded to qualifying firms. An additional taxable cash grant of either 5% or 10% may be awarded to firms if certain requirements are met and the DTI determines the relevant project to be strategic. Essentially, the additional grants are based on the additional performance of qualifying applicants on economic benefit expenditures (DTI, 2010a:6). The effective date of the programme is 1 July 2009 (DTI, 2010a:7).

To qualify for the 20% taxable cash grant, applicants must meet certain mandatory requirements, the project for which the grant is to be awarded should qualify, and the applicant should be eligible (DTI, 2010a:7-9).

One of the mandatory requirements is that the applicant should undertake manufacturing activities in South Africa and should be a registered legal entity in the country in terms of either the Companies Act, 1973 (as amended), or the Close Corporations Act, 1984 (as amended) (DTI, 2010a:7).

The guidelines further indicate that the 20% taxable cash grant will be awarded only to projects of original equipment manufacturers (OEMs) registered with the International Trade Administration Commission (ITAC), in terms of Note 1 to Chapter 98 of the Customs and Excise Act No. 91 of 1964 (DTI, 2010a:8). OEM projects of below R30 million will not qualify for the AIS (DTI, 2010a:14). Projects by component manufacturers will qualify only

if the component manufacturer is included in an OEM supply chain (DTI, 2010a:8). Component manufacturer projects of below R1 million will not qualify for the AIS (DTI, 2010a:14).

In addition to the above, an OEM will be eligible only if it introduces new or replacement models and is able to demonstrate that it will manufacture 50 000 units per annum over a period of three years. The number of units is determined per manufacturing plant. A component manufacturer will be eligible only if it can prove that it has been included in an OEM's supply chain, by way of contract or letter of intent, for the supply of components. The component manufacturer must also demonstrate that, subsequent to the investment, it will achieve at least 25% of the total entity turnover or R10 million annually by the end of the first full year of commercial production, as part of the OEM supply chain, locally and/or internationally (DTI, 2010a:9).

The DTI guidelines also provide for additional requirements to be met if an applicant should wish to qualify for the additional 5% or 10% taxable cash grant (DTI, 2010a:9-11).

The value of the taxable cash grants is determined with reference to the value of qualifying productive assets. The guideline indicates that, subject to certain conditions, the following assets are regarded as qualifying productive assets (DTI, 2010a:11-13):

- Owned buildings and/or improvements to owned buildings;
- New plant, machinery, equipment and tooling;
- Second-hand, refurbished and upgraded plant, machinery and tooling.

The taxable cash grant is payable annually, subject to achieving the following requirements (DTI, 2010a:15-16):

- "First claim (Option 1): In order to process the first claim and qualify for a 33,33% payment, projects must have commenced commercial production; or
- First claim (Option 2): In order to process the first claim and qualify for a 16,66% payment, projects must have commenced investment commissioning – where the commissioning period spans more than six (6) months and where the projects have

at least 50% of the qualifying investment on site, assembled and installed. In order to qualify for the 33.33% first claim payment, projects must have commenced commercial production.

- Second claim: The second claim may only be lodged 12 months after commencement of commercial production. In order to process the second claim and qualify for the second payment, to a maximum of a cumulative 66.66% payment of the approved incentive amount, projects must achieve at least 50% of the approved eligibility criteria and at least 50% of the economic benefit requirements.
- Third claim: The third claim may only be lodged 24 months after commencement of commercial production. In order to process the third claim and qualify for a final payment to a maximum of a cumulative 100% payment of the approved incentive amount, projects must achieve the minimum 50 000 plant production volume and achieve 100% of the approved economic benefit requirements and eligibility criteria.”

The PAA was accessible only to OEMs (refer to section 2.3.3), while component manufacturers can also apply for the AIS.

5.3.4 Production Incentive

The last policy instrument of the APDP represents the true transformation of the MIDP into the APDP. The PI is to replace the Import-Export Complementation (IEC) scheme (refer to section 2.3.4), as included in the MIDP (Deloitte and Touche, 2009:2; Makapela, 2008). A production incentive will be granted according to the amount of local value added as opposed to the value of exports generated. There is thus a transition from an export-based to a production-based instrument. The incentive consists of a tradable duty credit, which is calculated as being 55% of the difference between the selling price and the raw material element (the value-added). The value-added amount is also adjusted for foreign currency usage costs. The duty percentage will be gradually reduced to 50% over a period of five years. Vulnerable sectors may, however, still be entitled to an additional 5% (Creamer, 2008; Deloitte and Touche, 2009:2). A further adjustment of 80% is required to ensure that an equal incentive level is created for the importation of both CBUs and completely knocked-down (CKD) units (South African Automotive Benchmarking Club, 2008a:3).

5.4 SUMMARY

Chapter 5 discussed the objectives of the APDP and subsequently compared them with the objectives of the MIDP. It was found that the objectives of the APDP and the MIDP are very similar. These similarities made it possible to use the same CSFs to benchmark the performance of the MIDP and the anticipated performance of the APDP.

Chapter 5 concluded by discussing the four policy instruments of the APDP. The next chapter will provide a summary of the survey results by discussing those survey responses that were statistically significant.

CHAPTER 6

6 CONCLUSIONS

6.1 INTRODUCTION

The previous chapter provided an overview of the objectives and the policy instruments of the Automotive Production and Development Programme (APDP). The chapter also indicated that the objectives of the APDP and the Motor Industry Development Programme (MIDP) are very similar, making it appropriate to use the same critical success factors (CSFs) as a performance measurement benchmark for both programmes.

This chapter commences with an overview of the objectives of the present study and the methodology employed to achieve these objectives. The chapter will continue with an analysis of the survey results pertaining to Question 12 of the survey. It will conclude with a summary of the hypotheses of the study and an indication of whether or not the relevant hypotheses have been satisfied.

6.2 RESEARCH OBJECTIVE

As stated in section 1.3 of Chapter 1, the objectives of the present study are to determine whether:

- The MIDP has achieved its objectives as formulated by the Department of Trade and Industry (DTI); and
- Stakeholders are of the opinion that the APDP will achieve its objectives as formulated by the DTI.

This chapter will go towards achieving the objectives of the present study by analysing stakeholder opinions on the performance of the MIDP and the anticipated performance of the APDP against a common benchmark. Table 11 contains a summary of the CSFs used as the common benchmark as well as an indication of the question number in the survey that relates to the specific CSF for either the MIDP or the APDP.

Table 11: Linkage between CSFs and the survey questions

CSF	MIDP	APDP
1. Higher-quality motor vehicles	Question 12(A) 1	Question 12(B) 1
2. Higher-quality components	Question 12(A) 2	Question 12(B) 2
3. More affordable motor vehicles	Question 12(A) 3	Question 12(B) 3
4. More affordable components	Question 12(A) 4	Question 12(B) 4
5. Increased exports	Question 12(A) 5	Question 12(B) 5
6. Decreased imports	Question 12(A) 6	Question 12(B) 6
7. Improved automotive industry trade balance	Question 12(A) 7	Question 12(B) 7
8. Creation of sustainable exports	Question 12(A) 8	Question 12(B) 8
9. Creation of diversified component exports	Question 12(A) 9	Question 12(B) 9
10. Increase in the local production volumes of motor vehicles	Question 12(A) 10	Question 12(B) 10
11. Increase in the local production volumes of components	Question 12(A) 11	Question 12(B) 11
12. Increase in local content of motor vehicles	Question 12(A) 12	Question 12(B) 12
13. Increase in local content of components	Question 12(A) 13	Question 12(B) 13
14. Rationalisation of the number of vehicle models produced locally	Question 12(A) 14	Question 12(B) 14
15. Increase in local investment	Question 12(A) 15	Question 12(B) 15
16. Increase in local research and development activities	Question 12(A) 16	Question 12(B) 16
17. Increase in local productivity	Question 12(A) 17	Question 12(B) 17
18. Sustainable employment levels	Question 12(A) 18	Question 12(B) 18
19. Programme complies with the requirements of the World Trade Organization (WTO)	Question 12(A) 19	Question 12(B) 19

6.3 RESEARCH DESIGN AND METHODOLOGY

In Chapter 3, it was noted that the research objectives of the present study are to be achieved as follows:

- Conducting a literature review on the implementation results of the MIDP (refer to Chapter 2);
- Carrying out a survey to obtain stakeholders' opinions on the implementation results of the MIDP (survey results analysed in the current chapter); and
- Carrying out a survey to obtain stakeholders' opinions on the anticipated implementation results of the APDP (survey results analysed in the current chapter).

The survey was distributed to a population of approximately 200 stakeholders in the automotive industry. For purposes of the present study, automotive industry stakeholders were regarded as being members of the National Association of Automobile Manufacturers in South Africa (NAAMSA) and the National Association of Automotive Component and Allied Manufacturers (NAACAM) as at March 2010 (refer to section 3.7). Of the approximately 200 stakeholders, 58 participated in the study, 36 of whom completed all the questions required for statistical analysis. This represents a response rate of approximately 18% (refer to section 3.8). It should therefore be noted that the statistical analysis was based on the survey responses of 36 participating stakeholders. In analysing the survey results, it is important to understand:

- The difference between perception and fact; and
- What is regarded as significant in the application of the relevant methods of statistical analysis.

6.3.1 Perception as opposed to fact

Perception can be defined as follows:

- “Process by which people translate sensory impressions into a coherent and unified view of the world around them. Though necessarily based on incomplete and unverified (or unreliable) information, perception is 'the reality' and guides human behaviour in general” (BusinessDictionary.com, 2010f).
- “The process by which an organism detects and interprets information from the external world by means of the sensory receptors” (Thefreedictionary.com, 2010c).
- “Process of registering sensory stimuli as meaningful experience” (Answers.com, 2010b).

Based on the above, perception will be defined for purposes of the present study as how one views the world or a situation. This “view” is influenced by different frames of reference and will therefore not be the same for every individual. It is experienced-based and will therefore not necessarily be aligned with the factual state.

Fact can be defined as follows:

- “Event, item of information, or state of affairs existing, observed, or known to have happened, and which is confirmed or validated to such an extent that it is considered 'reality'” (BusinessDictionary.com, 2010c).
- “Truth or reality of something: the truth or actual existence of something, as opposed to the supposition of something or a belief about something” (Encarta.msn.com, 2009).
- “A truth verifiable from experience or observation” (Thefreedictionary.com, 2010b).

Fact will be defined for purposes of the present study as something that can be objectively verified with reference to data observed and published in the public domain.

From the above it can be deduced that perception and fact are not necessarily aligned. While perception may make a valuable contribution to the interpretation of survey results, for purposes of the present study, where there are inconsistencies between fact and perception apropos of the MIDP, fact will count for more. However, as factual details of the anticipated implementation results of the APDP are not yet available, conclusions will be based on perceptions alone as a means of forecasting implementation results.

6.3.2 Measures of statistical significance

Bowker’s Test was used to compare the elements of Question 12(A) of the survey for the MIDP with Question 12(B) for the APDP. The test therefore determines whether the perceptions of participating stakeholders differ for each of the CSFs. A difference in perception is determined by the calculation of a p value. Where the p value is less than 0.05, it is statistically significant, which indicates a significant difference in response. The statistical analyses were done on two levels:

- Analysis of overall perception: This was to determine the perception of the greatest number of the participating stakeholders, which was based on a proportional analysis expressed as a percentage (i.e. how many stakeholders as a proportion of the total stakeholder group agreed, disagreed or were uncertain). The overall perception assisted in concluding on whether the MIDP had achieved its objectives.

- Analysis of a change in perceptions: This was to determine how participating stakeholders' perceptions of the two programmes have changed from the MIDP to the APDP, using the calculated p value as a measure of significance.

Fisher's Exact Test was used to determine whether the perception pertaining to a specific CSF is dependent upon a specific respondent type (i.e. original equipment manufacturer (OEM), component manufacturer or other stakeholders) (refer to section 3.9). A difference in perception among the different stakeholders is determined by the calculation of a p value. Where the p value is less than 0.05, it is statistically significant, which indicates that the perception of the CSF concerned is dependent upon the stakeholder type. The statistical analysis revealed that only two of the CSFs indicated a dependency on stakeholder type:

- Under the MIDP: Creation of diversified component exports;
- Under the APDP: Increase in the local production volumes of components.

For all the remaining CSFs under the MIDP and the APDP, it was found that there was no statistical significance regarding the dependency of stakeholder perceptions on stakeholder types. Therefore, only the two areas of statistical significance were addressed in the relevant sections below.

The survey response categories have been grouped as follows for purposes of statistical analysis:

- "Strongly Agree" and "Agree": Grouped together under "Agree";
- "Strongly Disagree" and "Disagree": Grouped together under "Disagree".
- "Uncertain": Remains under "Uncertain".

The above sections provided an overview of the research objectives and the research methodology, and also discussed the approach followed during the statistical analysis. The following sections will discuss the survey results and determine whether or not the hypotheses of the present study have been satisfied or not.

6.3.3 Higher-quality motor vehicles

Table 12: Question 12 A(1) and B(1)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created higher-quality motor vehicles	58.33%	13.89%	27.78%
APDP	The APDP will create higher-quality motor vehicles	47.22%	11.11%	41.67%

Based on the literature review conducted in section 2.4.1, it was concluded that it is uncertain whether the MIDP has created higher-quality motor vehicles. Of the 36 participating stakeholders, 58.33% agreed that the MIDP has achieved this CSF, while 13.89% disagreed and 27.78% were uncertain (refer to Table 12). Therefore the majority of participating stakeholders agreed that the MIDP has achieved this CSF. It is difficult to determine the extent of the MIDP's contribution to quality, as no studies could be found in the public domain comparing the quality of motor vehicles with and without the MIDP. However, as a result of the integration of the South African automotive industry, manufacturers have been exposed to high international standards (refer to section 2.4.1). Global integration (refer to section 2.2) is one of the objectives of the MIDP, so it can be deduced that the MIDP has played a role in improving the quality of motor vehicles. Recent recalls (refer to section 2.4.1.3) were attributable mostly to design rather than manufacturing defects. As discussed in section 2.4.5, the design responsibilities lie mainly with the foreign holding/controlling entities.

Despite the fact that detailed research results regarding the overall quality of locally manufactured vehicles could not be found in the public domain, there are strong indications that South African motor vehicles are of a high quality. It can thus be concluded that the MIDP has created higher-quality motor vehicles. The MIDP hypothesis for this CSF has therefore been satisfied.

Overall, 47.22% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 11.11% disagreed and 41.67% were uncertain (refer to Table 12). There was no significant change in perception among stakeholders from the MIDP to the APDP indicated by a p value of 0.149. As the greater number of participating stakeholders agreed, it is anticipated

that the APDP will continue to create higher-quality motor vehicles. The APDP hypothesis for this CSF has therefore been satisfied.

6.3.4 Higher quality components

Table 13: Question 12 A(2) and B(2)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created higher-quality components	72.22%	8.33%	19.44%
APDP	The APDP will create higher-quality components	52.78%	19.44%	27.78%

Based on the literature review conducted in section 2.4.1, it was concluded that it is uncertain whether the MIDP has created higher-quality components. Of the 36 participating stakeholders, 72.22% agreed that the MIDP has achieved this CSF, while 8.33% disagreed and 19.44% were uncertain (refer to Table 13). The majority of participating stakeholders therefore agreed that the MIDP has achieved this CSF. It is difficult to determine the extent of the MIDP's contribution to quality as no studies could be found in the public domain in which the quality of components with and without the MIDP was compared. However, in section 2.4.1.2 it was noted that both the customer return rate and the internal scrap rate of components have improved substantially. As noted in section 6.3.3, the global integration of the South African automotive industry has brought about exposure to high international quality standards.

It can therefore be concluded that the MIDP has created higher-quality components. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 52.78% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 19.44% disagreed and 27.78% were uncertain (refer to Table 13). However, 66.67% of participating stakeholders who disagreed about the MIDP still disagree. The overall rate of agreement has decreased from the rate pertaining to the MIDP above. A p value of 0.129 was calculated which indicates that there was no significant change in perception (from the MIDP to the APDP) among stakeholders.

Six of the participating stakeholders commented that the MIDP was focused mainly on benefiting the OEMs. It may therefore be difficult to forecast with certainty what the anticipated implementation results of the APDP will be regarding the quality of components. The element of uncertainty could in all likelihood be removed only once the provisions of the APDP regarding component manufacturers have been finalised and once OEMs have started deploying their APDP-aligned supply chain strategies (That is, will OEMs make more extensive use of domestic component manufacturers?).

As the majority of participating stakeholders agreed, it appears as if it is anticipated that the APDP will continue to create higher-quality components. Therefore the APDP hypothesis for this CSF has been satisfied. It is not clear that the MIDP's performance will continue under the APDP if the uncertainty and disagreement on increased exports were to materialise, as it is likely that the discipline imposed by the export of motor vehicles and components has been the primary driver of high quality components.

6.3.5 More affordable motor vehicles

Table 14: Question 12 A(3) and B(3)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created more affordable motor vehicles.	50%	38.89%	11.11%
APDP	The APDP will create more affordable motor vehicles.	44.44%	19.44%	36.11%

Based on the literature review conducted in section 2.4.2, it was concluded that it is uncertain whether the MIDP has created more affordable motor vehicles. Of the 36 participating stakeholders, 50% agreed that the MIDP has achieved this CSF, while 38.89% disagreed and 11.11% were uncertain (refer to Table 14). The greater number of participating stakeholders agreed that the MIDP has achieved this CSF. It was difficult to determine the extent of the MIDP's contribution towards affordability of motor vehicles as no studies could be found in the public domain where the affordability of motor vehicles with and without the MIDP was compared. In addition, the price studies located in the public domain did not deliver consistent, comparable results.

Price forming in the market is subject to complex dynamics. An important driver is competition. The import-support part of the Import-Export Complementation (IEC) scheme resulted in an increase in the number and value of light vehicles imported from some 26,000 and R0.2 billion in 1995 to some 306,000 and R30,3billion in 2006 (NAAMSA, 2009, AIEC, 2009). In this period imports increased from 7% to 45% of the market. From the increase in the number and value of imported vehicles in the presence of continually reducing import tariff levels, it can be understood that competitive forces were brought to bear on pricing of locally produced light vehicles in particular and light vehicle prices in general. Inspection of prices of vehicles show that affordable imported vehicles from low manufacturing cost countries such as India, China and to some extent Korea and Japan offer South African light vehicle buyers affordable options, albeit not from locally manufactured vehicles. It stands to reason that the competition afforded by these low cost alternatives moderates pricing of locally manufactured light motor vehicles. It therefore appears reasonable to accept that the perception that the MIDP has created affordable motor vehicles is valid, thereby satisfying the relevant hypothesis.

Overall, 44.44% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 19.44% disagreed and 36.11% were uncertain (refer to Table 14). However, 50% of participating stakeholders who disagreed about the MIDP still disagree. The overall rate of agreement has decreased from the rate pertaining to the MIDP above. A p value of 0.0117 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in the perceptions by participating stakeholders can be attributed mainly to the following:

- 22.22% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so;
- 35.71% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

It therefore appears that the decrease in the level of agreement was attributable to uncertainty among stakeholders. This was to be expected, as the APDP is a new programme which has yet to be implemented. It may be difficult to project the anticipated

implementation results of the APDP, as the cost of motor vehicles is affected by various extraneous factors such as exchange rates, and carbon and other taxes.

Although the greater number agreed that the APDP will continue to create affordable motor vehicles, it appears that there is uncertainty as to the extent of the APDP's contribution in this regard. It is therefore uncertain whether the APDP hypothesis for this CSF has been satisfied.

6.3.6 More affordable components

Table 15: Question 12 A(4) and B(4)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created more affordable components	55.56%	30.56%	13.89%
APDP	The APDP will create more affordable components	41.67%	25%	33.33%

In the literature review conducted in section 2.4.3, it was concluded that the MIDP has created more affordable components. Of the 36 participating stakeholders, 55.56% agreed that the MIDP has achieved this CSF, while 30.56% disagreed and 13.89% were uncertain (refer to Table 15). Therefore the majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

One participating stakeholder commented that under the MIDP, the OEMs, as the direct key beneficiaries of the MIDP, abused their power by pressuring component manufacturers to lower their prices to unsustainable levels. The stakeholder also noted that industrial sectors involved in the beneficiation of scrap metals have received limited assistance from the South African government, which adversely impacts on the cost of components, as scrap metal is an important ingredient of components. The stakeholder suggested that it may be wise for the South African government to look to protecting the raw material resources in South Africa, as this may have a beneficial effect on the whole of the automotive supply chain. Another participating stakeholder commented that local component manufacturers have the added burden of complying with Broad Based Black

Economic Empowerment (BBBEE) requirements, while these requirements are waived in the case of importation of components by OEMs.

However, in section 2.4.3 it was noted that there has been a significant improvement in inventory control in respect of components. These improvements will affect the final cost of components. The improvement can therefore be equated with an improvement in the affordability of components.

Based on the above and as the majority of participating stakeholders agreed, it appears that the MIDP has created more affordable components. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 41.67% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 25% disagreed and 33.33% were uncertain (refer to Table 15). However, 54.55% of participating stakeholders who disagreed on the MIDP still disagree. The overall rate of agreement decreased from the rate pertaining to the MIDP above. A p value of 0.046 was calculated, indicating that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in perceptions by participating stakeholders can be attributed mainly to 36.36% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, but were uncertain whether the APDP will do so.

It appears that the decrease in the level of agreement is attributable to uncertainty among stakeholders. This is to be expected, as the APDP is a new programme which has yet to be implemented. Just as in the case of motor vehicles (refer to section 6.3.5), it may be difficult to project the anticipated implementation results, as the cost of components is affected by various factors.

It is therefore uncertain first whether the APDP will create more affordable components and secondly whether the APDP hypothesis for this CSF has been satisfied.

6.3.7 Increased exports

Table 16: Question 12 A(5) and B(5)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created increased exports	88.89%	8.33%	2.78%
APDP	The APDP will create increased exports	47.22%	36.11%	16.67%

Based on the literature review conducted in section 2.4.4, it was concluded that the MIDP has created an increase in exports. Of the 36 participating stakeholders, 88.89% agreed that the MIDP has achieved this CSF, while 8.33% disagreed and 2.78% were uncertain (refer to Table 16). The majority of participating stakeholders thus agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review. It appears that the MIDP has created an increase in exports. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 47.22% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 36.11% disagreed and 16.67% were uncertain (refer to Table 16). The overall rate of agreement decreased from the rate pertaining to the MIDP above. A p value of 0.004 was calculated, which indicates that there was a significant change in perception (from the MIDP to the APDP) among stakeholders. The change in the perception by participating stakeholders can be attributed mainly to the following:

- 15.63% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 34.38% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, disagreed that the APDP will do so.

The decrease in the percentage of agreement is probably due to the change in criterion to qualify for the incentive. The Production Incentive (PI) will be granted based on the amount of local value added rather than the value of exports generated. In addition, there is concern that the stabilised level of import tariffs could be too low, which may increase imports, decrease exports or both (refer to section 5.3.1). As can be seen from section 6.3.8 below, stakeholders anticipate an increase in imports to the detriment of exports.

Therefore, although the greater number of participating stakeholders agreed that the APDP will continue to create an increase in exports, it appears that the extent of the APDP's contribution in this regard is uncertain. It is therefore uncertain whether the APDP hypothesis for this CSF has been satisfied.

6.3.8 Decreased imports

Table 17: Question 12 A(6) and B(6)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created a decreased imports	36.11%	58.33%	5.56%
APDP	The APDP will create decreased imports	36.11%	25%	38.89%

Based on the literature review conducted in section 2.4.4, it was concluded that the MIDP has not created decreased imports. Of the 36 participating stakeholders, 36.11% agreed that the MIDP has achieved this CSF, while 58.33% disagreed and 5.56% were uncertain (refer to Table 17). The majority of participating stakeholders thus disagreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP has not created a decrease in imports. Therefore the MIDP hypothesis for this CSF has not been satisfied.

Overall, 36.11% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 25% disagreed and 38.89% were uncertain (refer to Table 17). The overall rate of disagreement has decreased from the rate pertaining to the MIDP above. A p value of 0.0029 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in the perceptions of participating stakeholders can be attributed mainly to the following:

- 38.10% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 28.57% of the participating stakeholders, who disagreed that the MIDP achieved this CSF, agreed that the APDP will do so.
- 30.77% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

It appears uncertain first whether the APDP will create a decrease in imports, and secondly whether the APDP hypothesis for this CSF has been satisfied, possibly due to the same reasons as mentioned in section 6.3.7.

6.3.9 Improved automotive trade balance

Table 18: Question 12 A(7) and B(7)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an improved automotive industry trade balance	63.89%	27.78%	8.33%
APDP	The APDP will create an improved automotive industry trade balance	47.22%	16.67%	36.11%

Based on the literature review conducted in section 2.4.4, it was concluded that the MIDP has not created an improved automotive industry trade balance. Of the 36 participating stakeholders, 63.89% agreed that the MIDP has achieved this CSF, while 27.78% disagreed and 8.33% were uncertain (refer to Table 18). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, despite the trade balance being in deficit for a number of years which contradicts the results of the literature review. It is possible that participating stakeholders related this CSF to their MIDP projects' contributions to the trade balance and did not consider the overall sector dynamics. However, the CSF in this case relates to the automotive industry as a whole. The researcher will therefore allow more weight to the facts available in the literature review (refer to section 6.3.1).

It appears that the MIDP has not created an improved automotive trade balance. Therefore the MIDP hypothesis for this CSF has not been satisfied.

Overall, 47.22% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 16.67% disagreed and 36.11% were uncertain (refer to Table 18). The overall rate of agreement decreased from the rate pertaining to the MIDP above. A p value of 0.0147 was calculated, indicating that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in the perceptions of participating stakeholders can be attributed mainly to the following:

- 50% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 21.74% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

Although the majority of participating stakeholders agreed that the APDP will create an improved industry trade balance, there is apparently some uncertainty as to the extent of the APDP's contribution in this regard. It is therefore uncertain whether the APDP hypothesis for this CSF has been satisfied, possibly due to the same reasons as mentioned in section 6.3.7

6.3.10 Creation of sustainable exports

Table 19: Question 12 A(8) and B(8)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created sustainable exports	86.11%	8.33%	5.56%
APDP	The APDP will create sustainable exports	36.11%	27.78%	36.11%

Based on the literature review conducted in section 2.4.4, it was concluded that the MIDP has not created sustainable exports. Of the 36 participating stakeholders, 86.11% agreed that the MIDP has achieved this CSF, while 8.33% disagreed and 5.56% were uncertain (refer to Table 19). The majority of participating stakeholders agreed that the MIDP achieved this CSF, which contradicts the results in the literature review. One participating stakeholder commented that programmes like the MIDP and the APDP are paramount to sustaining the South African automotive industry, which support them (i.e. automotive programmes are pivotal in sustaining exports). Although the sustainability of the industry and its exports may become evident only when significant support of the industry is removed, participating stakeholders seem to believe that the support received under the MIDP was enough to sustain the export market. The risk of potential WTO action against the MIDP which could compromise sustainability, has evidently been rated as low given the South African Government's known intent to remove the cause of the risk under the APDP.

As the majority of participating stakeholders agreed, it appears that the MIDP has created sustainable exports. The MIDP hypothesis for this CSF has therefore been satisfied.

Overall, 36.11% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 27.78% disagreed and 36.11% were uncertain (refer to Table 19). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.0004 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in the perceptions by participating stakeholders is attributable mainly to the following:

- 66.67% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 29.03% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 32.26% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, disagreed that the APDP will do so.

Three participating stakeholders commented that the APDP would not sustain component exports, which were supported and which flourished under the MIDP. Two others commented that logistical costs in South Africa were, for the most part, higher than those elsewhere in the world, and that these increased costs contributed to making prices of locally manufactured vehicles and components uncompetitive. As noted in section 2.4.5, cost is an important factor when making sourcing decisions. As a result, increased logistical costs may adversely affect one of the elements of competitiveness which may in turn adversely affect the sustainability of South African automotive industry exports.

While the MIDP contributed to a major increase in exports, the sustainability of the surge in exports is questionable as it is possible that the removal of the IEC scheme could result in the collapse of or disinvestment by entities focused on the component export market, negatively impacting on its sustainability. The extensive focus on component exports, catalytic converter exports in particular, was as a result of the strategy followed by many assemblers to generate component exports on a large scale only to generate import rebates to reduce import tariffs in respect of the importation of motor vehicles (Black &

Bhanisi, 2007:141-142). The change to an incentive based on production rather than exports (refer to section 6.3.7) appears to be a significant cause for the increased disagreement and uncertainty.

Consequently it is uncertain first whether the APDP will create sustainable exports and secondly whether the APDP hypothesis for this CSF has been satisfied.

6.3.11 Creation of diversified component exports

According to Fisher's Exact Test, the perceptions by participating stakeholders of this CSF for the MIDP were dependent on the stakeholder type. As indicated in section 3.9, participating stakeholders were divided into the following three groups:

- OEMs;
- Component manufacturers; and
- Other stakeholders.

Table 20: The impact of the MIDP on the creation of diversified component exports

Stakeholder Type	Agree	Disagree	Uncertain
OEMs	16.67%	66.67%	16.67%
Component Manufacturers	76.47%	11.76%	11.76%
Other stakeholders	46.15%	38.46%	36.11%

Of the six participating OEMs, 16.67% agreed that the MIDP has created diversified component exports, 66.67% disagreed and 16.67% were uncertain. Of the 17 participating component manufacturers, 76.47% agreed, 11.76% disagreed and 11.76% were uncertain. Of the 13 other participating stakeholders, 46.15% agreed, 11.76% disagreed and 36.11% were uncertain (refer to Table 20).

The researcher believes that perceptions by OEMs may be due to the high international standards required by export destinations. This would require OEMs to include those component manufacturers in their supply chain, which would contribute to an increase in the ability to successfully compete globally (refer to section 2.4.5). Thus, OEMs may opt to include only a few local component manufacturers in their supply chains, limiting the level

of diversification on the local level. The researcher believes that the perceptions by component manufacturers may be due to the exportation of a wider range of components as a result of increased access to export destinations with the support of the MIDP. Other participating stakeholders were more neutral in their perceptions. This may be as a result of the role that other stakeholders play in the South African automotive industry, for instance, the South African government, which plays a supporting role in the industry.

Table 21: Question 12 A(9) and B(9)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created diversified component exports	55.56%	30.56%	13.89%
APDP	The APDP will create diversified component exports	30.56%	33.33%	36.11%

Based on the literature review conducted in section 2.4.4, it was concluded that the MIDP has not created diversified component exports. Of the 36 participating stakeholders, 55.56% agreed that the MIDP has achieved this CSF, while 30.56% disagreed and 13.89% were uncertain (refer to Table 21). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which contradicts the results in the literature review. Although stakeholders believed that the MIDP has achieved this CSF, the literature review revealed that 55% and 7.5% of component exports (based on value add, not volumes alone) was attributable to stitched leather seat parts and catalytic converters respectively (refer to section 2.4.4). One stakeholder commented that the die-casting industry had been downsized by 40% over the past 11 years due to a lack of support by the South African government (via the MIDP or other programmes).

The MIDP appears to have satisfied this CSF to some extent. The survey question was not formulated so as to guide participating stakeholders to take the economic value add of components into account. The MIDP therefore appears to have created diversified component exports in terms of variety but not in terms of value add. Based on the value add of component exports, there has been no significant diversification under the MIDP. In terms of the above discussion, the researcher will allot more weight to fact than to perception for this CSF. The MIDP appears not to have achieved this CSF. The MIDP hypothesis for this CSF has therefore not been satisfied.

Overall, 30.56% of the 36 stakeholders agreed that the APDP would achieve this CSF, while 33.33% disagreed and 36.11% were uncertain (refer to Table 21). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.0223 was calculated which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in perception by participating stakeholders is attributable mainly to the following:

- 27.27% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 25% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

Six of the participating stakeholders expressed concern about the effect of the APDP on component exports. The element of uncertainty will probably be removed only once the OEMs have started deploying their APDP-aligned supply chain strategies (That is, will OEMs make more extensive use of domestic component manufacturers?). One stakeholder commented that, under the current APDP provisions, structure component exports will decrease dramatically, especially if the value-added chain does not include alloy manufacture at the supply base. As a result, it may be possible that, when the level of component exports decreases, there may be less opportunity for the South African industry to diversify its component exports.

It is therefore uncertain first whether the APDP will create diversified component exports and secondly whether the APDP hypothesis for this CSF has been satisfied.

6.3.12 Increase in the local production volumes of motor vehicles

Table 22: Question 12 A(10) and B(10)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in the local production volumes of motor vehicles	80.56%	16.67%	2.78%
APDP	The APDP will create an increase in the local production volumes of motor vehicles	75%	0%	25%

In the literature review conducted in section 2.4.5.2, it was concluded that the MIDP has created an increase in the local production volumes of motor vehicles. Of the 36 participating stakeholders, 80.56% agreed that the MIDP has achieved this CSF, while 16.67% disagreed and 2.78% were uncertain (refer to Table 22). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It therefore appears that the MIDP has created an increase in the local production volumes of motor vehicles. The MIDP hypothesis for this CSF has therefore been satisfied.

Overall, 75% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 25% were uncertain. None of the stakeholders disagreed (refer to Table 22). The overall rate of agreement has decreased from the rate for the MIDP above. However, 83.33% of participating stakeholders who disagreed under the MIDP subsequently agreed under the APDP. A measure of statistical significance (p -value) could not be determined for this CSF, as none of the participating stakeholders disagreed on the APDP's ability to achieve this CSF. The decrease in the level of agreement can be attributed to uncertainty among the participating stakeholders:

- 24.14% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 16.67% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

The majority of participating stakeholders agreed that the APDP will also achieve this CSF. This can be attributed primarily to the fact that qualifying criteria for the Automotive Investment Scheme (AIS) and the APDP include stretch targets for vehicle production volumes for a number of OEMs. The overarching objective of the APDP is to increase production to 1.2 million units per annum by 2020 (refer to section 5.2) (DTI, 2008). Furthermore, an increase in volumes, possibly resulting in the achievement of economies of scale, may translate into an increase in the rents realised by manufacturers, subject to the ability to successfully compete for a stake in the market share of its controlling firms outside of South Africa. Thus, there would be an incentive for OEMs to increase production volumes. In light of the foregoing, it appears as if the APDP will continue to create an increase in the local production volumes of motor vehicles, thereby satisfying the APDP hypothesis for this CSF.

6.3.13 Increase in the local production volumes of components

Table 23: Question 12 A(11) and B(11)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in the local production volumes of components	69.44%	19.44%	11.11%
APDP	The APDP will create an increase in the local production volumes of components	58.33%	11.11%	30.56%

Following the literature review conducted in section 2.4.5.2 in Chapter 2, it was concluded that the MIDP has created an increase in the local production volumes of components. Of the 36 participating stakeholders, 69.44% agreed that the MIDP has achieved this CSF, while 19.44% disagreed and 11.11% were uncertain (refer to Table 23). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results in the literature review.

It appears that the MIDP has created an increase in the local production volumes of components. Therefore the MIDP hypothesis for this CSF has been satisfied.

According to Fisher’s Exact Test, the perceptions by participating stakeholders of this CSF for the APDP was dependent on the stakeholder’s type. As indicated in section 3.9, participating stakeholders were divided into the following three groups:

- OEMs;
- Component manufacturers; and
- Other stakeholders.

Table 24: The anticipated impact of the APDP on local production volumes of components

Stakeholder Type	Agree	Disagree	Uncertain
OEMs	100%	0%	0%
Component manufacturers	64.71%	5.88%	29.41%
Other stakeholders	30.77%	23.08%	46.15%

All of the six participating OEMs agreed that the APDP will create an increase in the local production volumes of components. Of the 17 participating component manufacturers 64.71% agreed, 5.88% disagreed and 29.41% were uncertain. Of the 13 other participating stakeholders, 30.77% agreed, 23.08% disagreed and 46.15% were uncertain (refer to Table 24).

The positive perceptions by the OEMs may be based on the overarching objective of the APDP to increase production to 1.2 million units per annum by 2020 (refer to section 5.2). It appears that the participating OEMs are anticipating that the benefits under the APDP will also extend to the component manufactures in the form of increased volumes. This may be based on the premise that an increase in the volumes of motor vehicles may result in an increase in the demand for components. This is subject to the assumption that OEMs will source most of their components locally, which may not necessarily be the case. Component manufacturers are less positive. As noted earlier, there is a level of uncertainty about the extent to which the APDP and the supply chain strategies of OEMs will benefit component manufacturers. One stakeholder was of the opinion that the APDP will not address the manufacturing levels of components. Of the 13 other participating stakeholders, 46.15% were uncertain what the effect of the APDP on the local production volumes of components will be This may be as a result of the role played by other

stakeholders in the South African automotive industry, for instance the South African government, which plays a supporting role in the industry.

Overall, 58.33% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 11.11% disagreed and 30.56% were uncertain (refer to Table 23). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.0719 was calculated which indicates that there was no significant change in perceptions (from the MIDP to the APDP) among stakeholders.

The review of the MIDP confirmed that the automotive industry “generates strong linkages with other Input industries such as aluminium, chemicals, electronics, leather [and] textiles, plastics, steel, machinery and equipment” (DTI, 2008:1). One stakeholder commented that scrap metals and other raw materials that are important ingredients of components have received little assistance from the South African government (via the MIDP or otherwise).

The declared APDP design intent is to deepen the supply chain. In support of this the qualifying criteria for the AIS was expanded further upstream in the supply chain from those of the Productive Asset Allowance (PAA), which had been limited to direct supply to OEMs. The majority of participating stakeholders agreed that the APDP will achieve this CSF. Therefore, it appears as if the APDP should create an increase in the local production volumes of components (due to the same reasons as cited under the local production volumes of motor vehicles above). However, it will be dependent on the cost to OEMs to obtain the related benefit of supply cost reductions derived from incentives to their suppliers. Thus the extent of the APDP’s contribution to local production volumes will be dependent upon the finalisation of APDP aligned supply chain strategies by the OEMs. This is due to the dominant power exerted in the supply chain by OEMs.

Therefore, it appears that the APDP hypothesis for this CSF has been satisfied.

6.3.14 Increase in the local content of motor vehicles

Table 25: Question 12 A(12) and B(12)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in the local content of motor vehicles	61.11%	33.33%	5.56%
APDP	The APDP will create an increase in the local content of motor vehicles	58.33%	5.56%	36.11%

Based on the literature review conducted in section 2.4.5.3 in Chapter 2, it was concluded that the MIDP has not created an increase in the local content of motor vehicles. Of the 36 participating stakeholders, 61.11% agreed that the MIDP has achieved this CSF, while 33.33% disagreed and 5.56% were uncertain (refer to Table 25). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which contradicts the results in the literature review. As indicated in the literature review, the level of local content for vehicles assembled locally was 35% on average in 2008 (refer to section 2.4.5.3). It is difficult to determine the extent of the MIDP's contribution to the levels of local content of motor vehicles, as no studies could be found in the public domain in which the local content of motor vehicles with and without the MIDP was compared.

It is possible that the participating stakeholders responded to this survey question with reference to the local content levels of their own operations rather than those of the industry. Although 61.11% of the participating stakeholders agreed that the MIDP has created an increase in the local content of motor vehicles, these perceptions conflict with the conclusion reached in the literature review. The researcher will therefore allot more weight to the available facts, which were pointed out in the literature review (refer to section 6.3.1). Based on the above, it appears that the MIDP has not created an increase in the local content of motor vehicles. Therefore the MIDP hypothesis for this CSF has not been satisfied.

Overall, 58.33% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 5.56% disagreed and 36.11% were uncertain (refer to Table 25). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.0066 was calculated, which indicates that there was a significant change in perceptions (from the

MIDP to the APDP) among stakeholders. The change in perceptions by participating stakeholders can be attributed mainly to the following:

- 50% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 27.27% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

The aim of the APDP is to increase local content to 80% (Cillié, 2008). Whether or not this will become a reality will be evident only after the APDP has been in place for a period of time. However, there is a significant drive, under the APDP, to create an increase in overall local value-add. The PI will be based on the amount of local value-added (refer to section 5.3.4), which will create an incentive to increase local content in order to gain access to the PI's benefits.

Based on the above and on stakeholders' perceptions, it appears that the APDP will create an increase in the local content of motor vehicles. The relevant hypothesis has therefore been satisfied.

6.3.15 Increase in the local content of components

Table 26: Question 12 A(13) and B(13)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in the local content of components	63.89%	25%	11.11%
APDP	The APDP will create an increase in the local content of components	63.89%	2.78%	33.33%

Following the literature review conducted in section 2.4.5.3 of Chapter 2, it was concluded that the MIDP has created an increase in the local content of components. Of the 36 participating stakeholders, 63.89% agreed that the MIDP has achieved this CSF, while 25% disagreed and 11.11% were uncertain (refer to Table 26). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP has created an increase in the local content of components. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 63.89% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 2.78% disagreed and 33.33% were uncertain (refer to Table 26). The overall rate of agreement has remained the same as the rate for the MIDP above. A p value of 0.009 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. This change is attributable mainly to the following:

- 33.33% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 21.74% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

Based on earlier discussions in this chapter, there appears to be some level of scepticism as to whether the APDP and the supply chain strategies of OEMs will indeed be more beneficial for component manufacturers than the MIDP. The element of uncertainty will probably be removed once the OEMs have started deploying their APDP-aligned supply chain strategies (That is, will OEMs make more extensive use of domestic component manufacturers?).

Despite the element of uncertainty, the majority of participating stakeholders agreed that the APDP will create an increase in the local content of components. Therefore, the APDP hypothesis for this CSF has been satisfied.

6.3.16 Rationalisation of the number of vehicles models produced locally

Table 27: Question 12 A(14) and B(14)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created rationalisation of the number of vehicle models produced locally	77.78%	16.67%	5.56%
APDP	The APDP will create rationalisation of the number of vehicle models produced locally	61.11%	11.11%	27.78%

Based on the literature review conducted in section 2.4.5.4 of Chapter 2, it was concluded that the MIDP has created rationalisation of the number of vehicle models produced locally. Of the 36 participating stakeholders, 77.78% agreed that the MIDP has achieved this CSF, while 16.67% disagreed and 5.56% were uncertain (refer to Table 27). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It thus appears that the MIDP created rationalisation of the number of vehicle models produced locally. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 61.11% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 11.11% disagreed and 27.78% were uncertain (refer to Table 27). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.046 was calculated which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. This is attributable mainly to the following:

- 33.33% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 21.43% of the participating stakeholders, who agreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.

Although one of the objectives of the APDP is to facilitate the production of 1.2 million vehicles per annum by 2020 (refer to section 5.2), an element of uncertainty regarding the APDP's impact on the rationalisation of the industry remains. The 50 000 unit threshold under the AIS is allowed across different model platforms. Therefore, the researcher

believes that it may even be possible that some of the rationalisation achieved under the MIDP could be lost. Manufacturers may opt to increase production volumes by manufacturing additional vehicle models for the local market instead of entering into competition with sister plants of their controlling firms for increased access to export destinations.

It is therefore uncertain whether the APDP will create rationalisation of the number of vehicle models produced locally and whether the relevant hypothesis has been satisfied.

6.3.17 Increase in local investment

Table 28: Question 12 A(15) and B(15)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in local investment	86.11%	5.56%	8.33%
APDP	The APDP will create an increase in local investment	75%	5.56%	19.44%

Based on the literature review conducted in section 2.4.5.5 in Chapter 2, it was concluded that the MIDP has created an increase in local investment. Of the 36 participating stakeholders, 86.11% agreed that the MIDP has achieved this CSF, while 5.56% disagreed and 8.33% were uncertain (refer to Table 28). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP has created an increase in local investment. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 75% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 5.56% disagreed and 19.44% were uncertain (refer to Table 28). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.3715 was calculated, which indicates that there was no significant change in perceptions (from the MIDP to the APDP) among stakeholders.

The overarching objective of the APDP is to increase the production of vehicles to 1.2 million units per annum by 2020 (refer to section 5.2). To enable manufacturers to contribute to meeting this target, increased capacity is required. Increased capacity is created by an expansion in facilities, which requires increased investment (refer to section 2.4.5). One stakeholder commented that the APDP is following in the footsteps of the Australian automotive industry, as the provisions of the AIS are restrictive for investors. Another stakeholder commented that the investment incentives included in the APDP are still not sufficient to attract major increased investment. Therefore, even though the level of agreement under the APDP is not significantly lower than the level under the MIDP, there are still some reservations as to whether the APDP will successfully attract increased levels of investment. The implementation results of the APDP in this regard may become evident only once it has been in place for a period of time.

As the majority of participating stakeholders agreed that the APDP will create an increase in local investment, the APDP hypothesis for this CSF has been satisfied.

6.3.18 Increase in local research and development activities

Table 29: Question 12 A(16) and B(16)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in local research and development activities	25%	52.78%	22.22%
APDP	The APDP will create an increase in local research and development activities	38.89%	22.22%	38.89%

Based on the literature review conducted in section 2.4.5.5 in Chapter 2, it was concluded that the MIDP has not created an increase in local research and development activities. Of the 36 participating stakeholders, 25% agreed that the MIDP has achieved this CSF, while 52.78% disagreed and 22.22% were uncertain (refer to Table 29). The majority of participating stakeholders disagreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP has not created an increase in local research and development activities. Therefore the MIDP hypothesis for this CSF has not been satisfied.

Overall, 38.89% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 22.22% disagreed and 38.89% were uncertain (refer to Table 29). The overall rate of agreement has increased from the rate for the MIDP above. A p value of 0.02 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. This is attributable mainly to the following:

- 26.32% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, were uncertain whether the APDP will do so.
- 36.84% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, agreed that the APDP will do so.

Although there is still an element of uncertainty regarding the anticipated impact of the APDP, it appears as if participating stakeholders anticipate that the APDP will create an increase in local research and development activities. The aforementioned may be as a result of the fact that the AIS include provisions for increased support regarding research and development performance, while the MIDP did not provide similar support. (DTI 2010a: 10)

The anticipation therefore appears to be that the APDP will create an increase in local research and development activities. The APDP hypothesis for this CSF has therefore been satisfied.

6.3.19 Increase in local productivity

Table 30: Question 12 A(17) and B(17)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created an increase in local productivity	75%	13.89%	11.11%
APDP	The APDP will create an increase in local productivity	63.89%	8.33%	27.78%

Based on the literature review conducted in section 2.4.6.2, it was concluded that the MIDP has created an increase in local productivity. Of the 36 participating stakeholders, 75% agreed that the MIDP has achieved this CSF, while 13.89% disagreed and 11.11% were uncertain (refer to Table 30). The majority of participating stakeholders agreed that the MIDP achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP created an increase in local productivity. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 63.89% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 8.33% disagreed and 27.78% were uncertain (refer to Table 30). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.1023 was calculated, which indicates that there was no significant change in perceptions (from the MIDP to the APDP) among stakeholders.

There was an increase in the level of uncertainty among participating stakeholders. Productivity under the MIDP was driven particularly by international competition imposed by export requirements (Barnes & Morris, 2008:45-47). In the absence of export as a qualifying requirement under the APDP, stakeholders appear to have down-rated the extent of this pressure. Yet the end result appears to support the hypothesis of increased productivity.

6.3.20 Sustainable employment levels

Table 31: Question 12 A(18) and B(18)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP has created sustainable employment levels	69.44%	16.67%	13.89%
APDP	The APDP will create sustainable employment levels	61.11%	11.11%	27.78%

Based on the literature review conducted in section 2.4.6.1, it was concluded that the MIDP has created sustainable employment levels. Of the 36 participating stakeholders,

69.44% agreed that the MIDP has achieved this CSF, while 16.67% disagreed and 13.89% were uncertain (refer to Table 31). The majority of participating stakeholders agreed that the MIDP has achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP created sustainable employment levels. Therefore the MIDP hypothesis for this CSF has been satisfied.

Overall, 61.11% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 11.11% disagreed and 27.78% were uncertain (refer to Table 31). The overall rate of agreement has decreased from the rate for the MIDP above. A p value of 0.3701 was calculated, which indicates that there was no significant change in perceptions (from the MIDP to the APDP) among stakeholders.

As noted in section 2.4.6, it appears that improved labour productivity and production efficiency negatively impact employment growth and sustainability. In section 5.2 it was noted that the overarching objective of the APDP is to facilitate the production of 1.2 million vehicles per annum by 2020. An increase in local production volumes would most likely require an increase in productivity and efficiency, which could possibly have an adverse impact on per unit employment levels. Furthermore, one of the objectives of the APDP is to “stabilise and potentially increase employment levels” (Deloitte and Touche, 2009:1) (refer to section 5.2). This indicates an expectation that the APDP should not only facilitate the stabilisation of employment levels but should also potentially increase them. However, a CSF was not specifically formulated to confirm whether stakeholders anticipated that the APDP would contribute to employment growth.

Under the APDP, increased levels of AIS benefits can be accessed by increasing employment (DTI, 2010a:10). This explicit policy support for increased employment could be expected to support the level of agreement between the APDP’s achievement of the employment CSF.

As the majority of participating stakeholders agreed that the APDP will create sustainable employment levels, the APDP hypothesis for this CSF has been satisfied.

6.3.21 Programme complies with the requirements of the World Trade Organization

Table 32: Question 12 A(19) and B(19)

Programme	Hypotheses	Agree	Disagree	Uncertain
MIDP	The MIDP is a programme that complies with the requirements of the World Trade Organization (WTO)	13.89%	72.22%	13.89%
APDP	The APDP will be a programme that complies with the requirements of the WTO	66.67%	5.56%	27.78%

Based on the literature review conducted in section 2.4.7, it was concluded that the MIDP does not comply with the requirements of the WTO. Of the 36 participating stakeholders, 13.89% agreed that the MIDP has achieved this CSF, while 72.22% disagreed and 13.89% were uncertain (refer to Table 32). The majority of participating stakeholders disagreed that the MIDP achieved this CSF, which concurs with the results of the literature review.

It appears that the MIDP does not comply with the requirements of the WTO. Therefore the MIDP hypothesis for this CSF has not been satisfied.

Overall, 66.67% of the 36 stakeholders agreed that the APDP will achieve this CSF, while 5.56% disagreed and 27.78% were uncertain (refer to Table 32). The overall rate of agreement has increased from the rate for the MIDP above. A p value of < 0.0001 was calculated, which indicates that there was a significant change in perceptions (from the MIDP to the APDP) among stakeholders. The change in perceptions by participating stakeholders can be attributed mainly to the following:

- 76.92% of the participating stakeholders, who disagreed that the MIDP has achieved this CSF, agreed that the APDP will do so.

Dr Norman Lamprecht, currently the executive manager of the National Automobile Association of South Africa (NAAMSA) and a member of the Automotive Industry Export Council (AIEC) (Newman & Lloyd, 2010), conducted research during 2006 that indicated that an automotive programme complying with the requirements of the WTO was consistently ranked as being of high importance. One of the recommendations of the

research was to produce a WTO-compliant programme on a review of the MIDP. In line with the discussion in section 2.4.7, one participating stakeholder commented that the APDP provides support for domestic production irrespective of where the products are sold or by whom.

It appears that it is anticipated that the APDP will comply with the requirements of the WTO. The APDP hypothesis for this CSF has therefore been satisfied.

6.4 IN SUMMARY

The conclusions of the present study were reached during both the literature review (refer to Chapter 2) and the analysis of the perceptions by participating stakeholders. Tables 33 and 34 provide a summary of the MIDP and APDP hypotheses and whether or not they have been satisfied.

Table 33: MIDP conclusions

MIDP Hypotheses	Yes	No	Uncertain	Hypothesis satisfied?
1. Has the MIDP created higher-quality motor vehicles?	✓			Yes
2. Has the MIDP created higher-quality components?	✓			Yes
3. Has the MIDP created more affordable motor vehicles?	✓			Yes
4. Has the MIDP created more affordable components?	✓			Yes
5. Has the MIDP created increased exports?	✓			Yes
6. Has the MIDP created decreased imports?		✓		No
7. Has the MIDP created an improved automotive industry trade balance?		✓		No
8. Has the MIDP created sustainable exports?	✓			Yes
9. Has the MIDP created diversified component exports?		✓		No
10. Has the MIDP created an increase in the local production volumes of motor vehicles?	✓			Yes
11. Has the MIDP created an increase in the local production volumes of components?	✓			Yes



MIDP Hypotheses	Yes	No	Uncertain	Hypothesis satisfied?
12. Has the MIDP created an increase in the local content of motor vehicles?		✓		No
13. Has the MIDP created an increase in the local content of components?	✓			Yes
14. Has the MIDP created rationalisation of the number of vehicle models produced locally?	✓			Yes
15. Has the MIDP created an increase in local investment?	✓			Yes
16. Has the MIDP created an increase in local research and development activities?		✓		No
17. Has the MIDP created an increase in local productivity?	✓			Yes
18. Has the MIDP created sustainable employment levels?	✓			Yes
19. Is the MIDP a programme that complies with the requirements of the WTO?		✓		No

Table 34: APDP conclusions*

APDP Hypotheses	Yes	No	Uncertain	Hypothesis satisfied?
1. Will the APDP create higher-quality motor vehicles?	✓			Yes
2. Will the APDP create higher-quality components?	✓			Yes
3. Will the APDP create more affordable motor vehicles?			✓	Uncertain
4. Will the APDP create more affordable components?			✓	Uncertain
5. Will the APDP create increased exports?			✓	Uncertain
6. Will the APDP create decreased imports?			✓	Uncertain
7. Will the APDP create an improved automotive industry trade balance?			✓	Uncertain
8. Will the APDP create sustainable exports?			✓	Uncertain
9. Will the APDP create diversified component exports?			✓	Uncertain
10. Will the APDP create an increase in the local production volumes of motor vehicles?	✓			Yes
11. Will the APDP create an increase in the local production volumes of components?	✓			Yes



APDP Hypotheses	Yes	No	Uncertain	Hypothesis satisfied?
12. Will the APDP create an increase in the local content of motor vehicles?	✓			Yes
13. Will the APDP create an increase in the local content of components?	✓			Yes
14. Will the APDP create rationalisation of the number of vehicle models produced locally?			✓	Uncertain
15. Will the APDP create an increase in local investment?	✓			Yes
16. Will the APDP create an increase in local research and development activities?	✓			Yes
17. Will the APDP create an increase in local productivity?	✓			Yes
18. Will the APDP create sustainable employment levels?	✓			Yes
19. Will the APDP be a programme that complies with the requirements of the WTO?	✓			Yes

*The conclusions are based solely on stakeholders' perceptions and represent anticipated implementation results and not actual results.

Based on the present study, the following thirteen (13) CSFs have been achieved by the MIDP (refer to Table 33):

- Higher-quality motor vehicles;
- Higher-quality components;
- More affordable motor vehicles;
- More affordable components;
- Increased exports;
- Sustainable exports;
- Increase in the local production volumes of motor vehicles;
- Increase in the local production volumes of components;
- Increase in the local content of components;
- Rationalisation of the number of vehicle models produced locally;
- Increase in local investment;
- Increase in local productivity; and

- Sustainable employment levels

Based on the present study, the following six (6) CSFs have not been achieved by the MIDP (refer to Table 33):

- Decreased imports;
- Improved automotive industry trade balance;
- Diversified component exports;
- Increase in the local content of motor vehicles;
- Increase in local research and development activities; and
- Programme that complies with the requirements of the WTO.

Based on the present study, it is anticipated that the APDP will achieve the following eleven (11) CSFs (refer to Table 34):

- Higher-quality motor vehicles;
- Higher-quality components;
- Increase in the local production volumes of motor vehicles;
- Increase in the local production volumes of components;
- Increase in the local content of motor vehicles;
- Increase in the local content of components;
- Increase in local investment;
- Increase in local research and development activities;
- Increase in local productivity;
- Sustainable employment levels; and
- Programme that complies with the requirements of the WTO.

Based on the present study, it is uncertain whether the APDP will achieve the following eight (8) CSFs (refer to Table 34):

- More affordable motor vehicles;

- More affordable components;
- Increased exports;
- Decreased imports;
- Improved automotive industry trade balance;
- Sustainable exports;
- Diversified component exports; and
- Rationalisation of the number of vehicle models produced locally.

In summary, it appears that the automotive industry has improved its performance under the MIDP. Of the formulated CSFs, the MIDP has nominally achieved two thirds of the formulated CSFs, while one third has apparently not been achieved.

Although there is still a level of uncertainty regarding the anticipated implementation results of the APDP, it appears that it is anticipated that the APDP will achieve about half of the formulated CSFs, but it is uncertain whether it will achieve the other half. Participating stakeholders anticipate that the APDP will create an increase in the local content of motor vehicles, and in local research and development activities, as well as complying with the requirements of the WTO. The latter is a critical enabler for a sustainable automotive manufacturing industry due to the certainty required for the regular high levels of investment during model change. There is an anticipation that the APDP will improve on the performance of these CSFs and continue to achieve some one third of those achieved by the MIDP. In particular it is important that the APDP is perceived to support achieving sustained employment levels, given the widely recognised priority of employment amongst South Africa's socio-economic delivery imperatives.

6.5 INDUSTRY REACTION

The impending implementation of the APDP in 2013 has already resulted in major wins for the South African automotive industry:

1. BMW's recent investment of R2.2 milliard in its Rosslyn plant in Pretoria may be a taste of the good things to come for the South African automotive industry under the APDP. This investment will increase BMW's production capacity from 60 000 units annually to 80 000 units annually. This will assist government in achieving its 1.2 million units target, in line with the National Industrial Policy Framework, by 2020 (Cillié, 2009; Creamer, 2008).

The BMW plant in Rosslyn, Pretoria:

- Manufactures 250 vehicles daily;
 - Manufactures 25% of its worldwide production of its 3 Series sedan range;
 - Is the first plant established outside Germany and has been in South Africa for more than 41 years; and
 - Exports 75% of its production.
2. Cape Town-based Optimal energy indicated that they would like to qualify for the APDP and plan to produce approximately 50 000 units of the Joule electric vehicle. The Joule electric vehicle is a home-grown prototype in the front line of the renewable energy movement. The planned production has resulted in investment of approximately R155 million. It is estimated that another R1.5 billion will have to be invested to make the project a reality (Venter, 2009b).
 3. Despite not being entirely satisfied with the proposed level of import tariffs under the APDP, Steve Koch, a previous managing director and president of General Motors African operations and General Motors South Africa, indicated that they remain committed to their South African business operations (South African Press Association, 2008).
 4. Nissan South Africa is in the process of implementing a localisation strategy to facilitate an increase in the local content of vehicles manufactured locally above 60% on average for all their key models (Southafrica.info, 2010).

6.6 IN CONCLUSION

Any industry programme attracts many conflicting views, and many considerations have to be taken into account when judging its implementation results. Programmes like the MIDP and the soon-to-be APDP require courageous steps on the part of both the legislator and the intended beneficiaries. Whether the APDP will indeed be an improvement on the MIDP and whether the automotive industry will be able to survive without any support will become evident in time. “Success is never final and failure never fatal. It’s courage that counts” (Tilton, 2009).

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Appendix A

DEFINITION OF KEY TERMS

The following key terms are relevant for the purposes of this study:

Automotive Industry: All those companies and activities involved in the manufacture of motor vehicles (Encyclopaedia Britannica, 2009).

Balance of trade: This represents the difference between the value of goods imported and exported by a country. Where exports exceed imports the balance can be said to be favourable and *vice versa*. The balance of trade excludes capital transactions, services and shipments of gold (Greenwald, 1973:37).

Component manufacturers: This can be broadly defined as the manufacturers of engines, engine parts and/or bodies (Encyclopaedia Britannica, 2009). These manufacturers supply components mainly to Original Equipment Manufacturers (OEMs) for use in the manufacture of motor vehicles.

Countervailing measures: These are unilateral instruments which may be applied by members of the World Trade Organization (WTO) after criteria as stipulated in the Agreement on Subsidies and Countervailing Measures have been satisfied (WTO, 2008a).

Domestic: A term used to describe transactions concluded within the boundaries of one country (South Africa) (Ammer & Ammer, 1977:125). In general terms it can therefore be defined as the absence of external countries.

Economies of scale: A reduction in the unit cost of a product as a result of large scale production (Ammer & Ammer, 1977:375). Such economies can arise at plant (set of production facilities) or firm level. An increase in the scale of a plant to facilitate economies of scale often results in greater specialisation (Greenwald, 1982:327).

Exports: One country, the exporter, supplies goods to another country, the importer (Greenwald, 1982:355). In other words, the exporter is the supplier of goods to another country with a demand for such goods.

Fiscal policy: Refers to “the use of taxation and government expenditure to regulate the aggregate level of economic activity” (Pearce, 1981:158). Fiscal policy is applied in the achievement of specific macroeconomic objectives (Greenwald, 1982:409).

Foreign exchange rates: These represent the “market quotations of the prices of foreign currencies in terms of domestic currency” (Greenwald, 1982:430). In other words they give an indication of how much an entity or individual from one country will have to pay to obtain the currency of a foreign country. The more expensive it is to buy a foreign country’s currency, the less likely it is that such a purchase will be carried out. Foreign currency is required when an entity or individual wishes to obtain goods or services from a foreign country.

Gross domestic product (GDP): A measure of the production, distribution and use of newly produced goods and services in respect of a certain time period. This measure excludes output produced abroad to which residents are entitled. It is a measure of the economic welfare of a country in terms of its production ability (Greenwald, 1982:465–466).

Imports: One country, the importer, obtains goods from another country, the exporter (Greenwald, 1982:478). The importer is thus the recipient of the goods supplied by the exporter.

Industrial policy: Everything done by a government which affects business activity in the economy, from fiscal to monetary policy. Industrial policy implies (1) a focus on long-term structural economic problems and (2) an emphasis on industries or sectors and their role in energizing the rest of the economy (Congressional Budget Office, 1983:15-19).

Industrial Policy Action Plan (IPAP): This is the plan by which the South African government aims to implement the National Industrial Policy Framework. IPAP provides a list of actions to achieve the objectives of the NIPF (DTI, 2010b:3).

Inflation: “An increase in the general price level owing to increased total spending relative to the supply of goods on the market” (Ammer & Ammer, 1977:205).

Light motor vehicle: All vehicles other than heavy motor vehicles. Specified motor vehicles as defined in paragraph 7 of Schedule 3 of the Customs and Excise Act No. 91 of 1964 includes both light motor vehicles and heavy motor vehicles (South African Revenue Service, 2009a:57-58). To determine the definition of light motor vehicles, the above definition must be read in conjunction with the definition of heavy vehicles as contained in Note 1 to rebate item 317.07 per Schedule 3 of the same Act (South African Revenue Service, 2009a:73). Thus light motor vehicles can be defined as:

“...(iii) motor cars (including station wagons) of heading 87.03;
(iv) motor vehicles for the transport of goods of heading 87.04 of a vehicle mass not exceeding 2 000 kg or a G.V.M. not exceeding 3 500 kg or of a mass not exceeding 1 600 kg or of a G.V.M. not exceeding 3 500 kg per chassis fitted with a cab (excluding motor vehicles of subheading 8704.10, shuttle cars...” (South African Revenue Service, 2009a: 57-58 & 73).

Monetary Policy: The actions of a central bank, currency board or other regulatory committee that determine the size and rate of growth of the money supply, which in turn affects interest rates (Investopedia, 2009). In other words it is “that branch of economic policy which attempts to achieve the broad objects of a policy – stability of employment and prices, economic growth...” (Pearce, 1981).

Multilateral disciplines: The rules stating whether or not a subsidy may be provided by a member of the WTO (WTO, 2008b).

National Association of Automotive Component and Allied Manufacturers (NAACAM): An organisation comprising some 180 component manufacturers which “provides companies with a dynamic forum to formulate policies and take actions that benefit the industry as a whole” (NAACAM, 2009).

National Association of Automobile Manufacturers of South Africa (NAAMSA): The official body representing motor vehicle manufacturers in South Africa. The body provides important information about the automotive industry in Sub-Saharan Africa. It also has a specialist committee that addresses industry issues (NAAMSA, 2009a).

National Industrial Policy Framework (NIPF): This sets out the South African government's broad approach to industrialisation, which was adopted by Cabinet in January 2007 (DTI, 2010b).

Original-equipment manufacturers (OEMs): Manufacturers that “incorporate the purchased goods into their final products, which are then sold to final consumers” (Encyclopaedia Britannica, 2009). In the context of the automotive industry OEMs are usually understood to be manufacturers that purchase automotive components from component manufacturers to facilitate the manufacture of automobiles or motor vehicles.

Rebate: The partial refund of a payment facilitated by a deduction from the full amount previously paid / payable (Ammer & Ammer, 1977:354).

Subsidy: Represents government policies that benefit particular sectors of the economy (Koplow, 2008). Subsidies do not necessarily consist of cash but can convey other non-monetary benefits. Can be further classified as prohibited or actionable (WTO, 2008b).

Supply: In an economic context this is the quantitative availability of goods or services (Greenwald, 1982:907).

Tariffs: Taxes imposed by a national government on the importation of goods into the specific country (Ammer & Ammer, 1977:414; Pearce, 1981:418). Tariffs can be specific or *ad valorem*. Tariffs are specific when the amount is determined with reference to the number of units. *Ad valorem* tariffs are determined by applying a percentage to the value of the goods (Pearce, 1981:418). Tariffs are also known as import tariffs, duty or customs duty, and are implemented to increase governmental revenue (via import tariff revenues) or to discourage imports (Ammer & Ammer, 1977:414).

Appendix B

Dear Sir / Madam



Research performed in the past indicated that stakeholders are accurate in estimating the expected implementation results of an industry specific programme.

I am a post graduate student at the Department of Taxation of the University of Pretoria. I am conducting a web-link survey to obtain input from automotive industry stakeholders regarding the performance of the Motor Industry Development Programme (MIDP) and the anticipated performance of the Automotive Production Development Programme (APDP). *This survey is supported by the Automotive Industry Development Centre (AIDC).*

The benefits of participating in the survey are:

1. The results of the research will provide an indication to the Department of Trade and Industry regarding whether the APDP is anticipated to address the shortcomings of the MIDP;
2. The results of the research will provide an indication to the Department of Trade and Industry regarding whether the APDP is anticipated to successfully meet its objectives; and
3. The study will formalise the performance of the MIDP with reference to factual data as well as the perception of stakeholders.

Please note that should you not be in a position to participate in the study, please forward this electronic mail to an individual that will be able to assist.

To complete the survey will require only 10 minutes of your time. Please answer all the questions. It would be greatly appreciated if you can please assist me by completing and submitting the survey by no later than **31 March 2010**.

To participate, please follow the below steps:

1. To access the web-link survey, please click on the web-link *Survey: The review of the MIDP* below these instructions (indicated in blue). To access the link the e-mail must not be opened in edit mode. Should you experience any technical difficulties regarding accessing the link please do not hesitate to contact me (contact details at the end of this e-mail).
2. Please read the informed consent form on the first page of the survey and indicate acceptance by clicking either yes or no.
3. Where data regarding your entity is required, exact figures are not required - an estimation will be sufficient.
4. After answering all the questions on a specific page, please click on *Proceed* to commence to the next page.
5. To select a specific answer, please click on one of the radio buttons or where a drop-down menu is utilised, please click on the arrow next to the answer and click on one of the options displayed.
6. Where additional detail is required, please click within the text box provided (after clicking on the radio button with the option *Other*) and type in the relevant detail.

7. To submit the completed survey, please click on *Done*.

[Survey: The review of the MIDP](#)

Should you have any queries in this regard, or should you wish to receive the research results, please do not hesitate to contact myself via my research assistant, Antoinette Bronkhorst (abronkhorst@aidc.co.za) or either one of my study leaders Professor Madeleine Stiglingh (Madeleine.Stiglingh@up.ac.za) or Professor Jasper Steyn (jasper.steyn@up.ac.za).

Kind Regards

Evádne Bronkhorst

Appendix C



The Perception of Stakeholders Regarding the Review of the Motor

1. MIDP and APDP Registration status

Informed consent for participation in an academic research study

THE PERCEPTION OF STAKEHOLDERS REGARDING THE REVIEW OF THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

Dear Respondent

You are invited to participate in an academic research study conducted by Evádne Bronkhorst, a Masters student from the Department of Taxation at the University of Pretoria. This survey is supported by the Automotive Industry Development Centre.

The purpose of the study is to determine whether automotive industry stakeholders believe that the Automotive Production Development Programme (APDP) will result in improved performance by the automotive industry when compared to the performance under the Motor Industry Development Programme (MIDP).

Please note the following:

1. This study involves an anonymous survey. Your name will not appear in the dissertation and the answers you give will be treated as strictly confidential.
2. Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any adverse consequences.
3. Should you not be in a position to participate, kindly forward the survey to an individual who is able to assist with the study.
4. Please answer the questions in the survey as completely and honestly as possible. This should not take more than 10 minutes of your time.
5. The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request. The collected data will not be utilised for purposes other than this proposed study without your prior consent.

Please contact my supervisors, Professor Jasper Steyn (jasper.steyn@up.ac.za) and Professor Madeleine Stiglingh (madeleine.stiglingh@up.ac.za) if you have any questions or comments regarding the study.

1. I have read the informed consent letter above and:

(1) Understand the information in the letter; and

(2) Give consent to participate in the study on a voluntary basis.

Yes

No



The Perception of Stakeholders Regarding the Review of the Motor

2. Demographic questions #1

Demographic of respondents

2. Please indicate the respondent type:

- (1) Original equipment manufacturer (OEM)
- (2) Component manufacturer supplying to OEM
- (3) Component manufacturer involved in direct exports
- (4) Both (2) and (3) above
- (5) Other (please specify)

3. Please indicate the estimated number of employees of your entity:

- (1) 1 - 9
- (2) 10 - 99
- (3) 100 - 999
- (4) 1 000 and more

4. Please indicate the estimated value of sales of your entity:

- (1) Less than R10 million
- (2) R10 million and above but less than R100 million
- (3) R100 million and above but less than R1 000 million
- (4) R1 000 million and above
- (5) Other (please specify)



The Perception of Stakeholders Regarding the Review of the Motor

5. Please indicate the estimated percentage of sales of your entity which is attributable to exports:

- (1) None
- (2) Less than 25%
- (3) 25% and above but less than 50%
- (4) 50% and above but less than 75%
- (5) 75% and above but less than 100%
- (6) Other (please specify)

6. Is your entity registered under the MIDP?

- Yes No Do not want to disclose registration status

7. Will your entity be eligible to register under the APDP?

- Yes No Uncertain

8. How does your entity benefit from the MIDP? Please select all relevant options.

- (1) Increased volumes
- (2) Increased quality
- (3) Increased profitability
- (4) Uncertain
- (4) Other (please specify)

9. Please indicate the structure of your entity:

- (1) Single entity
- (2) Entity forming part of a group
- (3) Other (please specify)



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3. Demographic information #2

Group structure

10. Please indicate the position of your entity in the group structure:

- (1) Subsidiary
- (2) Holding company
- (3) Other (please specify)

11. In which country is your entity's holding / controlling entity located?



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4. The MIDP vs. the APDP

12. (A) Please indicate whether you believe that the existing MIDP has facilitated the achievement of the critical success factors below, by indicating either of the following: Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.

(B) Please indicate whether you believe that the APDP will facilitate the achievement of the critical success factors below, by indicating either of the following: Strongly Disagree, Disagree, Agree, Strongly Agree or Uncertain.

Please click on the drop-down arrow to display the available options and then select the relevant answer. Please answer the questions in relation to the automotive industry as a whole and not in relation to your own entity.

	(A) MIDP	(B) APDP
(1) Higher quality motor vehicles	<input type="text"/>	<input type="text"/>
(2) Higher quality components	<input type="text"/>	<input type="text"/>
(3) More affordable motor vehicles	<input type="text"/>	<input type="text"/>
(4) More affordable components	<input type="text"/>	<input type="text"/>
(5) Increased exports	<input type="text"/>	<input type="text"/>
(6) Decreased imports	<input type="text"/>	<input type="text"/>
(7) Improved automotive industry trade balance	<input type="text"/>	<input type="text"/>
(8) Creation of sustainable exports	<input type="text"/>	<input type="text"/>
(9) Creation of diversified component exports	<input type="text"/>	<input type="text"/>
(10) Increase in the local production volumes of motor vehicles	<input type="text"/>	<input type="text"/>
(11) Increase in the local production volumes of components	<input type="text"/>	<input type="text"/>
(12) Increase in local content of motor vehicles	<input type="text"/>	<input type="text"/>



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(13) Increase in local content of components	<input type="text"/>	<input type="text"/>
(14) Rationalisation of the number of vehicle models produced locally	<input type="text"/>	<input type="text"/>
(15) Increase in local investment	<input type="text"/>	<input type="text"/>
(16) Increase in local research and development activities	<input type="text"/>	<input type="text"/>
(17) Increase in local productivity	<input type="text"/>	<input type="text"/>
(18) Sustainable employment levels	<input type="text"/>	<input type="text"/>
(19) Programme complies with the requirements of the World Trade Organization	<input type="text"/>	<input type="text"/>



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5. Additional information

Open question

13. Please indicate whether you have any additional comments regarding the MIDP or the APDP:



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6. Thank You

Thank you for your participation in this survey - it is much appreciated!

Appendix D



Dear Evádne,

The statement wrt the AIDC is fine, you can proceed as planned.

With best regards,
Barlow



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Your partner in becoming globally competitive

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From: Evadne.Bronkhorst@za.ey.com
To: BManilal@aidc.co.za
Date: 2010/03/22 03:31 PM
Subject: Fw: The review of the Motor Industry Development Programme

Hi Barlow

As promised, herewith the e-mail I am to send to relevant respondents for your authorisation. I have indicated the part relating to the AIDC in bold to assist you in your review. In addition, I have also utilised the logo of the AIDC (see below). Please indicate whether this is acceptable.

Again, a word of thanks for everything you have done so far!

Kind Regards

Evádne Bronkhorst