

RESEARCH ARTICLE:

## Internal Drivers of Innovation and Sustainability in South African Manufacturing Small and Medium Enterprises

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### Abstract

The study aimed at determining the relationship that exists among internal management systems, innovativeness, and the sustainability of Small and Medium Enterprises (SMEs) within the South African manufacturing sector. As a result of the changes that are taking place daily in technology and business operational policies, organisations are to revisit their internal management systems, level of innovativeness and sustainable measures with main reference to SMEs. A quantitative research approach was used in the study, as it was meant to establish the relationship that exists amongst the set variables, internal management systems, innovativeness, and sustainability of SMEs in the manufacturing sector. In the study, the target population consisted of all the SMEs in the manufacturing industry of South Africa. The scale accuracy was performed using Smart PLS 3.0. The findings from the study show that there is a positive and significant relationship between all the variables. The study recommends that there is a need for the government through the small and medium enterprises development department to review their approach to SMEs so that they can have adequate resources to enhance their business operations.

**Keywords:** small and medium enterprises; resource mobilisation; infrastructure development; innovativeness; sustainability of SMEs

### Introduction

In the past few decades, Small and Medium Enterprises (SMEs) have emerged as major drivers of socio-economic growth across the globe (Venkatasubramanian and Ramanakumar, 2018). Fatoki (2011) opines that SMEs are repeatedly considered the root leading to the creation of big enterprises besides being the fuel of economic engines. Thus, SMEs contribute immensely to the creation of national wealth and the generation of economic growth and have been cited as major drivers of employment creation (Maloka, 2013). In South Africa, SMEs play a pivotal role in creating jobs and wealth in the economy. They employ almost half of the working population and contribute 50% of the gross domestic product (GDP) (Fatoki, 2011). Tshikhudo (2016) asserts that the industry consistently features among the top three sectors with the highest multiplier effect in terms of output, employment, export earnings and fiscal revenue for every one rand invested. Thus, SMEs play a significant role in the socio-economic development of the nation. The above discussion suggests that although SMEs in South Africa and the rest of the world play a pivotal role in the growth of the economy, there are always challenges that cause most of these enterprises to fail. The failure of these SMEs is linked to the underperformance of the national economy, as shown by an increase in poverty levels and unemployment in many developing countries (Masocha and Fatoki, 2018), hence the need for further investigation into the sustainability of SMEs in the South African manufacturing industry.

South Africa has numerous entrepreneurial ventures that are either being established or are already in operation, which collectively form part of the SME sector. Widana *et al.* (2015) report that 97% of South African business

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enterprises are SMEs and that, on aggregate, the sector contributes 35% towards the country's GDP. Larger businesses develop from these SMEs thereby creating space for new players to enter the SME sector. However, this can only be achieved if there is the provision of a sustainable environment in which SMEs can operate. A sustainable SME environment allows full-capacity utilisation as a result of the presence of all the fundamental business inputs (Mago and Toro, 2013). There is a direct relationship between the survival and growth of SMEs and economic growth, where the growth of the SME sector is the controlling factor (Kumar, 2015). In attempting to embrace a sustainable SME environment, the South African government has been involved in several initiatives as a way of promoting the growth and development of SMEs (Hove *et al.*, 2014). However, despite the government's interventions mentioned above, SMEs in South Africa still face sustainability problems, which explains why there is suppressed growth in the sector (Urban and Naidoo, 2018). Several researchers (Chinomona *et al.*, 2015; Mafini and Muposhi, 2017) acknowledge the high failure rate of businesses within the SME sector in South Africa. Unfortunately, the problem continues, as shown by a consistently high rate of SME failure, which calls for an investigation into the sustainability of SMEs in the South African manufacturing industry. In addition, it is notable that despite the numerous studies on the SME sector in South Africa, arguably, there is a general lack of evidence on the relationship between internal management systems, innovation and SME sustainability. This points to a significant research gap that has to be addressed as part of the solution to the lack of growth and the persistent failure facing the SME sector in the country.

This study adopted the resource-based theory as the framework for this study. The resource-based view (RBV) is aimed at providing insight to managers during their process of making strategic decisions for the organisation, where strategic resources are identified that have the potential to present a comparative advantage to the organisation (Madhani, 2010). The theory is aimed at ensuring that different resources at the organisation's disposal allow the company to develop a sustainable competitive advantage. In this theory, an organisation determines its success or failure by providing an allowance for it to check and review its disposable resources and decide how best it can bundle them to outplay its industry counterparts (Kolade *et al.*, 2019). According to the RBV, organisations acquire the ability to have sustainable value chain addition, new product development and new market penetration, hence organisational expansion (Madhani, 2010: 206). The theory facilitates consideration of the resources that are at the organisation's disposal to unlock the capabilities that are within the organisation and thus promote organisational competitiveness (Wuyts *et al.*, 2015). This is a move to offer and equip the organisation with a competitive advantage. The RBV applies to this study in that the three internal management systems under consideration in this study, namely, resource mobilisation, infrastructure development and employee training, are taken to be internal resources that can be harnessed to enable an organisation to become more competitive than its competitors. Likewise, both innovativeness and sustainability are considered dynamic capabilities.

## Literature Review

Literature consulted that explains the keywords as identified in the first section is presented here, as well as the hypothesis testing outcomes on the variables within the study. There is no general definition of Small and Medium Enterprises (SMEs), as they differ from country to country, but the most common measure used to define SMEs is a quantitative measure, such as the number of employees, the size of the enterprise, the annual turnover, and total assets (Mago and Toro, 2013). According to Zindiye (2008: 56), the term "SME" refers to an entity that is owned and operated independently and whose activities are not dominant in the field of operation. A common feature of the definitions above is that an SME is a formal enterprise with an annual turnover. Hence, in this study, the working definition of an SME in South African terms is a registered entity that employs not more than 250 employees and whose activities are not dominant in the sector in which it operates. This is in addition to the definition of a small business which the National Small Business Act of 1996 defines as a business entity that is separate and distinct, which might be either a corporate or a non-governmental organisation, either incorporated or not operating under the management of one or more owners, with the inclusion of its branches, if any or its subsidiaries, for the sake of catering for the interests of the establisher.

Innovation on the other hand is the creation of new ideas, products, processes and systems for the growth and success of the organisation (Nedelko and Potocan, 2013). Innovation is important in business operations, as there is a continual change in the way in which businesses operate, in consumer taste and in the general business environment (Hao *et al.*, 2013). These changes make the business environment challenging, and they call for the survival of the fittest, such that only those organisations with high adaptability levels, innovation and creativity survive (Lamprecht, 2011). Therefore, there is a need to ensure that employees are encouraged to use and accept

the innovative processes in place and continually embrace change, as well as to be innovative in their work (Kariv, 2019; Millicent and Reginald, 2014). According to Booyens (2013), there is a relatively high innovation rate within the SME sector, and this makes them on top of the innovation chain in the world. However, there is a problem in that policymakers within the government have inadequate knowledge of the operations of small businesses, and thus, they fail to develop and impose policies that promote innovation in the SME sector (Sula and Banyar, 2015). Additionally, Terziovski (2012) states that there is a need for SMEs to compete and align with the big companies, as they are characterised by proper planning and organisation, and if these aspects are combined with innovation, the entire economic cluster will flourish. Furthermore, Laforet (2008) states that for SMEs to survive, there is a need to be creative and innovative in whatever business activity they embark on and to produce unique products and services so that they can attain a competitive edge. Therefore, both the performance and the survival of SMEs are enhanced by the high innovation rate and capabilities they possess.

For sustainability, Hosoda (2019) defines it as an enabling environment that allows the business to survive and grow economically and socially. It is further defined as the firm's ability to maintain cash flow and be able to maintain profitability in the long run (Sula and Banyar, 2015). Business sustainability is driven by several factors, such as skilled labour, government regulations and management practices. These aspects also work in line with the ease of access to finance, the ability to manage risks effectively and industrial or sectoral competition. Sustainable factors are not born from outside of the organisation but are internally driven, such as human resource management, innovation, financial management, risk management, managing the business environment and investment decisions (Vieira, 2013). In this study, the dimensions of sustainability of SMEs, namely, general sustainability, the nature of the product, corporate governance, economic and financial sustainability, environmental sustainability, social sustainability, and the consideration of climate change are considered.

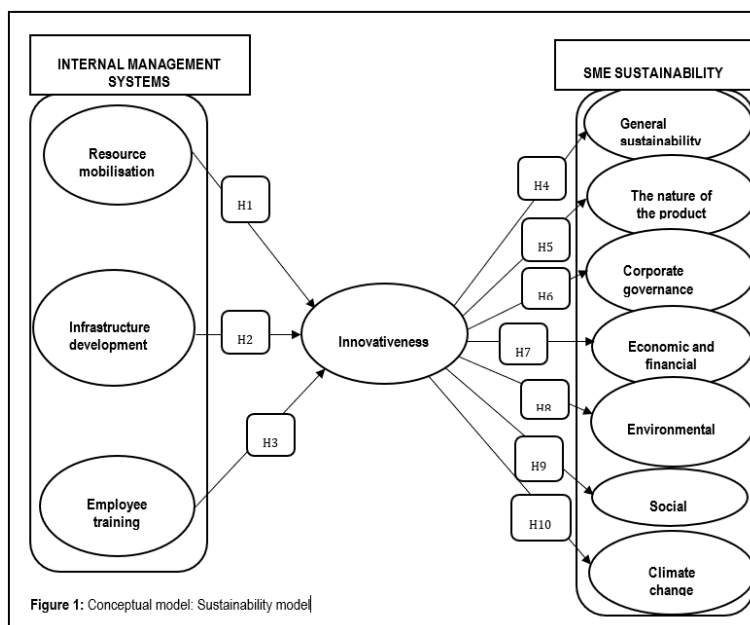


Figure 1: Conceptual model: Sustainability model

The conceptual model as outlined in Figure 1 outlines all the variables considered under the study linking the inputs to the outcome of the study. Figure 1 outlines various ways and strategies that can be employed to have sustainable SMEs.

### **Resources mobilisation and innovativeness**

The ability of an organisation to mobilise various forms of resources which range from human, financial, physical, and intellectual forms to mention a few is a pre-requisite to an organisation's innovative capability (Xiaoying, 2018). SMEs are known for their ability to bundle various types of resources and then convert them into business and thus being able to achieve organisational goals which are aligned to profitability, societal wellness, organisational growth, owner's wellness and many more (Batista and Francisco, 2019). Innovation is brought in by the act of human resources with the rightful skills to be able to identify opportunities through the creation of products and processes that are unique and differentiated from the rivals. Organisational ability to invest in research and

development has been one of the factors vital to the success of the SMEs (Guokun, 2019). This is because after having robust research, there will be an allowance to figure out the opportunities available within the market. Competition has made human resources vital for the survival and existence of SMEs and thus giving caution towards profitability and organisational sustainability (Mafini and Muposhi, 2017). Technology has overtaken the business world, and it requires an investment in technological infrastructure, as well as the involvement of a skilled and capable workforce towards cultivating organisational innovation and competitiveness (Oluwajoba, 2019). Adequate resource mobilisation and provision is a core aspect of ensuring innovation. The following hypothesis was made:

**H1:** There is a significant relationship between resource mobilisation and innovativeness among SMEs in the South African manufacturing industry.

### ***Infrastructure development and innovativeness***

Infrastructure development enhances the operations of an organisation, as they are the ones that offer security to the products of an organisation, allow effective communication through information technology infrastructure and permits productivity by offering a conducive working environment to the employees (Terziovski, 2017). A conducive working environment is an avenue for the promotion of the evolution of innovative ideas within the organisation. An organisation's sustainability is ensured by the ability of the organisation to invest in infrastructural development which requires a considerable financial resources commitment. Unfortunately, as a result of a deficiency in the availability of financial resources, SMEs have been unable to develop infrastructure, and this has hindered their ability to be innovative (Sachs, 2019). Infrastructure development also extends to technology where there are supposed to be mechanisms put in place to allow the accommodation of technological equipment such as computerised machinery, general computers used for production, wireless gadgets and many more (Xiaoying, 2018). These are essential vehicles for innovation within the business sector, and in the case of the current business environment where the business world is moving towards the 4<sup>th</sup> industrial revolution, there is a need to embrace infrastructural development to cater for such (Vilke, 2019). The availability of proper infrastructure gives momentum to the local industry to be competitive in global terms. This why there is a high failure rate within the SME sector, as it cannot sustain the competition emanating from the local and international sides. Thus, for there to be innovation in SMEs, there is a need for infrastructural development first, and this has led to the formulation of the following hypothesis:

**H2:** There is a significant relationship between infrastructure development and innovativeness among SMEs in the South African manufacturing industry.

### ***Employee training and innovativeness***

Skills impartation can only take place through employee training and development for them to be able to align with the current business operations (Dey and Petridis, 2019). Employee training is part of organisational investment in human resources. Through training, the employees will be empowered to take initiative in the operations of the business, and this has been a strategy used by companies to unlock the inert potentials that might be lying idle in them (Rothwell, 2018). Trained employees can make innovative contributions to the organisation thus making it sustainable. Trained employees are a source of competitive advantage to the organisation, and the global market is competing towards the attraction of skilled expertise (Hosoda, 2019). Training within SMEs has since been significant in value creation, especially in the case of the current business environment and exponential growth in innovation. Various benefits are associated with employee training, and these include but unlimited to process efficiency improvement, improved capability to embrace new technology, skills and operational methods, improved employee job satisfaction levels and positive change in the behaviour of employees (Honglie, 2019). The main important aspect is employee innovativeness that results in high-profit attainment which results in the sustainability of SMEs within the market, that is, an improvement in the economic position (Moore and Manring, 2019). Employee training is a vital element in the operations of an organisation because they are the ones who can turn the technology into profitable business operations. This has called for the formulation of the following hypothesis:

**H3:** There is a significant relationship between employee training and innovativeness among SMEs in the South African manufacturing industry.

### ***Innovativeness and general sustainability***

In an investigation that was undertaken on the relationship that exists between innovation and general organisational sustainability considering the various business success factors, it was found that those firms that are innovative-oriented could develop the talents in their human resources, continuously invest in organisational knowledge and adopt new technology. Thus, all this is meant to ensure the organisation's general sustainability in all areas of the business. A study on the development of innovation through networking reveals that the various networks formed during the firm's early stages are vital to the development of the organisation's capacity to have sustainable innovation (Dey and Petridis, 2019). The presence of different types of managerial functions is vital in the management innovation within SMEs. In addition, successful innovation comes in as a result of various factors that include "corporate culture, the presence of a department of innovation or formal process for innovation, number of employees which shows the size of the organisation as more employees are linked to high innovation levels and continuous product review" (Rothwell, 2018). General sustainability comes in through the interaction between the organisation and the various universities for innovation purposes. An organisation's improvement is a result of the usage of better technology in operations, identification and access to new markets, as well as meeting the requirements of customers (Oluwajoba, 2019). Government-supported SMEs can be more innovative than those that do not receive any form of support from the government, thereby enhancing the organisation's general sustainability (Tinoco, 2018). Therefore, general sustainability is a result of the innovativeness of the SMEs. This has led to the formulation of the following hypothesis:

**H4:** There is a significant relationship between innovativeness and general sustainability factors among SMEs in the South African manufacturing industry.

### ***Innovativeness and the nature of the product***

The development of a new product is an act of innovation that is aimed at attracting a new market segment from the traditional market (Ashley, 2018). Differentiation between the nature of the product is paramount to the life of an organisation as a result of the exposure to the global market where various firms are presenting their products to the market (Honglie, 2019). The nature of product differentiation comes from the ability of the organisation to be innovative in the production processes. A product that is user and environmentally friendly enhances organisational sustainability, as it stands a high chance of survival on the global market since it is concerned with the global product set standards (Burch, 2018). The interdependency that exists between the organisational sustainability and innovativeness is based on the product level. The nature of the product is the core of the sustainability of an organisation through differentiation, thereby making it possible to access new markets (Moore and Manring, 2019). This calls for the organisation to make continuous efforts in improving the production processes towards sustainable innovations. This has called for the formulation of the following hypothesis:

**H5:** There is a significant relationship between innovativeness and the nature of the product among SMEs in the South African manufacturing industry.

### ***Innovativeness and corporate governance***

Corporate governance implies how the organisation is ruled and controlled, and this is enhanced through the formulation of rules, and regulation that controls the way an organisation operates from inside and outside (Hosoda, 2019). Such type of governance principles has been established in a way that creates a conducive environment to permit innovation to take place. The innovation that takes place must be within the regulations of the particular organisation that complies with the social, economic, political and environmental aspects. The link between the board and the other wings of the organisation from within and outside must not suppress organisational innovation, rather, it has to promote it towards ensuring organisational sustainability (Batista and Francisco, 2019). The business structure under corporate governance gives an outline of the company goals together with the avenues on how to achieve the stated goals, as well as the monitoring performance. The benefits of corporate governance are unlimited to corporate prosperity but also extends to organisational responsibility (Terziovski, 2017). This has called for the proposition of the following hypothesis:

**H6:** There is a significant relationship between innovativeness and corporate governance among SMEs in the South African manufacturing industry.

### ***Innovativeness and economic and financial sustainability***

In an investigation about the role of innovation in SMEs wellness, it was found that innovation plays a pivotal role in the financial sustainability of the sector. SMEs' sustainable existence can be enhanced through innovation on customer needs. The ability of an organisation to identify the niche market, as well as the distinct customer needs, is the fundamental source for organisation's innovation (Bansal, 2019). Innovation has resulted in a considerable increase in organisational profitability by earning a higher competitive edge in the market. Innovation also leads to the creation of new contacts within the business world and co-operation with other influential businesses and parties during the innovation process. Financial resources are the main tools for the success of any given organisation and for one to be successful in operations, there is a need for extensive investment in business operations (Honglie, 2019). Enhancement of the effective and efficient operations of an organisation is based on the level of financial investment. However, for an organisation to experience financial and economic sustainability, there is a need to devise and implement strategies that make the organisation be on top of the market sustainably (Burch, 2018). The strategies include innovation through an investment in the available human resources to enhance their capabilities, which is a viable competitive earning strategy for the organisation (Rothwell, 2018). Innovative product offering attracts a new consumer base to the organisation, and this has multiple effects on the organisation's profitability and owner's wealth (Sachs, 2019). However, the two main aspects hindering innovation within SMEs are attributed to insufficient financial and time resources.

**H7:** There is a significant relationship between innovativeness and economic and financial sustainability among SMEs in the South African manufacturing industry.

### ***Innovativeness and environment sustainability***

Sustainable innovativeness implies the ability to avail organisational and technical progression that can sell successfully in the market without compromising the dimensions of sustainability (Aguado and Holl, 2019). The market system entails that sustainable development is a result of sustainable innovations that can be brought in by entrepreneurs who are considerate of environmental and social affairs, and this can be there as a result of the superior processes and products that are environmentally friendly. Thus, it results in the successful business operation because of the acceptance of the products in the marketplace. In essence, market innovations which are core drivers of sustainable development for they do not take place by accident but are a result of the creativity of the management that entwines it in their core business operations (Honglie, 2019). The main aim of the management is the creation of "new products, services, techniques and organisational modes" that can drastically reduce the environmentally aligned impacts, as well as improve the quality of life (Bansal, 2019). A sustainable entrepreneurial activity is defined as a creative destruction in that it entails the destruction of the traditional "production methods, products, market structures and consumption patterns" which are replaced with environmentally friendly superior products and services (Hosoda, 2019). Thus, the products and the production processes create a progressive environmentally sustainable market dynamic. Environmentally sustainable entrepreneurship that comes as a result of innovation is called 'ecopreneurship'. Thus, for there to be environmentally sustainable SMEs, there is a need to have innovation first. As a result, the following hypothesis was formulated in this study:

**H8:** There is a significant relationship between innovativeness and environmental sustainability among SMEs in the South African manufacturing industry.

### ***Innovativeness and social sustainability***

Sustainable entrepreneurship can be viewed from a different dimension as the level of innovativeness that leads to the supply of socially beneficial products or product project processes that is meant to conquer a large market share (Xiaoying, 2018). This aspect of availing products or services that are socially sustainable is not limited to SMEs but to large companies, since there exists sustainable entrepreneurship as well. Socially sustainable business operations create a substantial successful market that is bundled with socially beneficial products (Hosoda, 2019). Social entrepreneurship was created in a way to ensure that the innovations made during business operations result in social sustainability and societal change. A move to achieve societal goals through entrepreneurship, as well as business approaches, was found to be resulting in organisational sustainability (Cuihong, 2018). To achieve social sustainability through entrepreneurship, an organisation needs to devise strategies that lead to the creation of ideas that are new to the industry while at the same time not compromising

the morals and beliefs of society (Burch, 2018). Thus, the organisation has to be considerate of the society within which it is operating, and this can be done through the provision of employment to locals, donating to charities and developing the infrastructure. Sustainable entrepreneurship is seen as an innovative activity that is meant to create societal values by breaking a socially beneficial market. Thus, to have a socially sustainable entrepreneurship, there must be innovation first (Ashley, 2018). This has led to the formulation of the following hypothesis:

**H9:** There is a significant relationship between innovativeness and social sustainability among SMEs in the South African manufacturing industry.

***Innovativeness and consideration of climate change***

Climate change as an environmental category has had considerable attention in the world of business because of the contribution of business activities towards its destruction (Aguado and Holl, 2019). The climatic conditions are becoming unsustainable, and as a result of careless business activities, organisations are not complying with global business operation standards. Climate change sustainability has become the key focus within the international community, and western countries have come up with policies on climate sustainability, such as the European and the United Kingdom policy on business operations regarding the environment (Batista and Francisco, 2019). Understanding the activities of the SMEs’ impact on the environment and then engaging on general terms, as well as on climate change, is very important as it is a move to create a sustainable business environment through the preservation of the ozone layer (Hosoda, 2019). Social and environmental policies on the SMEs are invisible, and this makes them ignorant of social and environmental aspects (Honglie, 2019). Coming up with innovative strategies on ways to undertake business operations in an eco-friendly way is the way to ensure sustainable climate change. Therefore, this has led to the proposition of the following hypothesis:

**H10:** There is a significant relationship between innovativeness and the consideration of climate change among SMEs in the South African manufacturing industry.

**Methodology**

A quantitative research design was adopted in this study. The target population for this study was SMEs in the manufacturing sector in Gauteng Province, South Africa. Gauteng Province was selected since it is the economic epicentre of South Africa and has the highest number of manufacturing SMEs in the country. There was no sampling frame, however, the online South African Small Business Directory was used to identify the available SMEs and their contact details. Since the study used the structural equation modelling (SEM) procedure to analyse data, sample size recommendations for SEM were applied. The sample size for this study was set at n = 500 respondents.

In this study, reliability was tested through the average value extracted (AVE, Cronbach’s alpha, and Composite reliability). Table 1 below presents the results of the reliability descriptive statistics, composite reliability, average value extracted, Cronbach’s test and factor loading.

**Table 1:** Accuracy analysis statistic

Research constructs		Descriptive statistics		Cronbach’s alpha		CR value	AVE	Factor loading
		Means	Standard deviation	Item-total	αvalue			
Resource Mobilisation (RM)	RM1	4.880	4.190	0.800	0.758	0.758	0.613	0.872
	RM3			0.798				0.826
	RM5			0.694				0.714
Infrastructure Development (IN)	IN1	5.817	4.189	0.733	0.741	0.741	0.678	0.820
	IN3			0.705				0.757
	IN4			0.791				0.860
Training (TR)	TR1	3.843	3.769	0.752	0.673	0.673	0.512	0.809
	TR3			0.706				0.738
	TR5			0.614				0.649
	TR7			0.600				0.605
Innovativeness (IV)	IV1	3.840	3.769	0.801	0.699	0.699	0.555	0.850
	IV3			0.500				0.591
	IV4			0.834				0.867

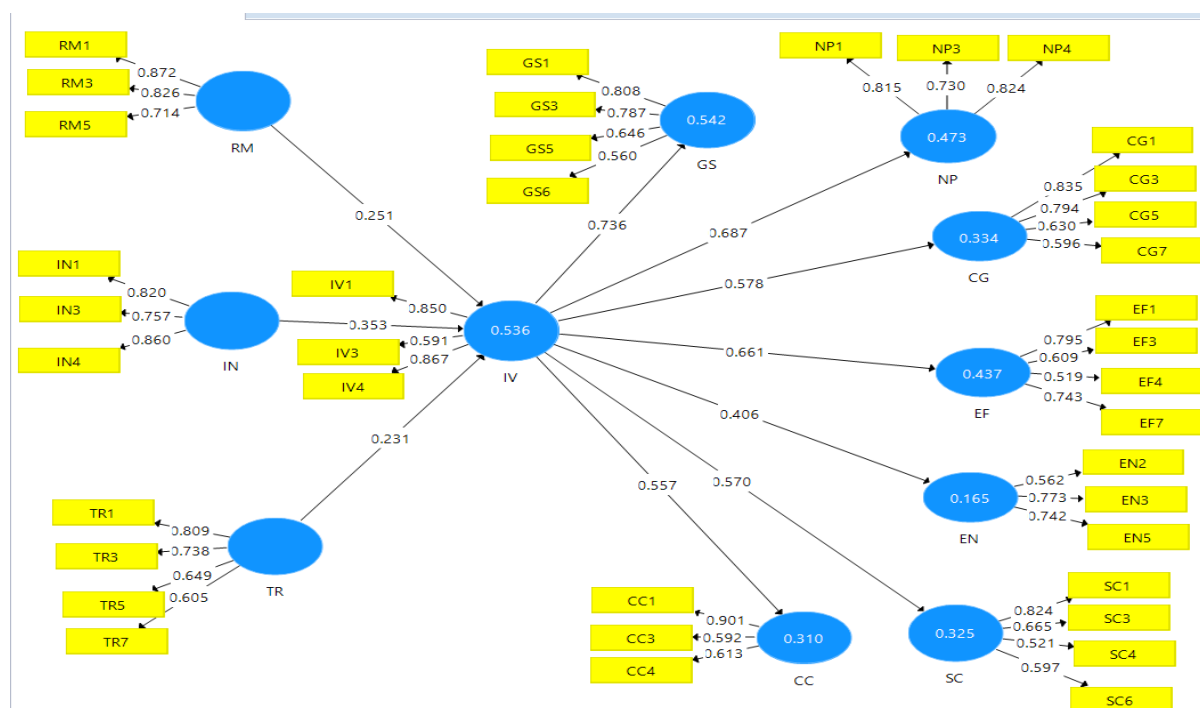
Research constructs		Descriptive statistics		Cronbach's alpha		CR value	AVE	Factor loading
		Means	Standard deviation	Item-total	alpha			
General Sustainability (GS)	GS1	3.809	3.148	0.793	0.650	0.650	0.530	0.808
	GS3			0.751				0.787
	GS5			0.601				0.646
	GS6			0.500				0.560
Nature of product (NP)	NP1	4.909	3.338	0.736	0.719	0.719	0.680	0.815
	NP3			0.697				0.730
	NP4			0.800				0.824
Corporate Governance (CG)	CG1	5.761	4.259	0.792	0.666	0.666	0.505	0.835
	CG3			0.709				0.794
	CG5			0.602				0.630
	CG7			0.500				0.596
Economics and Finance (EF)	EF1	1.740	5.149	0.704	0.671	0.671	0.518	0.795
	EF3			0.511				0.609
	EF4			0.500				0.519
	EF7			0.702				0.743
Environment (EN)	EN2	3.789	3.255	0.503	0.695	0.695	0.511	0.562
	EN3			0.751				0.773
	EN5			0.709				0.742
Social (SC)	SC1	4.835	3.766	0.802	0.654	0.654	0.507	0.824
	SC3			0.617				0.665
	SC4			0.502				0.521
	SC6			0.518				0.597
Climate (CC)	CC1	1.790	3.999	0.888	0.719	0.719	0.677	0.901
	CC3			0.567				0.592
	CC4			0.600				0.613

RM=Resource Mobilisation; IN=Infrastructure Development; TR= Employee Training; IV= SME Innovativeness; G=General Sustainability; NP= Nature of Product; CG=Corporate Governance; EF=Economic and Financial Sustainability; EN= Environmental; SC= Social; CC=Climate Change

### **Cronbach's alpha test**

Cronbach alpha test is an important measure that is mainly focused on internal consistency reliability measurements where the mean of possible split half coefficients is identified that will be a direct result of the splitting of different scale items (Pandey and Pandey, 2019). In this study, the composite reliability was (with RM=0.758; IN=0.741; TR= 0.673; IV= 0.699; GS=0.650; NP=0.719; CG=0.666; EF=0.671; EN=0.695; SC=0.654; and CC=0.719) as shown in Table 2. With reference to the overall correlation, it is evident that the values for all constructs that are from RM to CC. They are all above the value of 0.3 as per the stipulations of Field (2005) who states that a total correlation of below a value of 0.3 shows that the items under investigation do not correlate well in the given scale. Besides, it signifies that the item is not measuring the same construct under measurement by the other items. The results show that all the constructs are reliable since the values are beyond the standard ones in both the Cronbach alpha and the item correlation.





**Figure 2:** SMART PLS figure  
 RM=Resource Mobilisation; IN=Infrastructure Development; TR= Employee Training; IV= SME Innovativeness; GGeneral Sustainability; NP= Nature of Product; CG=Corporate Governance; EF=Economic and Financial Sustainability; EN= Environmental; SC= Social; CC=Climate Change

Smart PLS 3 software was used to generate Figure 2 which shows the factor loadings and the path co-efficiency of the hypotheses. The results show that this is an adequate model fit for the eleven-factor model since the majority of factor loads are above 0.5, thereby showing a strong relationship amongst the factor as denoted by Divya (2017).

**Table 2:** Results of Structural Equation Model Analysis

Path Coefficients	Hypothesis	Path Coefficient	Outcome
Resource Mobilisation → SME Innovativeness	H <sub>1</sub>	0.251***	Accepted/significant
Infrastructure Development → SME Innovativeness	H <sub>2</sub>	0.353***	Accepted/significant
Employee Training → SME Innovativeness	H <sub>3</sub>	0.231***	Accepted/significant
SME Innovativeness → General Sustainability	H <sub>4</sub>	0.736***	Accepted/significant
SME Innovativeness → Nature of the Product	H <sub>5</sub>	0.687***	Accepted/significant
SME Innovativeness → Corporate Governance	H <sub>6</sub>	0.578***	Accepted/significant
SME Innovativeness → Economic and Financial Sustainability	H <sub>7</sub>	0.661***	Accepted/significant
SME Innovativeness → Environment	H <sub>8</sub>	0.406***	Accepted/significant
SME Innovativeness → Social	H <sub>9</sub>	0.570***	Accepted/significant
SME Innovativeness → Climatic change	H <sub>10</sub>	0.557***	Accepted/significant

significance level <0.001\*\*\*

**Source:** Authors' compilation

As portrayed in Table 3, all beta coefficients for the hypothesised paths are significant at a level of  $p < 0.001$ . The table also shows that ten of the hypotheses (H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub>, H<sub>5</sub>, H<sub>6</sub>, H<sub>7</sub>, H<sub>8</sub>, H<sub>9</sub>, H<sub>10</sub>) were accepted. The discussion of the stated results will be done in the upcoming section.

## Discussion of Results

Results from Table 3 show that all path coefficient estimates were above 0.001, and this shows that the entire ten hypotheses were supported from H1 to H10. The first hypothesis states that there is a positive relationship between resource mobilisation and innovativeness among SMEs in the South African manufacturing industry. In this regard, the path coefficient is 0.251 thereby depicting that resource mobilisation has a positive influence on the innovativeness among SMEs in the South African manufacturing industry. In support of this, the ability of an organisation to mobilise various forms of resources which range from human, financial, physical and intellectual

ones, to mention a few, is a prerequisite to organisation's innovative capability (Xiaoying, 2018). The second hypothesis states that there is a positive relationship between infrastructure development and innovativeness among SMEs in the South African manufacturing industry. In this regard, the path coefficient is 0.353 thereby depicting that infrastructure development has a positive influence on the innovativeness among SMEs in the South African manufacturing industry. An organisation's sustainability is ensured by the ability of the organisation to invest in infrastructural development which requires a considerable financial resources commitment. Thus, infrastructure development is a vital tool in the sustainable development of SMEs (Sachs, 2019: 45). Thus, for there to be innovation in SMEs, there is a need for infrastructural development first, and this has led to the validation of the hypothesis.

Hypothesis three states that there is a positive relationship between employee training and innovativeness among SMEs in the South African manufacturing industry. In this regard, the path coefficient is 0.231 thereby depicting that training has a positive influence on the innovativeness among SMEs in the South African manufacturing industry. Trained employees can make innovative contributions to the organisation thus making it sustainable. It is of great importance for SMEs to know the benefits associated with employee innovativeness in the market (Hosoda, 2019: 23). Thus, the main contributor to the cultivation of employees' ability to be innovative is aligned to training. In other terms, training means the learning and development process that is meant to create a complete and total change at the individual employee level in a way to influence their innovative capabilities and on the job performance which is meant to ensure that they complete tasks at hand and are technically oriented as well as having the required skills (Tornatzky and Klein, 2017: 42). Employee training is a vital element in the operations of an organisation because it can turn technology into profitable business operations. The fourth hypothesis states that there is a positive relationship between innovativeness and general sustainability factors among SMEs in the South African manufacturing industry. In this regard, the path coefficient is 0.736 thereby depicting that innovativeness has a positive influence on the general sustainability factors among SMEs in the South African manufacturing industry. A study on the development of innovation through networking reveals that the various networks formed during the firm's early stages are vital to the development of the organisation's capacity to have sustainable innovation (Dey and Petridis, 2019). In addition, successful innovation comes in as a result of various factors that include "corporate culture, the presence of a department of innovation or formal process for innovation, number of employees which shows the size of the organisation as more employees are linked to high innovation levels and continuous product review" (Rothwell, 2018: 42).

The fifth hypothesis states that there is a positive relationship between innovativeness and the nature of the product among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.687 thereby depicting that innovativeness has a positive influence on the nature of the product among SMEs in the South African manufacturing industry. It is further noted that there is a significant relationship that exists between innovativeness and the nature of the product among SMEs in the South African manufacturing industry. The innovative level of employees is dependent on the knowledgeability of the employees, and this calls for SMEs to extensively and appropriately invest in employee training activities (Hosoda, 2019). The nature of the product is core to the sustainability of an organisation through differentiation, thereby making it possible to access new markets (Moore and Manring, 2019). The sixth hypothesis states that there is a positive relationship between innovativeness and corporate governance among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.578 thereby depicting that innovativeness has a positive influence on corporate governance among SMEs in the South African manufacturing industry. An involvement of fair business practices in terms of offering products that are authentic and not harmful to consumers is a major tool for the success and sustainable operations of an organisation (Oluwajoba, 2019). The link between the board and the other wings of the organisation from within and outside must not suppress organisational innovation; rather, it has to promote it towards ensuring organisational sustainability (Batista and Francisco, 2019). The benefits of corporate governance are not limited to corporate prosperity but also extend to organisational responsibility (Terziovski, 2017).

The seventh hypothesis states that there is a positive relationship between innovativeness and economic and financial sustainability among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.661 thereby depicting that innovativeness has a positive influence on the economic and financial sustainability among SMEs in the South African manufacturing industry. Financial resources are the main tool for the success of any given organisation, and for one to be successful in operations, there is a need for extensive investment in the business operations (Honglie, 2019: 45). However, for an organisation to experience financial and economic

sustainability, there is a need to devise and implement strategies that make the organisation be on top of the market sustainably (Burch, 2018: 34). The eighth hypothesis states that there is a positive relationship between innovativeness and environmental sustainability among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.406 thereby depicting that innovativeness has a positive influence on the environmental sustainability among SMEs in the South African manufacturing industry. Therefore, the relationship that exists between innovativeness and environmental sustainability is significant among SMEs in the South African manufacturing industry. For decades, the management of globally established companies has increased their attention on issues about environmentally sustainable development, and they have been drivers of such (Hahn, 2019). The main aim of the management is the creation of “new products, services, techniques and organisational modes” that can drastically reduce the environmentally aligned impacts, as well as improve the quality of life (Bansal, 2019).

The ninth hypothesis states that there is a positive relationship between innovativeness and social sustainability among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.570 thereby depicting that innovativeness has a positive influence on the social sustainability among SMEs in the South African manufacturing industry. A move to achieve societal goals through entrepreneurship, as well as business approaches, was found to be resulting in organisational sustainability (Cuihong, 2018). Sustainable entrepreneurship is seen as an innovative activity that is meant to create societal values by breaking a socially beneficial market. Thus, to have a socially sustainable entrepreneurship, there must be innovation first (Ashley, 2018). The tenth hypothesis states that there is a positive relationship between innovativeness and the consideration of climate change among SMEs in the South African manufacturing industry. The path coefficient in this regard is 0.557 thereby depicting that innovativeness has a positive influence on the consideration of climate change among SMEs in the South African manufacturing industry. Climate change sustainability has become the key focus within the international community, and western countries have come up with policies on climate sustainability, such as the European and the UK policy on business operations regarding the environment (Batista and Francisco, 2019). Understanding the activities of the SMEs’ impact on the environment and then engaging on general terms, as well as on climate change, is very important as it is a move to create a sustainable business environment through the preservation of the ozone layer (Hosoda, 2019: 40). Social and environmental policies on the SMEs are invisible, and this makes them ignorant of the social and environmental aspects (Honglie, 2019).

### **Practical and Theoretical Implications of the Study**

The various contributions of this study are addressed in this section of the study in both practical and theoretical perspectives. Thus, the practical implications are related to the benefits that are aligned with all SME stakeholders. The theoretical benefits relate to the applications of the study in future studies in which it will be used as literature. The study assists in confirming the theoretical assumptions that are there as purported by the conceptual framework on the relationship that exists amongst internal management systems, innovation and sustainability of SMEs. The model is so robust that it contributes a lot to the theoretical aspect of the study. The results that were presented in the study where literature was reviewed in conjunction with the primary findings about the relationship that exists amongst internal management systems, innovativeness and sustainability of SMEs were meant to help all the SMEs stakeholders for the sake of ensuring that SME owner-managers use the framework towards the enhancement of SME survival and growth. In addition, in this study, the relationship from the path model view gave an in-depth sight of how the elements in the constructs affect each other. The results from the study influenced the body of knowledge, as the literature is expanded, and this results in the facilitation of further debates amongst researchers with SMEs.

The study is of practical value in several ways. This includes the ability to give a hint on how best SMEs can be established, operated, and supported towards ensuring their growth. This helps various stakeholders with the main reference placed on owner-managers and the Government through its national growth initiative to be able to realise the exact procedure to follow for the sake of ensuring the successful operations of the SME sector. Additionally, the recommendations made in this study are unlimited to SMEs in the manufacturing industry, but they are universal, meaning that they apply to all SMEs across the nation and the continent. The study has established an easy-to-follow-up procedure with each stakeholder’s responsibility spelt out for the sake of ensuring the continual existence of the SME sector while preserving the readily available resources for use by the upcoming generations. Various studies across the globe were consulted thereby making it feasible to make a follow-up of the process on how to ensure SMEs’ survival, growth, and existence from various perspectives despite the location. The study

has set up a standard that can be used as a benchmark for ensuring the sustainability of SME operations. Besides, the study has assisted the stakeholders in how best they can incorporate and make use of the technology to the benefit of the SME sector.

## Conclusion

Practically, the results provided in this study are beneficial to SME owners and managers in the manufacturing industry regarding the ways to improve the sustainability and growth of their businesses. The study revealed the strategies for improving the influence of internal management systems on innovation. SME owner-managers in the South African manufacturing industry can take note and employ these strategies to benefit their organisations. This includes giving hints on how best SMEs can be established, operated and supported towards ensuring their growth. This helps various stakeholders with the main reference placed on owner-managers and the government through its national growth initiative to be able to realise the exact procedure to follow for the sake of ensuring the successful operations of the SME sector. SME owner-managers must ensure that policies, values and tenants of corporate governance are observed in their organisations for them to grow. SME owner-managers in the SME industry need to ensure that principles, such as the risk and return principle, cash flow principle and profitability and liquidity principle, to mention a few, are observed in their organisations so that economic and financial sustainability can be realised. The study has established an easy-to-follow procedure with each stakeholder's responsibility spelt out for the sake of ensuring the continued existence of the SME sector while preserving the readily available resources for use by future generations. Various studies across the globe were consulted, thereby making it feasible to follow up on how to ensure SMEs' survival, growth and existence from various perspectives, despite location. The study has set up a standard that can be used as a benchmark for ensuring the sustainability of SME operations.

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