

THE CHALLENGES FACED BY ENTREPRENEURS WITHIN THE AUTOMOTIVE SECTOR IN GAUTENG

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Abstract

Gauteng being South Africa's economic power house, leading the way in investment manufacturing, technology, research and innovation, faces many challenges. As South Africa's leading manufacturing sector, the increasing importance of the automotive sector is reflected in its, production, forging investments and contribution to the province. The auto industry is subject to a range of factors that are increasing complexity and influencing the economic options available to the sector. The majority of these factors interact with one another and have strong interdependencies. However, some of these factors are market-induced and, consequently, cannot be influenced directly by the sector itself.

Key Words: Challenges, Entrepreneurs, Automotive, Manufacturing, Technology, Innovation, Economic, Production, Investments

Introduction

The advancement of entrepreneurship and small business remains a major priority of the government of Gauteng and South Africa at large. Entrepreneurs face many challenges in their day to day running of their businesses. The commitment of government is to ensure that small businesses progressively increase their contribution growth and performance of the within the economy. The critical areas such are job creation, equity and access to markets, particularly the Automotive Sector, the largest contributor to manufacturing in South Africa. Since 1994 - with the advent of a new democratic era - the government has taken actions to ensure that small business development becomes a key policy focus. A significant milestone was achieved when government released its White Paper on national strategy for the development and promotion of small enterprises in South Africa, the first time a comprehensive policies and strategies on small enterprises development was formulated in the country. (Dti,)

The White Paper (1995) articulated the Government's rationale for small business promotion as follows:

With masses of South Africans unemployed and underemployed, the Government has no option but to give its full attention to the essential

task of job creation, and to generating sustainable and equitable growth. Small, medium and micro-enterprises (SMMEs) represent an important vehicle to address the challenges of the job creation, economic growth and equity in our country. Throughout the world, one finds entrepreneurs playing a critical role in absorbing labour, penetrating new markets and expanding economies in creative and innovative ways. We are of the view that with the appropriate enabling environment –entrepreneurs in this country can follow these examples and make an indelible mark on this economy. The encouragement of entrepreneurs must be seen as part of a cohesive strategy to take this economy onto a higher road – one in which our economy can be diversified, productivity is enhanced, investment stimulated, and entrepreneurship blossoming, creating an enabling environment for small enterprises.

The White Paper recognised some constraints facing small businesses. These relate to the legal and regulatory environment, access to markets, access to finance and affordable business premises.

The acquisition of skills and managerial expertise, access to appropriate technology, the tax burden, and access to quality business infrastructure in poor areas or poverty nodes. Various key players in the South African economy share the importance of investing in stimulating small business. The growing and widespread commitment to fostering entrepreneurship and promoting small enterprises goes beyond the Government and its institutions. The automotive industry is facing new and unyielding challenges. Globalisation, Economic, Political; technological and increasing competition are changing the face of the industry as

Aim of the study

The aim of this study is to investigate the challenges faced by the entrepreneurs within the automotive sector in Gauteng and to make recommendations to NAACAM, NAAMSA and Gauteng Provincial Government.

Objective of the study

- To critically analyse the issues and barriers entrepreneurs are faced with by compiling a structured questionnaire.
- To examine the skills shortages and training available within the sector in Gauteng,
- To assess the gaps experienced by entrepreneurs and the impact on competitive advantage within the automotive sector in Gauteng, and
- To evaluate the barriers hindering entry into the supply chain that entrepreneurs in sector are faced with.

LITERATURE REVIEW

Introduction

The South African Motor Industry is one of the most significant contributors to the South African economy. The industry contributed 7.2% to the country's gross domestic product (GDP) and created 112 505 jobs in 2014 (AIEC, 2014). The South African automotive industry is one of the largest contributors to the country's economy. It is evident from the industry's performance during 2012 which saw its exports increasing by R4.7 billion, or 5.7 %, to R86.9 billion from R82.2 billion in 2011. The South African automotive industry was integrated into the global market in 1995, with eight OEMs producing vehicles in Gauteng. In 2015, the Gauteng OEMs are namely: BMW, Ford, Nissan and Renault, TATA and Iveco. Hyundai recently established an assembly plant in the Province as well.

The statistics quoted in this document were relevant at the time of compilation.

South African automotive industry’s global competitiveness

The South African automotive industry has made considerable efforts to remain competitive and manage the cost pressures resulting from increased labour, energy and logistics costs. These increases are not a unique to the South African economy; many developing economies face similar conditions. Despite these challenges, the industry continues to compete at a global level as the country attracts most of the world biggest automotive role players to invest locally. South Africa is home to of the world largest manufacturers either by Alliance or partnerships.

Table 1: OICA Top 20 motor vehicle producers in the world 2012

World Motor Vehicle Production Ranking 2012		
Rank	Manufacturer	Total
1	Toyota	10 104 424
2	General Motors	9 285 425
3	Volkswagen	9 254 742
4	Hyundai	7 126 413
5	Ford	5 595 483
6	Nissan	4 889 379
7	Honda	4 110 857
8	P.S.A	2 911 764
9	Suzuki	2 893 602
10	Renault	2 676 226
11	Chrysler	2 371 427
12	Daimler AG	2 195 152
13	Fiat	2 127 295
14	BMW	2 065 477
15	SAIC	1 783 548
16	Tata	1 241 239
17	Mazda	1 189 283
18	Dongfeng	1 137 950
19	Mitsubishi	1 109 731
20	Changan	1 063 721

(Source: OICA statistics website, accessed on 01 July 2015)

Automotive industry interregional trade standings

The contribution of the South African automotive industry to the regional trade, in general, is notable, and the bilateral agreements and trade relationships in place have improved the motor industry’s interregional trade. An important testimony to the increasing interregional trade activities is the Maputo corridor. Flagship programme has had a significant impact on South Africa’s and Mozambique’s economic growth, with the use of the Maputo Port Development Company (MPDC) facilities by local OEMs for export activities i.e. Maputo Corridor.

Table 2: World vehicle production by country - African perspective

Vehicle Production in Africa 2011/2012 (The survey excluded Q4 of 2012)	
Country	Vehicles Produced
South Africa	532 545
Egypt	81 731
Morocco	59 477
Kenya	2 945
Tunisia	1 860
Zimbabwe	829
Sudan	0
Nigeria	0
Libya	0

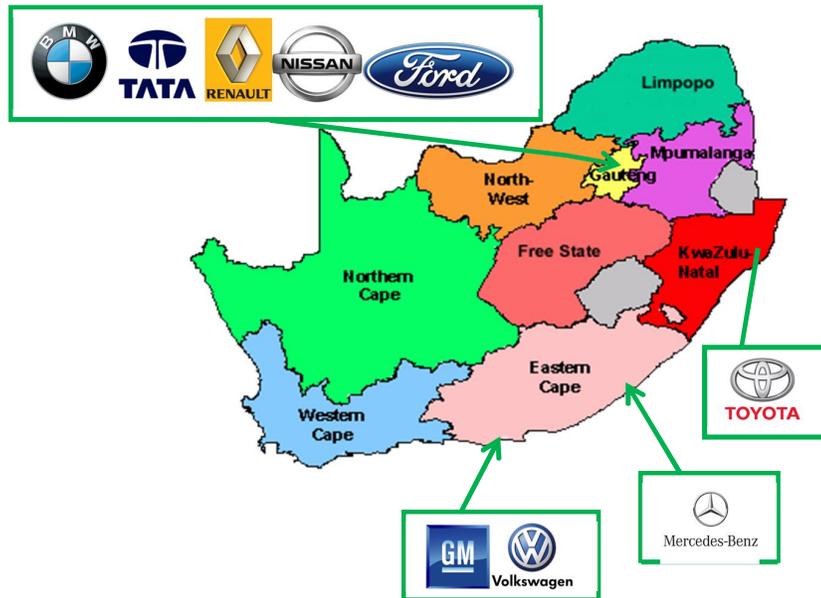
(Source: OICA statistics website, accessed on 01 July 2015)

Table 2 shows African motor vehicle production per country. Africa has 54 fully recognised sovereign states; automotive related activities are located in South Africa, Morocco, Egypt, Kenya, Tunisia and Zimbabwe. According to OICA records, other automotive industry active African countries such as Botswana, Libya, Nigeria and Sudan have reported zero production figures in recent years.

Characteristics of the Auto Sector

One of the key aspects of the sector is the level of global integration of the majority of its subsectors. Prior to 1994, the local automotive industry was mostly domestically owned and focused almost exclusively on the Southern African market. Following the re-integration of SA into the global economy, multinational motor manufacturers re-invested in domestic assembly plants and existing or new Tier 1 suppliers. The result was that both the structure and the ownership profile of the sector changed entirely within a few years. Operating as part of the global automotive industry means that local plants compete with international sister plants for new model production. At the same time, most decisions regarding production volumes, global supply and supplier contracts are made at international head-office level. The SA automotive manufacturing sector contributed 0.52 % of global car production and 1.09 % of world commercial vehicle production in 2011/12. The sector is nevertheless totally integrated into the global automotive production value chain, with annually increasing levels of both automotive and component exports and imports. (Automotive Export Manual 2014 - AIEC)

Geographic Location



Manufacturing firms in the sector are clustered into four mainly urban regions, which limit the extent to which the industry can make a direct contribution to government’s rural development objective. Gauteng (including the Brits area of the North West province) has the largest concentration of auto companies. Three of the OEMs, more than half of the automotive components manufacturing firms, and almost 80 % of enterprises in the metals sector are situated in this region. The distribution of the motor retail and servicing subsector is reflected in the provincial allocation of the national population of passenger vehicles, motorcycles and commercial vehicles. This suggests that the sector are clustered in Gauteng (with 42.1 % of passenger vehicles, 40.2 % of motorcycles and 32.7 % of commercial vehicles in June 2012), but that the Western Cape and KwaZulu-Natal also have a significant share of the sector. Across all provinces, the sector is likely to be concentrated in the urban areas. (Automotive Export Manual 2015-AIEC).

Employment levels

The automotive industry continues to play a critical role in the job market, with employment levels increasing on a quarterly basis. As at December 2013, the industry was responsible nationally for 30 344 direct jobs at OEM level and 51 894 direct jobs in component manufacturers. This recent growth in employment within the sector comes as the unemployment rate in South Africa has fallen to 24.10 % in 2014.

Table 3: SA Quarterly reviews and report 2014

National Employment Levels				
Naamsa Members	Naacam Members	Tyre Manufacturers Members	Catalytic Converters Members	Non-affiliated Automotive Members
10 344	11 894	1 450	1 015	12 000

(Source: Naamsa, 2014)

Employment levels remain vulnerable to decisions made by the global holding companies, with decisions by the industry principals creating fluctuations in demand for and supply of automotive industry related products. These fluctuations have a further impact down the supply chain as components suppliers have to streamline their production capacity and headcount to ensure efficiency within their operations.

South African automotive industry’s contribution to GDP

In South Africa, the auto sector is the backbone of the nation-wide industrial base. It Accounts for 7.2 % of GDP, 30.2 % of manufacturing output and 11.7 % of all South African exports. The industry demonstrates what can be accomplished when the constructive collaboration between stakeholders takes place. (AIEC, 2015). The automotive sector remains an essential focal point in South Africa as one of the most critical areas that drive sustainability, job creation, competitiveness and all-inclusive growth. South Africa is seen as providing the largest automotive market and most significant automotive centre and supply chain cluster in Africa.

Manufacturing is vital, for sustainable growth and job creation as each task in manufacturing supports a several of jobs elsewhere in the economy. The main sources of increasing employment in the vehicle and automotive component sector in South Africa is via exports. Growing demand in the local market, alone will not support the growth required in the manufacturing sector to promote significant growth in employment. According to the databases collected prior to the survey, there are just under 100 automotive manufacturing companies based in the province. It’s estimated that over 70% of the province’s automotive sector manufacturing companies are located within the Gauteng Province, where they contribute to the local economy and the city’s GDP-R. (AIDC, 2014)

Table 4: Key Macro Indicators – 2014: South Africa

Key Macro Indicators – 2014: South Africa	
Indicator	Performance
South Africa’s Gross Domestic Product (GDP)	R796,5 billion
Broader automotive industry contribution to GDP	7,2 %
Vehicle and component production as a % of South Africa’s manufacturing output	30,2 %
Average monthly employment by vehicle manufacturers	29 715
Automotive component sector employment	82 790
Capital expenditure – vehicle manufacturers	R6,92 billion
Capital expenditure – component sector	R2,7 billion
Total South African new vehicle sales	644 504
Total South African new vehicle production	566 083
South Africa’s production as a % of Africa’s vehicle production	68 %
South Africa’s global vehicle production ranking	24 th
South Africa’s global vehicle production market share	0,63 %
Total Automotive export earnings	R115,7 billion
Automotive export value as a % of total South African export value	11,7 %
Number of export destinations	148
Number of export destinations with export value more than doubling	25

year-on-year	
Top automotive company export destination in rand value terms	Germany
Total South African vehicle exports	276 873
Total value of vehicle exports	R70 billion
Total vehicle export destination in volume terms	UK
Total value of automotive component exports	R45,7 billion
Top automotive export category in rand value terms	Catalytic Converters
Top automotive trading partner in rand value terms	Germany
Top automotive trading region in rand value terms	EU
Top country of origin for total automotive imports in rand value terms	Germany
Top country of origin for vehicle imports	India

(Source: AIEC, Econometrix, NAACAM, NAAMSA/Lightstone Auto, SARS)

Table 4 indicates the macroeconomic contributions of the automotive industry. The automotive industry's main foreign trading partners in 2014 were China, USA, Japan, Germany and India. The introduction of the APDP has cemented the industry's vision of increasing the number of export destinations, thereby increasing total South African export value from the current R717, 9 billion.

Total South African vehicle production 566 083 units, South Africa's global vehicle production ranking 24th in the World. The APDP programme will result in OEMs producing double the current number of units per year, thus increasing economies of scale.

Key regional factors

The automotive sector's activities are fairly well distributed across Gauteng, Eastern Cape and KwaZulu-Natal as each location offers its distinct opportunities. The location of the OEMs also draws in some suppliers, as indicated by this study. The 78% of the City of Gauteng automotive activities concentration in Rosslyn is a typical example of the OEM location effect on the supporting industry. Gauteng is the smallest of the country's nine provinces but is the country's financial and industrial economic centre. The region produces a third of national GDP, generates the highest per capita income, and accounts for 40% of South Africa's manufacturing output, construction activity and financial services. The province remains the natural destination for international investors wishing to establish a springboard into Africa. The Automotive Industry Development Centre (AIDC), a subsidiary of the Department of Economic Development within the Province, provides support to the auto industry.

Automotive Supplier Park (ASP), managed by the AIDC, is a Gauteng Provincial Government initiative aimed stimulating economic growth and job creation in the automotive industry through large-scale investment in strategic economic infrastructure. ASP is located in Rosslyn, north of Tshwane, a region boasting the highest concentration of vehicle manufacturers in the country.

Component manufacturers' provincial comparison

Figure 1: Percentage of Automotive component companies

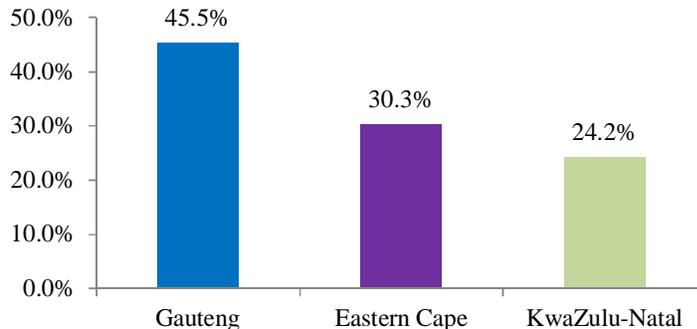


Figure 1: illustrates the percentage of automotive component manufacturers currently located and operating within the Eastern Cape, Gauteng and KwaZulu-Natal province.

Gauteng hosts the largest number of automotive parts manufacturers, at 45.5 % (150 suppliers), compared to 30 % in the Eastern Cape and 24 per cent in the KwaZulu-Natal province.

According to the AIEC, there is a total of 330 components manufacturers in South Africa; these are mainly the tier one supplier who holds purchase orders from the OEM.

Each location offers distinct opportunities and different challenges, and this study explores some of these, as highlighted by the industry. Figure 1 indicates the key contribution figures for 2012 per region, showing percentages of the national total.

Automotive products manufactured within the Gauteng Region

South Africa produces a full range of vehicles including passenger cars, light commercial vehicles, medium commercial vehicles, heavy commercial vehicles, extra heavy commercial vehicles and buses. (Automotive Export Manual 2015 - AIEC)

Total domestic vehicle production is expected to increase to around 627 500 units in 2015 compared to the 566 083 units in 2014, an improvement of 10.8 %. South Africa exports the major portion of its vehicle production. The performance of exports would remain a function of the performance and direction of global markets. (Automotive Export Manual 2015 - AIEC 2015)

Signs are emerging of an improvement in the global economy. Recovering sales in the US and the EU and continued growth in Asia - particularly China - represent the main drivers behind global sales. Demand for light commercial vehicles in African markets was also expected to show above-average growth.

The Automotive Components Sector

Automotive component exports, including sales to the BLNS (Botswana, Lesotho, Namibia and Swaziland) countries, increased by 8.3 % to R45.7 billion in 2014, from R42.2 billion

in 2013.

Catalytic converters maintained their dominant export position under the APDP in 2014 as the focus of exporters tend to be on high value domestically benefited, logistics-friendly automotive components. Contributing factors that supported automotive component exports in 2014 included a weakening rand exchange rate, year-on-year vehicle production gains in the industry's top export destinations, the domestic component suppliers' production flexibility advantages as well as South Africa's trade arrangements with the EU, SADC and the US. The integration of the South African automotive industry into the global automotive environment has increased its export expansion as well as its degree to improve competitiveness. In competing with world best prices, the automotive component suppliers' strategies depend on aspects such as, specific company's international links, technology and licenses or equity, the type of product, position in the aftermarket, volume requirements and the dependence on OEMs.

Increase automotive component production benefits will relate to foreign exchange savings, the introduction of new technologies to South Africa and the creation of new job opportunities, for 2014, the turnover of the entire component manufacturing sector in South Africa was estimated at R 78.4 billion. (AIEC 2015)

Local content

The requirements for the successful realization of the automotive industry's 2020 vision and to ensure a sustainable motor sector in South Africa include:

- A globally competitive local supplier base that sources materials from locally produced second and third tier suppliers and local resources,
- A local steel industry that produces international quality steel at competitive prices,
- A robust, well thought-out and competitive logistics network that includes access via multiple ports and incorporates sea, rail and road freight,
- Top quality and productive ports which operate at high levels of efficiency at internationally competitive prices,
- Maintenance and enhancements of trade agreements,
- On-going support in terms of the APDP pre- and post-2020,
- Cohesive government planning that incorporates all aspects of the industry including duties and rebates, exchange rate volatility, environmental taxation, fuel legislation and standards, vehicle benefits taxation, transformation policy and industrial policy,
- Development of core competencies and education at all levels, and
- A social compact/accord between the industry, employers and workforce that recognises the long-term success of the industry overall is more important than its individual parts. (AIEC 2014)

The Dti's latest Industrial Policy Action Plan (IPAP) places greater emphasis than was the case in the previous five versions on raising the country's export competitiveness as part of a "Smart Re-industrialization" strategy.

The latest iteration, which will cover the period 2014 to 2017, will place greater emphasis on trade competitiveness by directing incentives to recipients who demonstrate the potential to become active exporters. IPAP outlines the interventions that industries in South Africa need to implement to generate a structurally new path of industrialization for the country.

It sets out transversal and sector-specific programs and action plans to retain, grow and diversify South Africa's industrial base. It also aims to bring structural change in the economy by focusing on value-adding activity in the production sectors, particularly labor-intensive and export-oriented sectors, led by manufacturing. The Dti remains convinced that efforts to grow production in South Africa remain fundamental to placing the economy on a new path of sustainable growth. Growth translates into employment opportunities and ultimately economic development. IPAP continues to champion sectors in which South Africa has attained global success, such as the automotive sector.

The South African automotive industry has been and will remain a vital contributing element to the success of the national economy and the sustainable growth of the country at large. (Dti, 2014). Although Gauteng has the highest number with five passenger vehicles OEMs located within the province, the annual production volume average is 33.5 % (217 750) vehicles produced per annum, this is lower compared to 40 % (260 000) produced within the Nelson Mandela Bay and 26.5 % (172 250) produced within eThekweni metropolitan municipality.

(AIDC/COT Automotive Profile 2014)

The Gauteng-based OEMs were also affected by the global crises that saw vehicle production decline worldwide, this saw the annual production within Tshwane dropping to the record low to 108 886 vehicles in 2009 and the country dropping from 548 332 in 2006 to 363 253 in 2009. The Gauteng-based OEMs, however, have grown their output volumes since 2005 from the annual production of 138 833 vehicles produced to an estimated 165 077 vehicles in 2013.

Government Incentives- Auto Sector

The economic impact of the automotive industry extends well beyond vehicle and automotive component manufacturing, exporting and retailing into financing, insurance, services, general retail and wholesale as well as the public sector. The auto sector contributes significant revenues from vehicle sales, usage-related levies, personal income taxes/fringe benefit taxes, and business taxes. (Automotive Export Manual 2015 - AIEC 2015). The production and sales of new and used cars, parts and services deliver excise, sales, value-added and local taxes as well as import duties. The automotive industry's performance is dependent on an intelligent partnership between vehicle manufacturers, as the key drivers of the supply chain, and government.

However, the emerging issue is supply chain competing against supply chain, not only on end products. Transferring costs upstream or downstream does not make companies more competitive as all costs filter down to the final marketplace in the price paid by the end user. In every country where OEMs are based, they are strong when their supplier base is strong and competitive. (Dti, 2014)

Increasing Localisation

There is an OEM-led strategy for further localisation of technologically advanced suppliers of identified products in five key sub-sectors such as electronics, body parts, interiors, exteriors, chassis and drive-train. The economic rationale of the intervention will involve the identification of opportunities of joint sourcing opportunities across OEMs to broaden, deepen and raise economies of scale.

Skills Development Institutions

Changes in technology and the increasingly technical nature of the automotive industry are causing the automotive industry to hire employees with specific knowledge, skills and expertise.

What makes Gauteng workforce attractive to the industry are the automotive-industry-specific programmes and qualifications. These are being offered at 11 technical and vocational education and training (TVET), three universities, various industry lead training (e.g. Gauteng Automotive Learning Centre) and other community colleges around the municipality. (MerSeta Sector Skills Plan, 2012)

Employment within the Manufacturing Sector

According to Stats SA quarterly labour force survey (QLFS) for the first quarter of 2013, a total of 1.753 million people were employed in the manufacturing sector. The manufacturing sector is the fourth largest employer nationally. The employment figures from South Africa's manufacturing sector have been declining over the 2000-2011 period and this trend is similar to other advanced economies. In advanced economies this decline in manufacturing's share of employment is due to on-going productivity improvements, continued growth of services as a share of the economy and the force of global competition, which pushes advanced economies to specialize in more high-skill activities.

As the commercial hub of the country, Gauteng also has the largest share of national employment at 31% followed by KZN (19%) and Western Cape (13%). North West has 5% of South Africa's workforce and in absolute figures this was 730 000 employees in the first quarter of 2013.

Figure 2: merest Sector Classification

merSETA						SECTORS / INDUSTRIES
SERVICES		MANUFACTURING				
OTHER	RETAIL	AUTOMOTIVE	METALS	PLASTICS	OTHER	
		Automotive Assembly	Capital Equipment	Polymer Producer		SUBSECTORS
		New Tyre	Transport Equipment	Plastics Convertors		
	Motor Retail Motor Repair	Components	Metal Fabrication	Plastic Fabrication		
			Other	Other		
Colour Key	merSETA Chambers					
	Metals Chamber					
	Plastics Chamber					
	Auto Chamber					
	New Tyre Chamber					
	Motor Chamber					

(Source: merSETA Sector Skills Plan 2013-2017)

Companies are grouped into five chambers. Figure 2 above is a conceptual map of the sub-sectors and their relation to merSETA chambers. All chambers, with the exception of the Auto Chamber, contain a cross section both large and small firms. The automotive sector includes

companies linked to each other through the automotive production- and distribution value chain.

The metals, plastics and rubber products industries provide critical inputs into the automotive components manufacturing and vehicle assembly levels of the value chain. Also included in the automotive sector are the downstream activities of vehicle retail, distribution and servicing, which fall outside of the manufacturing sector.

The New Tyre Chamber consists only of the small group of companies manufacturing new tyres for OEMs and aftermarket supply. The Motor Chamber accommodates the remainder of the firms involved in the automotive sector: components manufacturers, vehicle retailers and distributors, as well as those companies involved in vehicle servicing. (MerSETA 2013)

National Infrastructure Plan

The Government adopted a National Infrastructure Plan (NIP) in 2012, which is aimed at transforming the economic landscape, creating significant numbers of new jobs, and strengthen the delivery of basic services in South Africa. The plan also supports the integration of African economies.

The costs of the 18 strategic projects identified are estimated at R4-trillion over the next 15 years. The government pledged to invest R827 billion in building new and upgrading existing infrastructures over the three years from 2013/14 financial year. Some of this investment is earmarked for the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams with the ultimate aim of contributing to faster economic growth.

To coordinate, integrate and accelerate the implementation of this massive infrastructure development drive, Cabinet established the Presidential Infrastructure Coordinating Committee (PICC). The PICC has already identified, developed and approved strategic integrated projects (SIPS), which covering 150 social and economic infrastructure across all nine provinces.

Each SIP comprises a large number of specific infrastructure components and programmes.

Infrastructure is critical to:

- Promote balanced economic development,
- Unlock economic opportunities,
- Address socio-economic needs, and to
- Promote job creation.

(Presidential Infrastructure Coordinating Committee)

State of the Transport System

An extensive amount of transport planning had been done over the past decade; in all three spheres of government (as well as government agencies and entities) which has and will in future impact on the Gauteng Global City Region and its transportation system.

The planning is unpacked, summarised and assessed with respect to the various sub-networks (i.e. roads, public transport, rail, freight, air and Non-motorised Transport (NMT)). The assessment of the “State of Planning”, among other things focussed on:

- Level of integration and coordination between plans;

- Gaps, overlaps and inconsistencies between plans; and
- Key developments and trends are coming to the fore. In addition, also an assessment of the existing transport system in Gauteng is included, considering the current transport realities, problems and issues.

These were from:

- Literature;
- Plans assessed; and
- Public events - the current realities discussion covers all the respective sub-components of the ITMP25. From these key short-term initiatives, projects and programmes are identified, which may be pursued and implemented to “unlock” bottlenecks and alleviate current inefficiencies in the transport system.

Freight Logistics Transport

The flow of freight can be described as flowing from Gauteng to ports, flowing from ports to Gauteng and freight flowing from origin and destination via Gauteng. The bulk of freight is currently on road and has a direct impact on congestion levels experienced during peak hours, as well as the rapid deterioration of the road network.

An assessment of freight planning done by Transnet and other entities, as well as projections of freight volumes, clearly shows that the multiplication effect and the resulting increases in surface freight, as it is expected to double more than by 2050. Based on these projections it also becomes important to develop a strategy to accommodate freight in and around Gauteng in future, which should among other things include:

Develop intermodal facilities with supporting services on the periphery of Gauteng to:

- Establish freight roads around the CBD;
- Identify roads to link the intermodal facilities;
- Develop sufficient road capacity for the distribution of freight to and from the intermodal facilities;
- Establish rail and public transport capacity to support the intermodal facilities; and
- Develop sufficient road capacity for the distribution of fuel and liquids from the tank farms (increase in pipeline capacity) and planned tank farms.

(Transport World Africa Report 2014)

Supply Chain in South Africa

South African supply chains have moved beyond survival mode, where costs, inventories and lead times have been minimized within individual supply chain functions. End-to-end integration of supply chain functions is the next significant shift required in South Africa to make business more customer-centric and competitive.

Supply chain challenges in the Automotive Industry

The automotive industry is critical to the South African economy yet its supply chain faces Enormous challenges. OEMs are scrambling to slash production and reduce manufacturing costs. They are required to enhance the quality, improving styling, increase organisational efficiencies and drive innovative features into their products to attract customers and expand markets.

OEMs are putting pressure on their tiered suppliers to reduce costs, increase output and quality. These challenges imply that automotive manufacturers need to be flexible and responsive to customer demand to succeed.

Under these conditions, suppliers are unable to sense customer orders and manufacture solely on schedules with 12-16 weeks of lead time. Constrained, inflexible production and assembly capacities and long delivery lead times also contribute to high dealer inventory levels in the form of safety stock. Another supply chain issue that affects the automotive industry is a lack of collaboration in product development. Communication channels between OEMs and other supply chain partners remain manual in many cases. Small enterprises are unable to afford the investment in electronic data interchange technology that is used between OEMs and their larger suppliers. Logistics operations in the automotive supply chain are complex and represent a major expense and opportunity for improvement.

The lack of communication and co-ordination of inbound and outbound logistics operations often prevents automakers from optimizing their supply chains, reducing inventories and accurately forecasting and responding to customer demands. (Journal of Transport and Supply Chain Management)

South African Perspective on Entrepreneurship

The US financial crisis of 2007/2008, considered by many leading economists to be the worst economic crisis since the Great Depression of the 1930s, was followed by a significant global downturn (2008–2012). The Global Competitiveness Report 2014–2015 notes that although the global economy seems to be finally leaving behind the worst and longest-lasting financial and economic crisis of the last 80 years, this resurgence is moving at a less decisive pace than it has after previous downturns.

It remains imperative for policymakers, business and civil society leaders to work together, to identify and strengthen the forces that drive future economic growth. In particular, governments are urged to focus on reforms that help to create enabling environments that foster innovation, facilitate more productive economies and critically, open up new and better job opportunities for all segments of the population. (Global Competitiveness Report 2014–2015). However, the African Economic Outlook 2014 notes that South Africa lags behind the rest of the region. Growth in South Africa in 2013 was estimated at a mere 1.9 %, rising by one Percent over the next two years. (GEM 2014)

An overview of South Africa's business environment

For many years, South Africa has been regarded as the number one economy in Africa and has been considered the gateway to the rest of Africa. This situation has now changed, and Nigeria has taken over this position. International organisations such as the World Bank, the World Economic Forum, Doing Business Report, Heritage Foundation and the United Nations provide indices and data on the underlying fundamental conditions required for a well-functioning business environment (such as a country's macroeconomic stability, infrastructure, education, labour market efficiency, technological readiness and market size). (Doing Business 2015). Since 2010, South Africa has dropped 16 places in terms of labour market efficiency and continued to languish at the bottom of the rankings in terms of quality of math and science education. The health of the workforce is also a grave concern – South Africa is ranked 132nd out of 144 economies as a result of high rates of communicable

diseases and poor health indicators more generally (GEM Report, 2014)

Government initiatives for Entrepreneurs

The transition from an intentional entrepreneur to one that starts a business is involved, and many entrepreneurs do not pass the intended stage for a variety of reasons. The importance of government policies in enhancing entrepreneurial activities is recognized throughout the province. Although it is not governments' responsibility to start new businesses and provide employment, it is their responsibility to provide an environment that is conducive to starting and sustaining a new business, through reforms and regulations that increase the ease of doing business and lessen unnecessary bureaucratic burdens. (Dti)

The EFCs (Entrepreneurial Framework Conditions) most likely to have the greatest influence on the transition from intentional to active entrepreneur, as well as on the sustainability of the SME sector, are:

- The availability of and easy access to entrepreneurial finance,
- Government policies and regulations; the transfer of research and development, and
- Physical infrastructure, of which the supply of electricity is a major concern.

South Africa has ample funding available to help aspiring entrepreneurs and is no better or worse than most other countries around the world.

However, there is a divergence between the entrepreneur and the institution providing the finance, possibly because of:

- A lack of sufficient collateral on the part of the entrepreneur,
- The inability of the entrepreneur to produce a business plan that is acceptable to the financial institution,
- Inadequate market research and the absence of a viable business idea that has demonstrable benefits, and
- Lack of access to markets.

The Benefits of Entrepreneurship

The entrepreneur who is a business leader looks for ideas and puts them into effect in fostering economic growth and development. Entrepreneurship is one of the most significant input in the economic evolution of a country. The growing economy can be an agricultural country moving towards the industrialization, or it may be the one where the industry may be in its infancy lacking advanced technology. Economic development of a country is the outcome of a purposeful human activity. The modern era is an era of changes. The whole world is becoming a village due to the industrial revolution and fast-developing communication technology. The globalisation of industry and commerce is bringing a vast change in various aspects of life. Economic development is an extremely dynamic process characterised by the pattern of demand shifts; new products are needed, appear for the production of goods within a country.

The Strategically Relevant components of a Company's Macro Environment

The environment is an important influencing factor for any ventures strategy, structure and process. Given its salient and immediate influence, entrepreneurs should start with analysis of the external environment. Environmental forces probably have their greatest effect when a new organization is emerging.

Each of these components has the potential to affect the firm's more immediate industry and competitive environment, although some are likely to have a more important effect than others. Since macroeconomic factors affect different industries in different ways and to varying degrees, it is important for managers to determine which of these represent the most strategically relevant factors outside the firm's industry boundaries. By strategically relevant, we mean substantial enough to have a bearing on the decisions the company ultimately makes about its direction, objectives, strategy, and business model.

The Macro-Environmental Challenges

Before exploring a specific set of environmental factors, it is important to consider the basic conditions under which the entrepreneur will be operating- the dynamics of the environment. The environmental forces surrounding the entrepreneur can be assessed according to two main measures (Rwigema and Venter: 112)

PESTLE, when expanded, denotes P for Political, E for Economic, S for Social, T for Technological, L for Legal and E for Environmental. It gives a bird's eye view of the whole environment from many different angles that one wants to check and keep a track, while contemplating on a precise plan.

A range of factors interacts to influence the economic performance of the South African automotive sectors. These include: economic cycles, commodity markets and commodity prices; the availability of credit; the exchange rate and currency volatility; increasing customer demands; global advances in technology; administered and logistics costs; raw material input costs and availability; labour productivity and skills availability; the local political and social context; fair and unfair competition; government expenditure and infrastructure development; and environmental considerations.

While these are discussed separately in the sections below it is important to remember that in reality these issues are all inter-related and that the extremely negative consequence of the recent recession cannot be divorced from the range of other challenges that the manufacturing sector.

Political Factors

Entrepreneurs are constantly aware of the pervasive influence of politics on their ventures. The political climate often dictates whether it makes sense to act entrepreneurially or not. Changes in government carry with them the prospect of changed laws and regulations, new policies and restrictions, and varied attitudes of business. SA entrepreneurs closely monitor changes in political fortunes, laws and tax regimes and international relations.

Economic Factors

Economic factors are metrics that measure the health of any economic region. The economic state will change a lot of times during the firm's lifetime. You have to compare the current levels of inflation, unemployment, economic growth, and international trade. This way, you can carry out your strategic plan better.

Social Factors

Assess the mentality of the individuals or consumers in a given market. These are known as demographic factors. Social indicators like exchange rates, GDP and inflation, are critical to management. They can tell when it is a good time to borrow. These factors help find out how

an economy might react to certain changes.

Technological Factors

This step entails recognizing the potential technologies that are available. Technological advancements can optimize internal efficiency and help a product or service from becoming technologically obsolete. The role of technology in business is increasing each year. This trend will continue because R&D drives innovations.

Environmental Factors

Both consumers and governments penalize firms for having an adverse effect on the environment. Governments levy huge fines upon companies for polluting. Companies are also rewarded for having a positive impact on the environment. The consumers are willing to switch brands if they find a business is ignoring its environmental duties.

Legal Factors

This involves getting familiar about the laws and regulations in your province or country. It is critical for avoiding unnecessary legal costs. These factors give insight to the legal elements. Often, start-ups link these elements to the political framework. Many legal issues can affect a company that does not act responsibly. This step helps to avoid legal pitfalls. You should always remain within the confines of established regulations. Analyzing the total macro-environment is an extensive task. Even though, it is complex, understanding the framework of fundamental influences will allow you to maintain an organized and strategic approach. These will isolate each opportunity or threat. After conducting a PESTEL analysis, company managers can create strategies. The macro-environmental factors will shape the policies. I am sure that the thinking process will be as sensitive as current and future environmental factors. (Pestle Analysis Framework)

Transport Efficiency

Fuel costs are by far the most significant and volatile cost driver in transport costs. Despite the expectations that the crude oil price may actually decrease in the short term, South Africa's diesel price is also very dependent on the exchange rate and additional levies added to the base price of fuel. Calculated scenarios show how sensitive overall logistics costs are to Changes in the exchange rate and crude oil price effect transport efficiency. Externally, costs, especially emissions and accident costs will also be improved by reduced fuel consumption, reduced congestion, and better road safety.

Environmental Skills

Skills that support the development and use of 'greener' technologies are likely to become increasingly important in the sector and thus need to be considered among the skills development priorities now.

Environmental Considerations

Finally, impacting on the sector is the cost associated with meeting increasing environmental pressures. The nature of metals manufacturing, especially at the milling stage where purification of the raw material demands a number of high-temperature processes, subjects this subsector to stricter legislation; for example, the Waste Management Act (2008) and the National Waste Management Strategy. Furthermore, the strategy places the responsibility for full life-cycle waste management on the private producer, which means that companies will increasingly have to consider the final disposal or recycling of manufactured goods.

The SA government also introduced a CO2 Vehicle Emissions Tax effective from 1 September 2010. This is applicable to all new passenger vehicles sold (and possibly also light commercial vehicles) but is unfortunately calculated as part of the cost of production or importation and not added as a tax to the final product.

Scarce and critical skills remain a problem

In the stakeholder interviews industry reiterated that the skills crisis remains a major problem for South African manufacturing growth and sustainability going forward. This is because of: the magnitude of skills shortages preceding the economic recession; the chronic nature of the challenges at school and FET levels is underlying the problem; and firms’ widespread and concerted efforts to retain their scarce and critical skills during the crisis.

Industry-level efforts to retain skills include the development of databases of retrenchment employees. In addition to the efforts of particular firms in this regard, the AIDC has been commissioned to establish and manage such databases for the Gauteng automotive sectors,

Urgency for sector and other education and training stakeholders to continue and even increase their focus on the skills crisis is underlined by the impact of the crisis on training activities, as well as the automotive industry’s high skills trajectory and indications that an increased emphasis will be placed on multi-skilling workers for improved production efficiencies, and on developing pools of higher-level skills among lower-level employees in support of improved succession planning.(MerSETA Regional Sector Skills Plan 2013)

Table 5: Examples Critical List of Artisan Careers within- Automotive Industry 2013 (Merest)

Gas Practitioner	Patternmaker	Industrial Machinery Mechanic	Forklift Mechanic	Motorcycle Mechanic	Heavy Equipment Mechanic
Pipe Fitter	Die Sinker	Mechanical Fitter	Precision Instrument Maker and Repairer	Automotive Engine Mechanic	Tractor Mechanic
Vehicle Painter	Metal Machinist	Diesel Fitter	Optical Mechanic	Toolmaker	Patternmaker
Moulder	Fitter and Turner	Small Engine Mechanic	Pre-Press Technical Worker	Automotive Motor Mechanic	Die Sinker
Welder	Automotive Motor Mechanic	Diesel Mechanic	Electronic Originator	Fitter and Turner	Metal Machinist

(Source: MerSeta Sector Skills Plan, 2013)

According to sample groups undertaken in the motor sector in 2013, the scarcity of motor- and motorcycle mechanics, panel beaters, Diesel mechanics and automotive spray painters is the

result of both absolute and relative factors.

For many of these artisan groups, the MIBCO has fewer people registered than there are registered businesses that offer these services, despite the fact that according to MIBCO regulations each company is required to have at least one qualified artisan in the particular field. Retirement rates are also high.

Research Methodology

Target Population

The key industry role-players consist of stakeholders covering the broader automotive industry in South Africa and include representatives from the auto industry associations:

- Automotive Supplier Park (ASP),
- Automotive Industry Development Centre (AIDC),
- Automotive Industry Export Council (AIEC),
- Department of Trade and Industry (DTI),
- National Association of Automobile Manufacturers of South Africa (NAAMSA),
- National Association of Automotive Component and Allied Manufacturers (NAACAM),
- Members of Retail Motor Industry Organisation (RMI) Key Stakeholders, and
- Automotive Industry Development Centre (AIDC).

The AIDC is an industry support centre established by the Gauteng Provincial Department of Economic Development to assist the Provincial automotive industry in its quest for international competitiveness.

The AIDC works in partnership with business, government departments and other organisations to revitalise economic development within the auto industry. Its focus areas are skills development and training, supplier development and supply chain development. Establishing automotive supplier parks has become a specialist service.

NAAMSA was founded and represents the collective, common interests of the new motor vehicle manufacturing industry.

NAAMSA comprises companies involved in the production of cars and commercial vehicles. NAAMSA also represents the interests of companies involved in the importation and distribution of new motor vehicles in South Africa.

NAACAM was established to represent the automotive component manufacturers in South Africa. Membership consists of national member companies with regional manufacturing sites. The NAACAM members consist of Tier 1 suppliers Tier 2 and three manufacturers.

AIEC was established with the purpose of providing a central body to assist companies in the automotive sector that are currently exporting, may be interested in exporting in future, or may become capable of exporting in future.

The AIEC is administered by the NAAMSA offices in Pretoria and represents the interests of the motor vehicle exporters/ manufacturers, as well as exporters/ manufacturers of trucks and buses, and over 400 component suppliers in South Africa.

The **target population** for the purposes of this research was approximately 1200 companies in total group of individuals from which the sample might be drawn. Generalisability refers to the extent to which we can apply the findings of our research to the target population we are interested in. The sample group comprised 25 Companies.

Limitations of the Research

Identification of challenges via primary research was conducted by engaging with stakeholders from different chambers in the region. Companies within the same chamber (sector) might have different specific challenges which might get glossed over or overemphasised depending on respondents interviewed. Assent for the final challenges and lists are given with the need to take the aforementioned into account.

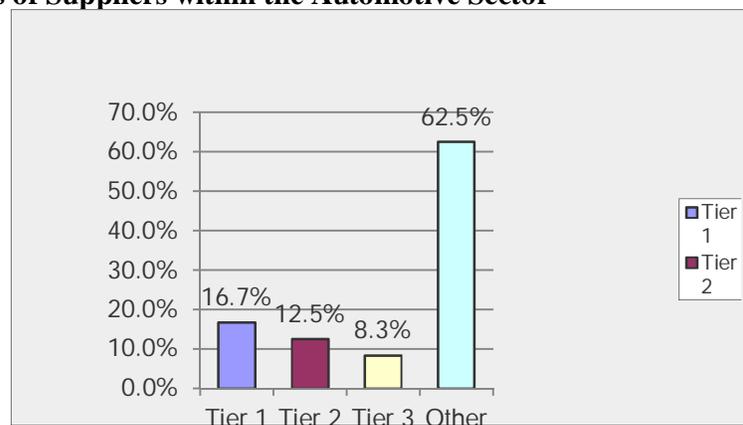
Results, Discussion and Interpretation of findings

Response Rate

In total 25 completed responses out of the 25 targeted companies were received, representing a response rate of hundred per cent, the questionnaires was sent via email and some delivered by hand. Refer to the Survey questions (Appendices 2).

Analysis of the Data

Figure 5: Types of Suppliers within the Automotive Sector



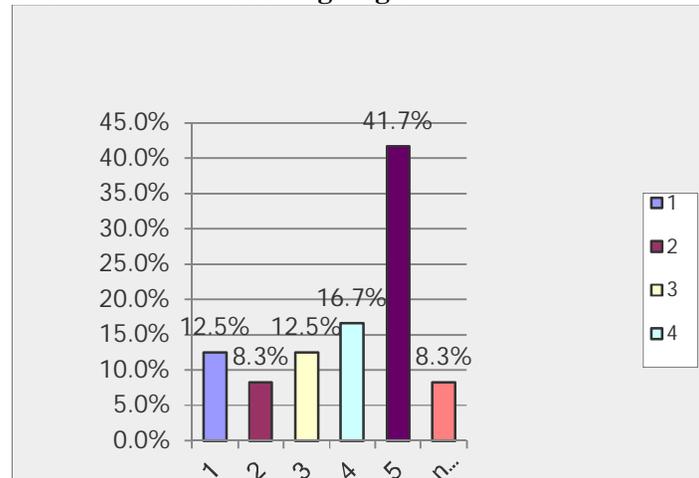
A majority of the suppliers do not fall into the category of a TIER 1, Tier 2 or Tier 3 suppliers 16 % are Tier 1 Suppliers, 12.5 % Tier 2 and 8.3 % are Tier 3 suppliers. Interestingly, 62.5% of the sample group were not Tier 1-3 suppliers, highlighting that many of companies form part of the related industries within the sector.

Tier 1 Suppliers are the first supplier in the supply chain to the OEM. First Tier suppliers are firms that supply automotive components directly to the assemblers. They supply complete systems or subcomponents that is; drive trains, interior systems, amongst others.

Tier 2 Suppliers are the supplier to the Tier 1. Second Tier suppliers are firms who work according to designs provided by assemblers or global first Tier suppliers. Second Tier suppliers require process engineering skills in order to meet cost and flexibility requirements.

Tier 3 Suppliers are the supplier to the Tier 2 supplier. Third Tier suppliers are firms that supply basic products. In most cases, only simple engineering skills are required. At this point in the chain, firms compete predominantly on price.

Figure 6: Suppliers located within Gauteng Region



From the sample set being questioned 41% of all the responded stated they have five suppliers based on Gauteng. This does have a positive effect of their business because Logistic costs are optimised for greater efficiency.

Prior to 1994, the local automotive industry was largely domestically owned and focused almost exclusively on the Southern African market. Following the re-integration of SA into the global economy, multi-national motor manufacturers re-invested in domestic assembly plants and existing or new Tier 1 suppliers.

The result was that both the structure and the ownership profile of the sector changed entirely within a few years. Operating as part of the global automotive industry means that local plants compete with international sister plants for new model production. At the same time, most decisions regarding production volumes, global supply and supplier contracts are made at international head-office level. Each location offers distinct opportunities and distinct challenges and this study explores some of these, as highlighted by the industry.

Figure 7: The Challenges faced within the automotive industry in Gauteng

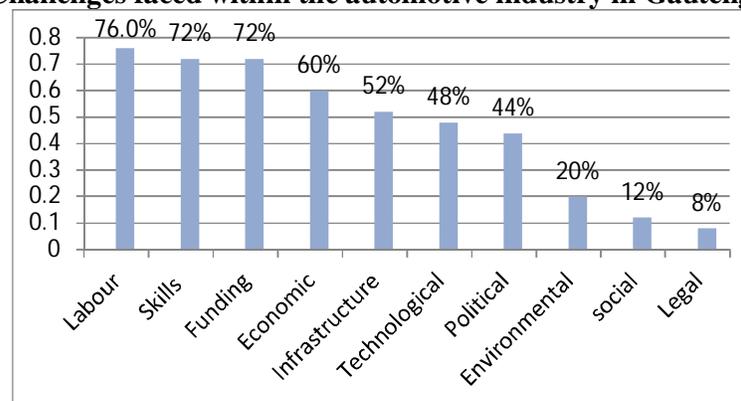


Table 9: Mean Table

Challenges	Mean (n25)
Labour	3.04
Skills	2.88
Funding	2.88
Economic	2.40
Infrastructure	2.08
Technological	1.92
Political	1.76
Environmental	0.80
Social	0.48
Legal	0.32
Other	0.48

The study showed that Labour is the biggest challenge within the auto sector within Gauteng, followed by Skills, Funding, Economic and Infrastructure challenges, amongst others.

A collective of 76% of the sample indicated that the main challenge is labour, with a mean of 3.04, a mean of 2.88 indicated that skills and funding are the other major challenges with Economic and Infrastructure having a mean of 2.40 and 2.08 respectively, whilst technological, political and environmental, and other challenges were not as important to the group sampled in this research.

Labour

SA labour is generally considered to be poor value for money. Industry argues that a number of factors underlie the challenge of low labour productivity. First, wages increase in relation to the generally limited supply of artisans and experienced management skills, and even more so for the small group of relevantly skilled people from previously disadvantaged backgrounds.

SA's wage and management costs are more than double the costs of a competitor such as Thailand, while artisan costs are more than 10 times higher. Second, at labour level, the highly unionised nature of manufacturing employment also serves to drive labour costs beyond the level that the market would otherwise pay.

Taken together, low levels of labour productivity are considered one of the major factors undermining SA's ability to compete internationally, particularly with the East, where the quality of production is now world class and where most of the major international manufacturing companies represented in SA have set up sister plants.

In the context of industry-level drives to improve quality, low levels of local labour productivity have provided the incentive to upgrade capital equipment and technology and to reduce employment levels, allowing companies to produce the same or even greater volumes with fewer, more highly skilled people

Scarce and critical skills remain problem – Economic Challenges

Skills shortages (scarce skills) and skills gaps (critical skills) within the manufacturing sector as a key factor constraining growth and the efficient and sustainable use of import technology. Unfortunately, since then the situation appears not have improved but deteriorated instead. All research undertaken since that time continues to support the same clear picture.

Skills shortages, as discussed in Chapter 2 (refer to Table 5) at the artisan level, across all the sectors, include toolmakers, electricians, fitters and turners, millwrights, and electronics, while management and professional skills shortages span industrial engineers, mechanical engineers, production management and supervisors.

Among artisans and professionals particularly, critical skills also relate to specific technical abilities and a general knowledge of the industry. Concerns also relate to high rates of dropout from these programmes and thus declining throughput levels, which further block the pipeline of scarce skills.

Advances in Technology

The study showed that advances in technology formed 48% of the challenges faced by entrepreneurs in Gauteng. The SA manufacturing sector is struggling to achieve and maintain global competitiveness in production because of the difficulty it experiences with keeping up with global advances in technology. Such technologies include computer aided design (CAD), computer aided modelling (CAM), and Computer Numerical Control (CNC), the last of which is impacting sheet metal fabricators by dramatically improving productivity and quality.

Internationally, the trend is for the development of small clusters of specialised firms working together, which enables exploitation of niche markets. As discussed in Chapter 2, this is an increasing trend.

Factors that influence the Economic Performance of the Sector

Economic factors accounts for 60% of challenges faced by the entrepreneurs in the study. These include: economic cycles, commodity markets and commodity prices; the availability of credit; the exchange rate and currency volatility; increasing customer demands; administered and logistics costs; raw material input costs and availability; fair and unfair competition; government expenditure and infrastructure development; and environmental considerations Economic cycles, commodity markets and commodity prices.

Infrastructure

Whilst infrastructure is often overlooked, the study showed that 52% of the sample agreed that infrastructure is an area that needs to be further developed to enhance entrepreneurship. It ties in with the 10 Pillar Programme of Gauteng Province as discussed in Chapter 1.

Well-developed infrastructure reduces the effect of distance between regions, integrating the national market and connecting it at low cost to markets in other countries and regions. In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and reduce income inequalities and poverty in a variety of ways. A well-developed transport and communications infrastructure network is a prerequisite for the access of overall economic efficiency by helping to ensure that businesses can communicate and decisions are made by economic actors taking into account all available relevant information.

Funding

72 % of the sample agreed that funding formed a barrier to enhance entrepreneurship within Gauteng's automotive sector.

In reviewing access to finance for SMMEs, it should be borne in mind the number and range of institutions providing different kinds of finance for different kinds of investment. The picture on the demand side is equally multi-faceted. In particular, different categories of firms have:

- Different needs for capital to run their businesses,
- Different resources that they can invest; and
- Different access to external finance.

To start with, a firm's need for capital, in quantity and quality, depends on factors like the firm's size, its sector, and its age/growth opportunities.

Young, fast-growing enterprises can generate a considerable need for working capital, while established slow-growth businesses tend to generate sufficient cash-flow to face their needs. A start-up cannot afford too much debt and will rather require equity, while better-capitalised enterprises can be better off using debt.

In order to develop entrepreneurs, government and financial institutions needs to provide funding models to drive entrepreneurship.

Clearly, in the provincial context, there is a fundamental inequality between white and “previously disadvantaged” entrepreneurs in that respect. Lastly, suppliers will more easily provide finance to (and in the first place, entrepreneurs will more skilfully apply for finance in) certain types of firms. In particular, access to finance is easier for older firms than for young ones, and there are also differences between micro- and medium-sized enterprises, between an enterprise emerging from previously disadvantaged backgrounds and an established white business, etc.

Question 11

What Gaps are you experiencing within the Production line, and does it affect your competitiveness?

From the sample analysed the major gaps experienced by the entrepreneurs were:

- TPM – Total Productive Maintenance,
- Design Capacity- The Volume of work is too great for any one company Skills- This is being addressed by NTIP and TUT (IAT) Finance -All toolmakers experience cash flow problems,
- Imported Machinery,
- Quality Concerns, and
- Lean Manufacturing Process implementation.

The study indicated that total productive maintenance (TPM) was a challenge; TPM is a system of maintaining and improving the integrity of production and quality systems through the machines, equipment, processes, and employees that add business value to an organisation. Lack of skilled staff contributes to this challenge as indicated in Section 4.5. Technological skills pertaining to design capacity also poses a challenge, as many machines used within the industry are imported.

Lean manufacturing is not being utilised by businesses. Most of the large companies employ a few lean experts. Many mid-size and most small businesses do not have lean manufacturing expertise in the company. Staff lack the expertise within this space, and it’s a costly exercise to have expert lean manufacturing experts on every shop floor.

This challenge falls within the scope of lack of skilled and trained staff as discussed in Chapter 2

Question 12

Are there supply chain challenges you are faced with within the sector in Gauteng?

The sample entrepreneurs indicated the following key supply chain challenges:

- Lack of Specific components are not available locally and this create lead time challenges,
- Transport Costs via rail network expensive,
- Lack of Vertical supply chain integration- input Material,
- Raw Material suppliers dominate prices,
- Travel Costs too high,
- Most Raw material is imported,
- Localisation needs to be accelerated,
- Lack of OEM working together on logistics and supply chain efficiency, and
- Safety and security.

South African supply chain blockages are typically caused by the lack of adequate rail capacity and efficiency, port congestion, border post delays and customs clearance. In linking these concerns with the continuous aim of the automotive industry to be highly reliable and highly responsive to equal the demands of the customer-driven production process, it is clear that the current logistics infrastructure is not conducive to enabling the industry to achieve those goals.

Today's automotive companies (OEMs and suppliers alike) have spent considerable time and funds in order to implement the controls to lessen the effect of inefficient supply chains and logistics networks. Demand forecasts are increasingly based on firm orders, enabled by the postponement of production to the very last minute. Information is shared via various electronic mediums such as Electronic Data Interchange (EDI), and is made available to the nth Tier in the supply chain via complex modelling of the Bill-of-Material.

Lead times are shortened through the Just-in-time and Just-in Sequence and/or Modular delivery of goods to the point of use on the assembly line, which also facilitates the reduction in batch sizes and more frequent order deliveries. Skilled accounting and foreign exchange management limits price fluctuations.

Question 13

What were your main challenges you faced in starting up your automotive company within Gauteng?

The entrepreneurs highlighted the following challenges faced by start-up automotive companies:

- Barriers to entry into automotive industry OEM are less likely to support start-up companies,
- Lack of Skills within auto body repair and motor mechanics,
- High R&D costs,
- OEM prefer tried and tested suppliers,
- Huge cost for training methods,
- Space and infrastructure,
- Funding,
- Equipment, and
- Compliance to Legislation – BBBEE.

Most of the challenges the automotive industry will face in the next few years can be identified today. They are shaped by changes in the underlying economics of the auto business, from supplier through consumer, and by definition they are sufficiently broad to be of interest to all the participants in the industry. We have distilled the five macro challenges described in Chapter two from the research. Product Development, Technology, Infrastructure, Funding are all interlinked to the main challenges faced.

Question 14

Do you see the SA economic environment as a challenge? E.g. Electricity costs, etolls, etc. 100% of the sample agreed that South African have many economic and environmental challenges, namely:

- Funding,
- Mentorship,
- Eskom (Electricity),
- E-tolls,
- Delays in processing MCEP incentives,

- An inefficient railway system,
- Labour volatility,
- High costs of raw material, and
- Labour Unrest.

The SA Economic environment poses great challenges for many entrepreneurs; these factors have underpinned downward revisions of economic growth projections for the entrepreneurs within the sector.

The majority of companies in the survey expect either a fragile to stable condition within the sector over the short term due to prospects of industrial actions, socio-political instability, and weak rand induced rise in input costs, amongst others.

Seasonal factors, depressed domestic consumption spending and increased competitiveness resulted in a dull performance as much as we have many economic challenges, the Gauteng province remained the top province within the country. Load shedding, introduction of tolls, and high costs of raw material, are having a major impact on the province.

A strong and healthy sector requires a deliberate and positive approach by all stakeholders to bring about an environment that is conducive to increased investment into manufacturing, improved competitiveness and job creation.

Question 15

Is Gauteng Government support easily accessible for the continuity of your operation within the automotive sector? E.g. Dti, Dept of Economic Development, IDC, etc.

56% of the sample did indicate that Government support is easily accessible.

South Africa has adopted the National Development Plan, Vision 2030, as a roadmap to build a prosperous, inclusive and successful nation. Accordingly, the Gauteng Provincial Government has adopted a fifteen-year programme for Transformation, Modernisation and Re-industrialisation (TMR) of the Gauteng City Region economy as a provincial plan to realise and give effect to the NDP.

Over the past twelve months, the provincial government and municipalities have interacted with key role players to solicit views, mobilise community support and build partnerships that promote a growing and inclusive economy that creates decent employment and facilitate broad-based empowerment of all sectors. All spheres of government are working together to increase investment in infrastructure across the Gauteng City Region because good infrastructure is the lifeblood of economic transformation and social wellbeing. The Gauteng Premier, David Makhura, did elude that the Province of Gauteng (SOPA, 2015) will focus on the following areas of infrastructure in which public and private sector investment is necessary:

- Building new mega human settlements and post-apartheid cities;
- Rolling out massive public transport infrastructure;
- Broadening the energy mix to support economic growth and development;
- Investing in ICT infrastructure and broadband connectivity; and
- Aerotropolis (airport city) development to re-industrialise and boost manufacturing.

The 25 companies surveyed in this analysis are upcoming and well-established companies that are predominantly South African owned. They focus mainly on the South African market and have hardly any plants overseas. However, although South Africa is the main trade market for many of them. Improved market access is also a negligible advantage, as the

majority of companies export through OEMs and/or their European partners. The quality requirements for exports are the same that the component manufacturers have to meet for any market, as the quality is globally determined.

The surveyed companies' strategy on how to deal with challenges relates more to improving existing products and processes than to introducing new activities. Thus, new products and processes are predominantly introduced at the request of the OEMs, suggesting that the surveyed firms show a more reactive than proactive approach.

On the other hand, it must also be emphasised that the opportunity for upgrading activities is very narrow, as the majority of the entrepreneurs rely on OEMs who determine the duties and responsibilities for their own economic well-being.

Conclusions and Recommendations

Findings from the Study

Findings from the Literature Review are as follows:

Employment and Labour Challenges

- South Africa's unemployment rate is very high and constitutes a critical challenge for the Province's development agenda. Further, a significantly higher burden of unemployment is borne by women and the youth in the labour market,
- Youth unemployment is also high in Gauteng, where significant barriers to entry into the labour market remain in place. Efficient labour markets must also ensure clear, strong incentives for employees and efforts to promote meritocracy at the workplace, and they must provide equity in the business environment between women and men. (GEM,2014),
- Nature of the Skills Gap as a Challenge,
- Shortage of professionals – engineering and built environment,
- Limited knowledge retention,
- Skills shortage concentrated at a local government level,
- State Training facilities largely neglected,
- Shortage of technical instructors and workplace assessors and mentors, and
- Skills needs of the Sector.

Technological Challenges

- The work environment for the majority of employees in the sector demands a level of technical knowledge and expertise. These range from the more basic technical skills required by machine operators to the advanced technical skills demanded by artisans and engineers. In addition, as technology in the areas of materials, manufacturing, logistics, CNC and CAD are continually advancing, regular updating of technical skills across all levels of employees is an on-going skills development need for the sector.

Fundamental skills

- "Fundamental work-readiness skills" refers to the skills necessary to utilise acquired theoretical and practical knowledge, and skills in support of efficient and profitable production and service delivery for the employer within the work environment. In US technical colleges, this group of competencies is referred to as "critical core

Infrastructure

- Programme to coordinate improvement in project-related skills, with project management & engineering skills within the province
- Align the national, provincial and local structures
- Align the investment plan with funding allocation
- Long-term support for long-term projects, especially regional projects
- Predictable process for triggering of national projects, including regulatory approvals, and
- Strong policy direction for incentivisation of supplier development, localisation and private sector participation.

Funding

- New funding models need to be introduced, possibly backed by government, which enable entrepreneurs to obtain seed capital without the stringent requirements required by commercial banks with respect to collateral. Commercial banks are often not best placed to assess the risks associated with SMEs,
- Establish financial institutions as a public/private partnership (PPP) that will provide low cost funding for nascent, new and established entrepreneurs,
- Reduce or eliminate, for a given period, the tax burden on new entrepreneurs,
- Establish a nationwide network of walk-in centres to support entrepreneurs, especially informal and small businesses,
- Radical intervention will focus on is the re- industrialisation of the Gauteng economy through strategic infrastructure development, and
- The massive rollout of public transport infrastructure across the province shall be utilised to revitalise and modernise old industries that will locally manufacture or assemble buses, trains and locomotives.

Labour Laws

- Ease the restrictive labour laws and empowerment frameworks for small businesses. South Africa's restrictive employment laws are seen as one of the biggest regulatory obstacles to business growth. Legislation around the hiring and firing of staff scares many small businesses off from hiring staff. Once companies hire staff, it is very difficult to let them go if the business cannot afford them or if they prove to be unproductive. Small businesses rarely have the resources to offer long-term mentoring and training. Labour legislation needs to accommodate the up- and downswings in small businesses

Findings from the Primary research

- Only 52% of the sample entrepreneurs supplied automotive components to OEMs in the Province. These companies were well-established and linked to bigger component suppliers. Conversely, the remaining 48% were either start-up companies and not directly linked to larger, more established suppliers.
- From the 25 sample entrepreneurs, 62% were not Tier 1, 2 or 3 suppliers, but formed part of the automotive value chain.
- The entrepreneurs had varied service offerings to the industry, thus highlighting the magnitude of the automotive industry and the need for services across its value chain.
- The 52% of entrepreneurs were suppliers to BMW, Nissan and Ford as Tier 1 to 3 suppliers within the province, while the remaining companies provided services to Insurance companies, government agencies and Tshwane University of Technology.

- 41 % of the suppliers sourced raw material and components from suppliers in the province.
- Labour, skills and funding were noted as the critical challenges areas and which needed to be adequately addressed.
- 62% of the entrepreneurs agreed that Gauteng's government provided sufficient support to entrepreneurs and start-up companies in the Province.
- Local producers are unable to compete in respect of price and are losing market share. Industry argues that the negative impact of government's refusal to provide the manufacturing sectors with any direct protection against imports will be greater than any of the potential positive benefits arising from either the specific or the general industry support strategies.
- The poor educational and training system also creates a gap in the capacity and readiness to start a business. Young people are left with little preparation in terms of life and technical skills to start and grow a business. It is then left to informal training, mostly from government, NGOs social enterprise initiatives, to fill the gap.

Recommendations

The central question of this paper is whether the government helps to integrate the provincial automotive industry into the national economy and the national value-added chain. From a theoretical point of view, the provincial government offers South Africa better access to competitive inputs and the latest technology, allows producers to exploit economies of scale due to a larger market, promotes cooperation with foreign firms and helps to attract FDI.

Competitive regional producers replace domestic ones so that production is shifted to the most competitive suppliers and resources are optimally allocated. Furthermore, protected access to a large market and cooperation with European firms may offer Gauteng entrepreneurs the chance to improve their industrial capacities and increase their international competitiveness.

However, as the discussion in the paper shows, the impact of the challenges on the South African automotive industry is somehow different and cannot be analysed in an isolated way. Accordingly, the fifth administration, has adopted a ten-pillar programme of radical transformation, modernisation and re-industrialisation of Gauteng over the next five to fifteen years.

South Africa's low levels of entrepreneurial activity are the result of personal, as well as environmental factors. Improving the skills base and fostering positive entrepreneurial attitudes through the education system is critical. However, without a more enabling environment that encourages individuals to see entrepreneurship as a financially viable employment option, it is debatable whether South Africa will experience a significant increase in entrepreneurial activity.

Government policies and regulations

- Establish experiential incubators that are easily accessible to young potential entrepreneurs, where they can learn and earn while they learn to earn, e.g. AIDC Winterveld Automotive Hub,
- Provide mentorship programmes for new entrepreneurs where the mentors have practical personal experience of running a business. It is essential that all entrepreneurial trainers and consultants are well trained and/or experienced in the specific area of expertise that they offer. E.g. AIDC Youth Re-skilling Programme.
- The ten-pillar programme includes transforming the economy to address unemployment; reindustrialise the province through infrastructure development; and transform spaces people live in by integrating work and human settlements to address the spatial legacy of apartheid amongst other things.

Ministry of Small Business Development

- Provincial Government must streamline small business support through an integrated system of support for small business via the 10 Pillar Programme,
- Government should aggressively incentivise entrepreneurship through greater development of specialised economic zones; providing tax breaks for businesses below certain revenue thresholds; and lowering barriers to entry in certain industries.
- Provide incentives for high-growth entrepreneurial ventures, especially in the technology sector. Fiscal and other incentives should be provided for research and development and science and technology parks should be established to attract and strengthen linkages among foreign and domestic knowledge firms.

Labour Recommendations

- To accelerate training output in the priority areas of design, engineering and artisanship that is critical to the manufacturing, construction and cultural industries.
- To increase the number of skilled personnel in the priority areas of design, engineering, artisans that is critical to manufacturing, construction and cultural activities through net immigration.
- To accelerate the number of new training graduates in priority economic sectors identified in the IPAP.
- To ensure that FET and HET are responsive to the skills demands arising from South Africa's social and economic development imperatives.

Skills recommendations

- Develop a sector labour market intelligence (LMI) system and facilitate sector-specific research initiatives;
- Promote artisan development and sector-specific priority skills;
- Establish and facilitate strategic partnerships;
- Increase the flow of appropriately skilled new entrants into the system; and
- Develop the skills of the existing workforce.

Supply Chain Recommendations

- Multi-tier Visibility, Planning and Execution - For the automotive market to shift towards the demand-driven model, the value network, from the dealer to assembly plant to supplier, must be viewed as a multi-party, multi-echelon network of inter-reliant entities that includes components suppliers for service and aftermarket, vehicle assembly, carriers, dealers, and end consumers.
- Operations Planning - Vehicle assembly plants have the demand signal for their capacity and production planning needs. If the network is extended to the supply side of the vehicle assembly plants, suppliers have downstream visibility of the planned orders. Providing all parties with a single version of the truth to forecast, sales data, and plans creates the right alignment for the entire supply chain to improve the performance.
- Multi-tier Inventory Management and Visibility - Multi-Tier inventory management and visibility ensures targeted high customer service levels while re-deploying and reducing the overall inventory held across the network. Under this approach, some dealers in the network may see their inventory levels decrease, while some may see

their inventory levels increase in the multi-party value network. There are cost trade-offs between flexibility and efficiency for every party in the value network.

- Supply Chain Risk Mitigation - The supply network has extended and expanded globally, and the risk inherent in the network has increased accordingly. Network services should provide insight on how to effectively set up a supply network, taking into account alternative sources of supply and fulfilment. Networks with multi-tier network visibility can enable trading associates to immediately evaluate the impact of these interruptions when and wherever they happen. The possibilities related to sourcing alternative supply and logistics can be explored and evaluated to reduce the risk of supply disruption and ensure supply continuity.

Areas/ for further research

The dissertation is concluded with areas highlighted as topics for further research. These topics are as follows:

- To investigate the National Challenges facing Entrepreneurs in the South African Automotive industry,
- To determine the status of supplier development in Gauteng,
- How OEMs could become further involved in developing entrepreneurs through Incubation Programmes,
- How OEMs can improve localisation by developing skilled entrepreneurs to supply components to their production lines.

Conclusion

The study was undertaken to evaluate the challenges faced by entrepreneurs within the automotive sector in Gauteng, to assess the skills shortages and training available within the sector in Gauteng, to understand the gaps experienced by entrepreneurs and how it effects their competitiveness within the automotive sector in Gauteng, and to evaluate the supply chain challenges faced by entrepreneurs within the automotive sector in Gauteng.

In conclusion, through helping to identify key weaknesses in the entrepreneurial environment, is to provide policy makers and business leaders with information that enables them to put into place precise, practical and targeted recommendations.

An economy cannot increase the quantity and quality of potential and intentional entrepreneurs without creating an enabling environment in which entrepreneurship can flourish. Informed policy decisions which help to create a nourishing entrepreneurial environment will be of benefit to entrepreneurs in all phases of their businesses, be it young start-ups, established or repeat entrepreneurs.

Our economy has major structural problems that necessitate the call for radical economic transformation. These are massive unemployment, casualisation of labour, high-income inequalities and exclusion of a large number of the black population from meaningful economic participation and ownership. We are trailing behind other city-regions in the world with regard to investing in skills, research and innovation and as well as in economic infrastructure that enables us to build a smart and green economy. All these infrastructure problems have to be addressed, as part of radical economic transformation, to enhance entrepreneurship within the automotive and allied sectors.

As we undertake the onerous task of radical economic transformation, we do so knowing fully well that Gauteng is currently the leading economy in the country and Southern African Development Community region and a key player in Africa's economy. According to the World Bank Development Report, between 2000 and 2010 six of the ten fastest economies were from Africa. Gauteng is the fourth biggest economy in the continent, contributing 11% to Africa's economy. Globally there has been an economic shift towards countries of the south, particularly the (Brazil, Russia, India, China and South Africa) BRICS countries. All

these facts underscore the strategic significance of our province in strengthening economic trade and partnerships with African and BRIC.

The success of the Gauteng City Region's infrastructure programme relies on a proactive relationship between the state and private sector in infrastructure planning, financing, construction and management. Furthermore the status quo analysis of the needs in Gauteng indicate that in all sectors, the levels of investment required in existing and new are likely to exceed the resources available from the sector.

It is anticipated that this research will look at a range of possible public private partnership opportunities as possible contributors to meeting the Gauteng City Region's long-term entrepreneurial requirements.

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